



# WASHINGTON STATE BOARD OF EDUCATION

OLD CAPITOL BUILDING • ROOM 253 • P.O. Box 47206 • 600 S.E. WASHINGTON • OLYMPIA, WA 98504-7206

July 14, 2008

Dear Board Members:

Sometimes we are so busy thinking about problems in education that we forget to pause and celebrate success. And success we have had, with the graduation of the Class of 2008, the first class to meet the state's standards on the reading and writing to graduate. This work has not been easy and the real success lies with the teachers in schools who have focused very hard on the instruction in all grades, to help students read and write at the standards we expect. To have a better feel for the reading assessment at all grade levels go to:

<http://www.k12.wa.us/assessment/WASL/ReadingAssessment.aspx>

Your part in this was to set the performance cut scores to determine what is proficient for the WASL as well as its alternatives. Two years ago you provided some very thoughtful feedback to OSPI on the Collection of Evidence. These alternatives have given students many ways to demonstrate proficiency in meeting the standards.

I am looking forward to our retreat at Ocean Shores next month. Dee Endelman will be our facilitator once again and she has sent you a survey to fill out on how well you feel the Board is doing. If you haven't already completed the survey, please do so.. This helps us think about where to focus some of our time. Jack has promised some fun at his house on Monday evening. I think music, seafood, and the beach are all part of the plan! Thanks to Amy, Sheila, Jack and, Steve DP for helping out.

Our student representatives are doing some exciting travelling this summer. They are modeling the new global world and making connections! Austianna will be in Tajikistan in July (and thus not at our Board meeting) and Lorilyn is going to Japan in November. Both of them were awarded scholarships to do this travel. We must have an update from them this fall!

My travel has been more mundane, but still of interest to our Board work. I found the hottest places to be – Austin, Texas for the Education Commission of the States (ECS) conference in early July and then Palo Alto, California last week.

The big themes at ECS were to have the U.S. focus on benchmarking itself to international standards rather than just comparisons between states as we live in a global world. I am sending you the link to their Web site for the materials presented. The most powerful one for me was on Session 355, Benchmarking Internationally: The Need to Confront Reality by Dr. Andreas Schleicher, who works for the Organization for Economic Cooperation and Development in Europe. I highly recommend you look at his PowerPoint:

[http://www.ecs.org/html/meetingsEvents/NF2008/NF2008\\_resources.asp](http://www.ecs.org/html/meetingsEvents/NF2008/NF2008_resources.asp)

In California, I spent the past week with five very diverse and interesting Washington districts, their staff, and consultants, who will be involved with the new OSPI Comprehensive District Improvement Summit program. It made me think a lot about what we are hoping to do with our Priority Schools and our accountability program and how we can complement the program OSPI is doing. There are five districts (Renton, Wapato, Mount Adams, Mount Vernon, and Othello) that have volunteered to participate in this OSPI three year program, funded mostly by the feds. Janell Newman will give you a brief update at our Board meeting. Each district has a unique story and all have a student population where the majority is students of color with significant ELL populations. I was very impressed with the superintendents in these districts and their commitment to close the achievement gap for their kids. They are focusing on all the important things, such as, data and needs assessments; class room instruction; and interventions and monitoring efforts. I am impressed with how OSPI and their consultants are working to custom tailor the support to each district. I love the slogan that Mount Vernon came up with: "It's our kids' future: do the math." I won the award at the end of the conference for spending the most time on my cell phone (calling back to the SBE office). I also got to read the papers (and opinions) on California's State Board of Education, which just adopted a requirement that all 8<sup>th</sup> graders take Algebra I.

So, on to the Board meeting at the Evergreen School District! I want you to know that we, as staff, have made some changes to the Board packet format. We are now using a memo format with no short introduction tab. We felt we were repeating ourselves twice. In addition, we will provide at the beginning of the Board meeting, a list of draft motions for your consideration at the Thursday Business section. Loy and I really need to have motions written down when you vote. While we expect there may be some changes to the motions, we will ask that the amended versions also be written. This way you are clear on what you are voting on and we are clear for our minutes and staff direction on the action.

### **Wednesday July 23**

#### **Competency Based Credits**

John Deeder, who is the Superintendent at the Evergreen School District, will share with us the work his District is doing in terms of creating competency based credits. We have heard a lot of "buzz" about this idea as we travelled the state with our CORE 24 draft proposal. Many people are attracted to getting away from the 150 hours of seat time to earn a credit. The ability for districts to develop competencies has been on the

books for over 10 years, but very few (we count three or four) have done much with it. Evergreen has done more than most to create the opportunity district wide for students to take advantage of this option. We think John has something to offer that many districts could use.

### **Meaningful High School Diploma**

Our work session is early next week so I am writing this not quite knowing how things will evolve. We have all spent a lot of time listening to many people and groups that represent a wide variety of constituencies. Eric, Kathe, and I thought it was valuable to take that input and turn it into several options for you all to consider. I want to be sure that you, as Board members, understand and are in agreement about the proposed package and next steps. This is a significant piece of work and we hope the work session will provide you with the time you need to dig deeper before you decide at the Board meeting on a recommendation to staff to move forward. We have set aside the whole morning for this discussion at our Board meeting. Thanks to so many of you for attending the work session. I understand that the League of Education Voters and the Partnership for Learning are bringing a bus load of folks to the Board meeting in support of CORE 24. We will have letters on hand from those who support and do not support the Board work, based on the March proposal that we have shared in our outreach sessions. Special thanks to our intern, Jessica Ganet, for her help digesting all the input!

### **ACT Cut Scores in Writing for Alternative WASL and WASL Results for the Class of 2008 and Beyond**

Joe Willhoft will be bringing you the last of the college test cut scores needed for students who want to use the ACT writing as an alternative to the WASL. You have already approved reading, writing, and math for the SAT and reading and math for the ACT, at previous Board meetings. Joe will also share some of the WASL results from students in the classes of 2008 and beyond.

### **Math Standards**

You will have had the opportunity to dig into the Algebra II standards and the introductory language to the standards at the July work session with Linda Plattner. The math panel met on these standards and language in June. Linda and her team have written these recommendations for Algebra I, Geometry, and Algebra II so that OSPI can now create the actual standards and also create them for an integrated series of high school math standards. The introductory language explains what the standards are and how they have changed from the current ones, as well as some language around the use of technology, which you directed our consultant to prepare. Linda Plattner will be available by phone at the Board meeting.

### **Rule for the Three Math Credits and High School and Beyond Plan**

This proposed rule has been before you at previous Board meetings and you will now hold the official public hearing to prepare for consideration of the rule for adoption. We have now put the rule into the legal language, which reflects the policies you directed to require students to take Algebra I, Geometry (or an Integrated I and II) for their first two

credits. Algebra II will be the third credit with the ability for students to take a CTE equivalent (not yet created) or elect a third math credit that is more appropriate to their career path through a specific process in their High School and Beyond Plan. You have received many letters in support of this rule. Please refer to your Board packet for the key organizations' letters or motions. You are also putting back in, the language on the High School and Beyond Plan, which was taken out by mistake when the rule was last revised. We may make some changes to this part in the future, based on our work this year, but we will not do so at this time.

### **Overview of K-12 Funding and Proposals for Change**

With all the discussion over revising the basic education funding formula this year, we have asked Jennifer Priddy, Assistant Superintendent for Finance at OSPI to give you a briefing that will provide an overview on the current K-12 funding system – the challenges for the state and districts. Then Brad will share a table he has prepared on comparing the big ideas in the three proposals that address a comprehensive package to improve the current basic education funding (there are many smaller proposals that address certain topics such as nurses or special education). The three proposals were proposed to the Joint Basic Education Finance Task Force by the League of Education Voters, the Full Funding Coalition (WASA, AWSP, WEA, WSSDA, and PEA) and OSPI. We have asked representatives from those groups to make very brief presentations and be available for questions from you.

**Dinner will be at the Applewood, Northwest Cuisine in Vancouver, starting at 6:30. You have directions in your packet..**

### **Thursday July 24**

#### **OSPI Comprehensive District Improvement Summit Program**

Janell Newman, from OSPI, will fill you in on the work that OSPI is doing with the five district cohort that is beginning this new program, to address low performing schools and their districts, through a district approach to build capacity and ensure sustainability for improvement over time. Previously OSPI has mostly focused on individual schools for improvement under Title I. We thought it would be important for you to understand this work and think about how we can be “congruent” with the work we are doing. I spoke about my visit with them earlier in this letter.

#### **Policy Barriers Study**

In June, we had a SPA work session with the Northwest Educational Lab on the Policy Barriers draft study they have done for us. As there was some confusion about the purpose of this study on the part of some at that meeting, I want to be clear that we asked them to do this work to help provide a Washington systems context to lay the ground for Mass Insight's work as we look at how to build state and local partnerships for our Priority Schools, which are the most chronically underperforming in our state. We hope some of the policy barriers identified can be addressed as we create the incentives for those partnerships to change away from business as usual.

## **Mass Insight Update**

Mass Insight also participated in the SPA work session last month. They will be discussing the work they have done with a design team of Washington educators and some survey work to create draft concepts for a state driven approach that can significantly improve chronically underperforming schools (our Priority Schools) at the district and school level. We will have another work session on August 12 with them, to continue to refine their work, which will then become a draft proposal at our September Board meeting.

## **Business Items**

We will have a draft motion sheet for your review, to hand out the first day of the meeting on all the business items. Some big pieces for your consideration to approve include: an MHSD framework of graduation requirements, the math standards report and the third math credit rule. Steve Floyd, Jeremy Rogers, (an Ilwaco math teacher who used to be on our math panel) and I will, by that time, have selected a contractor to help us with the review of the OSPI math curricular menus this fall. We would like to extend the Heil and Associates contract to do some additional work on the science standards. We ask you to approve Board meeting dates for 2009 (we have made some slight adjustments to space the meetings to once every two months rather than a few which happen six weeks apart) and the FY 09 Board budget for our state appropriations for this fiscal year. We have requests for 180 day waivers. There is one waiver, in your packet that we are recommending you not approve. See the details from Brad. We also have some private schools that need approval.

Okay that's it for now. Time to get ready for tomorrow's work session!!

NOTE: We will have a special teleconference call on July 30 at noon, to determine whether to give approval to the Superintendent of Public Instruction for adoption of the high school mathematics standards.

Cheers,

Eddie Harding



## State Board of Education Meeting

Evergreen Public Schools

13501 NE 28<sup>th</sup> Street

Vancouver, Washington

July 23 9:00 a.m. — 5:00 p.m.

July 24 8:30 a.m. — 3:15 p.m.

### AGENDA

#### Wednesday, July 23, 2008

**9:00 a.m. Call to Order**

**Welcome**

Mr. John Deeder, Superintendent of the Evergreen School District

Pledge of Allegiance

Agenda Overview

Approval of Minutes from the May 14-15 Meeting (**Action Item**)

**9:10 a.m. Evergreen School District Presentation**

**Competency Based Credits**

Mr. John Deeder, Superintendent, Evergreen School District

**9:40 a.m. Meaningful High School Diploma: Public Outreach, Proposed Framework for High School Graduation Requirement Options: CORE 24, Culminating Project, High School and Beyond Plan**

Mr. Eric Liu, Board Lead, SBE

Dr. Kathe Taylor, Policy Director, SBE

Board Discussion

**10:30 a.m. Break**

**10:45 a.m.** Board Discussion Continued

**11:45 a.m. Public Comment**

**12:15 p.m. Lunch**

**1:00 p.m. Washington Student Assessment of Learning: Class of 2008 Results and ACT High School Writing Cut Scores as Alternative to the Washington Student Assessment of Learning**

Dr. Joe Willhoft, Assistant Superintendent,

Mary Jean Ryan, *Chair* • Warren T. Smith Sr., *Vice Chair* • Dr. Terry Bergeson, *Superintendent of Public Instruction*  
Dr. Bernal Baca • Amy Bragdon • Dr. Steve Dal Porto • Steve Floyd • Dr. Sheila Fox • Phyllis Bunker Frank • Austianna Quick  
Linda W. Lamb • Eric Liu • Dr. Kristina Mayer • John C. "Jack" Schuster • Lorilyn Roller • Jeff Vincent • Edie Harding, *Executive Director* (360) 725-6025 • TTY (360) 664-3631 • FAX (360) 586-2357 • Email: sbe@k12.wa.us • www:sbe.wa.gov.

Assessment and Student Information, OSPI

**1:30 p.m. Math Standards Recommendations for Algebra I, Geometry, and Algebra II: Strategic Teaching Report**

Mr. Steve Floyd, Board Lead, SBE

Ms. Edie Harding, Executive Director, SBE

Ms. Linda Plattner, Strategic Teaching

**1:45 p.m. Public Comment**

**2:15 p.m. Break**

**2:30 p.m. Proposed Rule for Three Credits of High School Mathematics and High School and Beyond Plan**

Mr. Steve Floyd, Board Lead, SBE

Ms. Edie Harding, Executive Director, SBE

Mr. Brad Burnham, Legislative and Policy Specialist, SBE

**3:00 p.m. Public Hearing on Three Credits of High School Mathematics and High School and Beyond Plan**

**Public Comment**

**3:30 p.m. Overview of K-12 Funding: Current Picture of State and Local Funding for K-12 and Review of Comprehensive Proposals to Basic Education Finance Task Force**

Ms. Jennifer Priddy, Assistant Superintendent for Finance, OSPI

Mr. Brad Burnham, Legislative and Policy Specialist, SBE

**Brief Presentations and Discussion on Comprehensive Proposals**

The Full Funding Coalition

The League of Education Voters

Representatives from OSPI

**5:00 p.m. Adjourn**

**Thursday, July 24, 2008**

**8:30 a.m. OSPI District Improvement Program Update**

Ms. Janell Newman, Assistant Superintendent  
School and District Improvement, OSPI

**9:00 a.m. Update on System Performance Accountability Public Outreach and Consultants' Work for Policy Barriers Study and State/Local Partnerships**

Dr. Kris Mayer, Board Lead, SBE  
Ms. Edie Harding, Executive Director, SBE

**9:10 a.m. Policy Barriers Study**

Dr. Robert Rayborn, Northwest Regional Educational Laboratory

Board discussion

**10:00 a.m. Break**

**10:15 a.m. State/Local Partnership Proposed Concepts  
Mass Insight and Education First Consulting**

Mr. Andy Calkins, Mass Insight  
Mr. Bill Guenther, Mass Insight  
Ms. Jennifer Vranek, Education First Consulting

Board discussion

**11:45 p.m. Public Comment**

**12:15 p.m. Lunch**

**1:00 p.m. Business Items**

- Approval of Framework for High School Graduation Requirements **(Action Item)**
- Approval of Strategic Teaching Report on Algebra I, Geometry, and Algebra II Standards **(Action Item)**
- Approval of Third Mathematics Credit Rule and High School and Beyond Plan **(Action Item)**
- Approval of ACT Writing Cut Scores for Alternative to Washington Assessment of Student Learning **(Action Item)**
- 180 Day Waivers **(Action Item)**
- Approval of State Board FY 09 Operating Budget **(Action Item)**
- Approval of 2009 Board Meeting Dates **(Action Item)**
- Approval of Contract Amendment for Science Standards **(Action Item)**
- Approval of Contract for Curricular Materials Review by SBE **(Action Item)**

- Private Schools 2008-09 Approval (***Action Item***)

**3:00 p.m. Reflections and Next Steps from the Board Meeting**

**3:15 p.m. Adjourn**

**PLEASE NOTE:** Times above are estimates only. The Board reserves the right to alter the order of the agenda. For information regarding testimony, handouts, other questions, or for people needing special accommodation, please contact Loy McColm at the Board office (360-725-6027). This meeting site is barrier free. Contact: during the meeting is: Susan Mills at 360-604-4009.



# WASHINGTON STATE BOARD OF EDUCATION

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## Evergreen School District Presentation Competency-based Credits

### SUMMARY OF POLICY ISSUE /STATE BOARD OF EDUCATION (SBE) STRATEGIC PLAN GOAL:

#### SUMMARY OF POLICY ISSUE

Washington, along with 33 other states, has established a competency-based credit policy. A Board rule<sup>1</sup> defines a high school credit as follows:

- (1) Grades nine through twelve or the equivalent of a four-year high school program, and grades seven and eight under the provisions of RCW [28A.230.090](#) (4) and (5):
  - (a) One hundred fifty hours of planned instructional activities approved by the district;  
or
  - (b) Satisfactory demonstration by a student of clearly identified competencies established pursuant to a process defined in written district policy. Districts are strongly advised to confirm with the higher education coordinating board that the award of competency-based high school credit meets the minimum college core admissions standards set by the higher education coordinating board for admission into a public, baccalaureate institution.

#### BACKGROUND

Competencies are generally perceived to be a cluster of knowledge, skills, and/or attitudes that can be measured against well-accepted standards. The concept of awarding credit for competencies is attractive because it can help students:

- 1) Demonstrate expertise they have already gained.
- 2) Free time in their schedule to pursue other interests.
- 3) Apply learning (depending upon the nature of the assessment used to demonstrate competency).

For many reasons, few Washington school districts have actively pursued the opportunity for competency-based credit. Competency-based credit:

- 1) Is resource-intensive.
- 2) Requires reliable and valid assessments aligned with standards.

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<sup>1</sup> 180-51-050

- 3) May be costly to districts (if students use competencies to accelerate their learning and finish more quickly, schools lose funding).
- 4) Is complex to define, communicate, and transcript.

The Evergreen School District is an exception. Evergreen established a graduation requirements policy that included “developing, by September 2006, the process and testing instruments to grant credit based upon competence testing, in lieu of enrollment, for the following core subject minimum requirements: English, mathematics, science and social studies.”

Evergreen School District current graduation credit requirements are as follows:

Subject	Credits
English	4
Math	2 (must complete Integrated Math 3 & 4)
Science	2 (must be lab sciences)
Social Studies	3
Occupational Education	1
Health and Fitness	2
Arts	1
Electives	7.5
<b>Total</b>	<b>22.5</b>

Following is a description of the process the district followed in order to create the “challenge assessments”—assessments that, if passed, would enable a student to earn credit for a course. Descriptions of the assessments are also included.

**EXPECTED ACTION**

None.

## CHALLENGE ASSESSMENTS

### Purpose

To develop 9<sup>th</sup> and 10<sup>th</sup> grade performance assessments which allow students to challenge a course for credit or to provide room for scheduling advanced classes. The assessments measure mastery of Priority Standards in 9<sup>th</sup> – 10<sup>th</sup> grade for English, math, science and social studies. The assessments measure what a student knows and is skilled at within the content area. Performance based tasks/assessment are a demonstration of how the student can apply what they learn within the content.

### Project

- The work began in Fall 2005 and was completed in Fall/Winter 2006.
- The Center of Performance Assessment (Doug Reeves), as one of the leading experts on assessment, was contracted to facilitate the work sessions.
- There were ten days (60 hrs.) of work-time focused on the process and products.
- The 24-member work group included teachers from 9<sup>th</sup> – 10<sup>th</sup> grade levels, representing the four core subject areas, curriculum Teachers On Special Assignment (TOSA), Staff Development Manager and three building administrators.
- The budget for the project was \$25,000, which provided for:
  - consultant contract
  - teacher release time and summer stipends
  - printing of materials
- The administration of the assessments requires proctoring by 2-5 teachers at a cost of \$39/hour/teacher for up to five days of test administration, depending on the number of students and length of the assessments.

### Process

- Priority standards were identified based on State EALRs/GLEs.
- Using the priority standards, performance based assessments have been designed for grades 9 & 10 in the core content areas.
- Drafts of the assessments were shared with core area departments at each high school.
- Based on feedback from teachers, revisions were made by the committee.
- Assessments were ready for implementation in August 2007.

### Challenging a Course

- The process requires a student to challenge the course prior to the starting date of school.
- To date, one student has challenged a math course and was advanced to a higher level course.
- A statement regarding the opportunity to challenge a course will be in the high school common course catalog.
- Depending on the course, it may take a student two to five days to complete the assessment.

# Ninth Grade Modern World History

## Evergreen Public Schools Social Studies Assessment

### Purpose

The Evergreen Public Schools common assessments require a demonstration of the knowledge and skills that students will need to attain the “Meets Standard” level of proficiency in social studies. These assessments will be implemented in ninth grade Modern World History to:

- Challenge the course
- Complete the course of study
- Implement common assessments among high schools

### Overview of Product

Included in the following pages are four performance tasks and sets of content-based questions for ninth grade Modern World History, designed to meet the priority social studies standards and the course expectations for ninth grade Modern World History.

### Overview of Assessments

#### Unit I: Global Expansion and Encounter

- **The Impact of the Age of Exploration:** Students develop and support a thesis and analyze artifacts and historical narratives related to the following question: *Was the overall impact of European exploration and colonization (1450-1770) of the Americas beneficial or harmful? Include economic, social, and cultural factors.*

#### Unit II Age of Revolution

- **Causes of the French Revolution :** Students create a two-part dialogue or set of journal entries comparing and contrasting conditions prior to and after the French Revolution. The dialogue or journal must be “in character” integrating historically accurate details and must discuss the impact of Enlightenment ideals on the Revolution.

#### Unit III Causes and Consequences of International Conflict:

- **Could WWII have been prevented?:** Students write a persuasive essay outlining the causes of WWII. The thesis must state the greatest factor that caused WWII and argue if WWII could have been prevented if that factor was dealt with.

#### Unit IV Challenges to Human Rights and Democracy

- **Ridding the World of Genocide:** Students apply research and analysis skills to develop a plan to present to the United Nations that would help ensure future genocides do not occur.

#### Objective Assessments

- In addition to the performance tasks above there are sets of multiple choice questions units I, II, and III.

# Tenth Grade United States History

## Evergreen Public Schools Social Studies Assessment

### Purpose

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The Evergreen Public Schools common assessments require a demonstration of the knowledge and skills that students will need to attain the “Meets Standard” level of proficiency in social studies. These assessments will be implemented in tenth grade United States History to:

- Challenge the course
- Complete the course of study
- Implement common assessments among high schools

### Overview of Product

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Included in the following pages are four performance tasks and sets of content-based questions for tenth grade United States History, designed to meet the priority social studies standards and the course expectations for ninth grade United States History.

### Overview of Assessments

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#### Performance Assessment 1: Civil Rights

- Students will write position paper that discusses different perspectives on a public policy issue and its connection to the constitution. This assessment will satisfy the state Social Studies Classroom-Based Assessment requirement.

#### Performance Assessment 2: The Decision to Drop the Bomb

- Students will use primary and secondary documents to answer the question, “Was the dropping of atomic weapons on Japan at the end of World War II justified use of force?”

#### Performance Assessment 3: Change versus the Status Quo: Comparing Decades

- Students will create a chart that illustrates how the issues, people, and events of one decade impacted the next.

#### Objective Assessments

- In addition to the performance tasks above students must also answer a set of multiple choice questions related to the content units of the course. This portion of the assessment will be split into two parts. Part one will focus on America at the turn of the century through World War II. Part two will focus on Post-war America with emphasis on the civil rights and the Cold War.

# English Grades Nine and Ten

## Evergreen Public Schools English Assessment

### Purpose

The Performance Based Assessments require a demonstration of the knowledge and skills students will need to attain at the “Meets Standard” level of proficiency in English. The assessments will be implemented in the 9<sup>th</sup> grade English and 10<sup>th</sup> grade English to:

- Challenge the course
- Complete the course of study
- Implement common assessments among high schools

### Overview of Product

Included in the following pages are # performance tasks for 9<sup>th</sup> and 10<sup>th</sup> grade, designed to meet the priority Grade Level Expectations, WASL standards and the course expectations for 9<sup>th</sup> English and 10<sup>th</sup> grade English.

### Overview of Assessments

9th Grade	10 <sup>th</sup> Grade
1. Nonfiction Speech	1. WASL Expository Writing
2. WASL Persuasive Prompt	2. WASL Reading
3. Literary Analysis	3. Reading Comprehension and Compare/Contrast Essay
4. 9 <sup>th</sup> Grade Open Question	4A. Research Skills and Persuasive Writing 4B. Research Skills and Persuasive Writing
5. Response to Literature-Poetry	5A. Who Killed Julius Caesar? 5B. Shakespeare Literary Response – Persuasive
	6. Evaluate the Use of Literary Devices to Enhance Comprehension

# Biology Assessment

## Evergreen Public Schools Science Assessment

### Purpose

The Performance Based Assessments require a demonstration of the knowledge and skills students will need to attain at the “Meets Standard” level of proficiency in Biology. The assessments will be implemented in the 10<sup>th</sup> grade Biology to:

- Challenge the course
- Complete the course of study
- Implement common assessments among high schools

Task No.	Unit of Study
1	<u>Critter Unit:</u> First Encounter with the Critter Homeostasis in Your Critter Energy and Matter for Your Critter A Reproductive Strategy for Your Critter Growth and Development in Your Critter Critters and Interdependence
2	Human Organ Systems
3	Tracing Matter and Energy
4	Cell Function and Gene Regulation
5	Continuity and Gene Action
6	Easter Island
7	Multiple Choice Assessment

# Integrated Algebra/Geometry 1

## Evergreen Public Schools Performance Assessments

<b>1.1.1</b>	<b>Performance Assessment ①</b> - Scientific Notation Unit 2
<b>1.1.6</b> <b>1.5.5</b>	<b>Performance Assessment ②</b> - Order of Operations <i>No Calculators</i> Unit 2
<b>1.3.4</b>	<b>Performance Assessment ③</b> - Central Tendency Unit 3
	<b>Performance Assessment ④</b> - Flip Book Unit 4
	<b>Performance Assessment ⑤</b> - Smokers in the USA Unit 4
	<b>Performance Assessment ⑥</b> - Transformations Unit 4
	<b>Performance Assessment ⑦</b> - Motion Detector Unit 4-6
	<b>Performance Assessment ⑧</b> - Changes in Area Investigation Unit 6 or 7
	<b>Performance Assessment ⑨</b> - The Vacation Unit 8
	<b>Performance Assessment ⑩</b> - Challenge Assessment End of Course

# Integrated Algebra/Geometry 2

## Evergreen Public Schools Performance Assessments

	<b>Performance Assessment ①</b> - Walter and Juanita's Water Trough Unit 2
	<b>Performance Assessment ②</b> - Solve Systems Unit 2
	<b>Performance Assessment ③</b> - Changes in Solids Unit 2
	<b>Performance Assessment ④</b> - Inverse Proportions Unit 3
	<b>Performance Assessment ⑤</b> - Common Assessment End of First Semester
	<b>Performance Assessment ⑥</b> - Ancient Ruins Unit 8
	<b>Performance Assessment ⑦</b> - Common Assessment End of Second Semester



# WASHINGTON STATE BOARD OF EDUCATION

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## MEANINGFUL HIGH SCHOOL DIPLOMA: PUBLIC OUTREACH, PROPOSED FRAMEWORK FOR HIGH SCHOOL GRADUATION REQUIREMENT OPTIONS: CORE 24, CULMINATING PROJECT, HIGH SCHOOL AND BEYOND PLAN

### SUMMARY OF POLICY ISSUE/STATE BOARD OF EDUCATION (SBE) STRATEGIC PLAN GOAL:

#### BACKGROUND

Materials will be available at the meeting

A handwritten signature in blue ink, likely belonging to a member of the Washington State Board of Education, is located in the lower right quadrant of the page.

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Chair- Mary Jean Ryan • Vice Chair- Warren T. Smith Sr. • Dr. Terry Bergeson, Superintendent of Public Instruction  
Dr. Bernal Baca • Amy Bragdon • Dr. Steve Dal Porto • Steve Floyd • Dr. Sheila Fox • Phyllis Bunker Frank • Austianna Quick  
Linda W. Lamb • Eric Liu • Dr. Kristina Mayer • John C. "Jack" Schuster • Jeff Vincent • Lorilyn Roller  
Edie Harding, Executive Director

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July 14, 2008

Washington State Board of Education  
P.O. Box 47206  
600 Washington Street SE, Room 253  
Olympia, WA 98504-7206

Dear Chair Ryan and Members of the SBE:

As an association of African-American entrepreneurs, Tabor 100 is committed to facilitating the development of economic power, educational excellence and social equity. That is why we wholeheartedly support your work to institute the CORE 24 graduation requirements and your dedication to the goal of college and work readiness for all students.

In 2005, only 31 percent of African-American students completed the courses needed to even be eligible to apply to Washington's public four-year colleges or universities. Our students have long suffered the absence of college-aligned graduation requirements and are often counseled out of the classes they would need to enter training beyond high school. This course-taking gap is a precursor to the college-going gap and an eventual gap in the ability of young adults to earn a family wage.

Many students who are able to pursue post-secondary education find their aspirations are further stunted by a lack of preparation. Most recently, 63 percent of African-American students were forced to take and pay for remedial, high school level coursework before beginning community college—right after they were awarded a high school diploma.

This is an unacceptable inequity that we believe must be addressed by state policy. The college and work ready requirements in CORE 24 provide access to rigorous courses for *all* students and represent the surest way to guarantee equity in our schools.

Some may say our system isn't ready or that more course requirements will cause more students to dropout. To this we say: To delay only compounds current injustice. Our system will never be ready unless we take the first step and make a commitment to prepare our students for the challenges that lay ahead. High expectations encourage high levels of learning and we continue to hear from dropouts that they would have stayed in school if their coursework had more challenging.

We encourage you to take action that will ensure all students are given the opportunities they deserve. Rigorous coursework can help to close the achievement gap.

Tabor 100 is available to assist you in any way possible. For questions or comments about our advocacy and communication efforts please contact us at 206-625-9655. Thank you for your consideration in this critical work.

Sincerely,

A handwritten signature in black ink that reads "Kevin C. Washington". The signature is fluid and cursive, with the first name "Kevin" being the most prominent.

Kevin C. Washington,  
Education Chair  
Tabor 100



# EASTMONT SCHOOL DISTRICT

June 10, 2008

State Board of Education

JUN 13 2008

Received

Edie Harding, Executive Director  
State Board of Education  
PO Box 47206  
600 Washington Street SE  
Olympia, WA 98504-7206

Dear Ms. Harding:

The Eastmont School Board of Directors approved the attached resolution regarding the proposed CORE 24 High School Graduation Proposal at their regular meeting on June 9, 2008. The Board of Directors respectfully requests that this resolution be added to the July 24 regular agenda as a discussion item.

If this request is granted, my Board has asked that I attend the meeting and be prepared to address the resolution with the State Board. Thank you for your consideration of this request.

Sincerely,

Garn Christensen, Ph.D.  
Superintendent

GC:mes

Attachment

Cc:

Washington State Board of Education Directors:  
Mary Jean Ryan, Chair  
Warren T. Smith Sr., Vice Chair  
Dr. Bernal Baca, Board Liaison  
Kristina L. Mayer Ed.D., Board Liaison  
Dr. Terry Bergeson, Superintendent

Amy Bragdon  
Steve Dal Porto Ed.D.  
Steven Floyd  
Dr. Sheila Fox  
Phyllis Bunker Frank  
Linda W. Lamb  
Eric Liu  
John C. Schuster  
Jeff Vincent  
Lorilyn Roller  
Austianna Quick



June 10, 2008

**Eastmont School District Board of Directors:**

Brad Hawkins, Chair  
Annette Eggers, Vice Chair  
Jan Cetto, Board Member  
Chris Gibbs, Board Member  
Cindy Wright, Board Member

Edie Harding, Executive Director  
Eastmont School District  
PO Box 47200  
500 Washington Street SE  
Olympia, WA 98514-7200

Dear Ms. Harding:

The Eastmont School Board of Directors approved the attached resolution regarding the proposed CORE 24 High School Graduation Program at their regular meeting on June 9, 2008. The Board of Directors respectfully requests that this resolution be added to the agenda for your meeting as a discussion item.

If the request is granted, my Board has asked that I attend the meeting and be prepared to address the resolution with the State Board. Thank you for your consideration of this request.

Sincerely,

Brad Hawkins, Chair  
Board of Directors

cc: Mr. [Name]  
Mr. [Name]

Washington State Board of Education  
1000 First Avenue, N.E.  
Olympia, WA 98501  
Phone: 360-339-3300  
Fax: 360-339-3301  
www.wa.gov

EASTMONT SCHOOL DISTRICT NO. 206  
RESOLUTION NO. 2008-7

A Resolution of the Board of Directors of the Eastmont School District No. 206, Douglas County, Washington, submits the following questions to the State Board of Education for consideration regarding High School Graduation Requirements:

- 1) WHEREAS, will the State Board of Education consider an alternative four years of no less than one semester of consecutively more advanced general and technical math per year, in lieu of completion of Algebra II, and
- 2) WHEREAS, will the State Board of Education recognize the absence of qualified teachers for math and science; and therefore allow three years for implementation, as well as hiring bonuses, in order to recruit college students into math and science teaching areas;
- 3) WHEREAS, will the Legislature provide a suspension of collective bargaining transfer provisions during this transition time that will enable easy reassignment of endorsed teachers;
- 4) WHEREAS, will the Legislature fund local districts for staff, instructional materials, and supplies to increase required graduation offerings from a 19 to 24 credit high school program;
- 5) WHEREAS, has the loss in exploratory electives been balanced against required credits in recognition most adults did not know at age 15-18 what their career path would become;
- 6) WHEREAS, will the culminating project continue to be a requirement, or will it be added to the core 24 requirements?

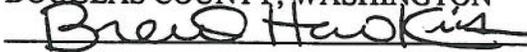
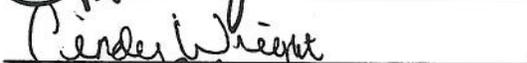
NOW THEREFORE, BE IT HEREBY RESOLVED that the Board of Directors of Eastmont School District No. 206, Douglas County, Washington respectfully request consideration and communication from the State Board of Education to the above questions.

ADOPTED by the Board of Directors of the Eastmont School District No. 206, Douglas County, Washington at a regular meeting thereof held this 9<sup>th</sup> day of June 2008.

ATTEST:

  
Secretary, Board of Directors

EASTMONT SCHOOL DISTRICT NO. 206  
DOUGLAS COUNTY, WASHINGTON


Board of Directors

6/3/2008

EASTMONT SCHOOL DISTRICT NO. 206  
RESOLUTION NO. 2008-7

A Resolution of the Board of Directors of the Eastmont School District No. 206, Douglas County, Washington, submits the following questions to the State Board of Education for consideration regarding High School Graduation Requirements:

- 1) WHEREAS, will the State Board of Education consider an alternative four years of no less than one semester of consecutively more advanced general and technical math per year, in lieu of completion of Algebra II, and
- 2) WHEREAS, will the State Board of Education recognize the absence of qualified teachers for math and science and therefore allow three years for implementation, as well as hiring bonuses, in order to recruit college students into math and science teaching areas;
- 3) WHEREAS, will the Legislature provide a suspension of collective bargaining contract provisions during this transition time that will enable easy reassignment of endorsed teachers;
- 4) WHEREAS, will the Legislature fund local districts for staff, instructional materials and supplies to increase required graduation offerings from a 19 to 24 credit high school program;
- 5) WHEREAS, has the loss in exploratory electives been balanced against required credits in recognition that students did not know at age 12-18 what their career path would become;
- 6) WHEREAS, will the culminating project continue to be a requirement, or will it be added to the core 24 requirements?

NOW THEREFORE, BE IT HEREBY RESOLVED that the Board of Directors of Eastmont School District No. 206, Douglas County, Washington respectfully request consideration and communication from the State Board of Education to the above questions.

ADOPTED by the Board of Directors of the Eastmont School District No. 206, Douglas County, Washington at a regular meeting thereof held this 7<sup>th</sup> day of June 2008.

EASTMONT SCHOOL DISTRICT NO. 206  
DOUGLAS COUNTY, WASHINGTON

*[Signature]*  
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*[Signature]*  
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*[Signature]*  
\_\_\_\_\_  
Board of Directors

ATTEST

*[Signature]*  
\_\_\_\_\_  
Secretary, Board of Directors



STATE OF WASHINGTON

Workforce Training and Education Coordinating Board

128 - 10th Avenue, S.W. • P.O. Box 43105 • Olympia, WA 98504-3105

Phone: 360-753-5662 • Fax: 360-586-5862 • Web: www.wtb.wa.gov • E-mail: wtecb@wtb.wa.gov

June 3, 2008

State Board of Education

Mary Jean Ryan, Chair  
Washington State Board of Education  
PO Box 47200  
Olympia, WA 98504-7200

JUN 05 2008

Received

Dear Mary Jean,

~~The Workforce Training and Education Coordinating Board~~ passed a motion at its May 15, 2008, Board meeting that commends and supports the "CORE 24" draft proposal by the meaningful High School Diploma Advisory Committee. Our Board believes you are headed in the right direction by providing rigorous options for students supported by planning, focus, and flexibility.

Enclosed is a copy of the motion passed by our Board. We strongly support the three credit career and technical education option and we include specific suggestions in our motion relating to the High School and Beyond Plan and the Culminating Project that will ensure that graduation requirements are student-centered and provide opportunities for cross-crediting.

~~We continue to stay engaged in your work on graduation requirements and we hope we can be of help in working on the details of any proposals or rules you eventually adopt.~~

Sincerely,

~~Papadakis~~  
Executive Director

- cc: Edie Harding, Executive Director, State Board of Education
- Kathe Taylor, Policy Director, State Board of Education
- David Harrison, Chair, Workforce Training and Education Coordinating Board

Enclosure



**WORKFORCE TRAINING AND EDUCATION COORDINATION BOARD MOTION**

**Adopted: May 14, 2008**

**WHEREAS**, Objective 3.1 of 2006 *High Skills, High Wages*, the 2006 State Strategic Plan for Workforce Development, calls for implementation of the Best Practice Comprehensive Guidance System, Navigation 101, across the K-12 system; and

**WHEREAS**, there is no clearly articulated definition of the High School and Beyond Plan or the Culminating Project in the current State Board of Education regulations; and

**WHEREAS**, Objective 4.1 of 2006 *High Skills, High Wages*, the 2006 State Strategic Plan for Workforce Development and the 2006 Washington Learns report both call for expanding opportunities for secondary students to take career and technical education preparation programs; and

**WHEREAS**, the Career and Technical Education Advisory Committee established by the Legislature is preparing guidelines for local school districts to establish equivalency credits and identifying career and technical education coursework that will likely meet the criteria; and

**WHEREAS**, the State Board of Education Meaningful High School Diploma Committee has prepared a draft proposal for high school graduation requirements that will prepare students for college and/or work; and

**WHEREAS**, K-12 Education should be student-centered—offering education that prepares students to fulfill their future education and career goals;

**NOW, THEREFORE BE IT RESOLVED**, that the Workforce Training and Education Coordinating Board commends the State Board of Education for its continued efforts to enhance Career and Technical Education. The Board supports the direction of the March 27, 2008, Draft Proposed Graduation Requirements in providing options for students that are based on preparing students for college and/or the world of work, including providing a three-credit career and technical education option;

**BE IT FURTHER RESOLVED**, that the Workforce Training and Education Coordinating Board suggests the following specific components be added to the “Core 24” requirements proposed by the Meaningful High School Diploma Committee to help prepare all students for careers and provide flexibility for a more personalized and relevant program of study in high school:

1. Align the criteria for the High School and Beyond Plan with the critical components in Navigation 101, the comprehensive career guidance curriculum, or substantially similar counseling models selected by school districts.
2. Change the occupational education credit to a career and technical education or equivalent credit for students planning to attend a baccalaureate institution, working with school districts without Career and Technical Education offerings to accomplish this transition..
3. Require the Culminating Project to be aligned with the High School and Beyond Plan and adopt a requirement that students must “apply” the skills learned in high school in their project.
4. Either allow students to receive “double credit” for equivalency courses or allow equivalency courses to satisfy more than one requirement for graduation.



# WASHINGTON STATE BOARD OF EDUCATION

OLD CAPITOL BUILDING • ROOM 253 • P.O. Box 47206 • 600 S.E. WASHINGTON • OLYMPIA, WA 98504-7206

## CUT SCORE ON ACT-WRITING STUDENTS CAN USE TO MEET STATE GRADUATION REQUIREMENT IN

### SUMMARY OF POLICY ISSUE/STATE BOARD OF EDUCATION (SBE) STRATEGIC PLAN GOAL:

#### BACKGROUND

Section 10(b)(i) of RCW 28A.655.061 established that “a student's score on the mathematics, reading or English, or writing portion of the scholastic assessment test (SAT) or the American college test (ACT) may be used as an objective alternative assessment under this section for demonstrating that a student has met or exceeded the state standards for the certificate of academic achievement.” That same section required the State Board of Education to “...identify the scores students must achieve on the relevant portion of the SAT or ACT to meet or exceed the state standard in the relevant content area on the Washington assessment of student learning.” This requirement was to have been met by December 1, 2007.

The Board had already established scores that could be used for this purpose on the SAT-Math and ACT-Math assessments at the November 2006 meeting. At the November 2007 meeting, the Board approved cut scores on the SAT-Reading, ACT-Reading, and SAT-Writing tests. A cut score for the ACT-Writing test could not be set at that time because a “Concordance Table” jointly published by the College Board and ACT aligning the SAT writing test to the ACT writing test was not available.

On June 30, 2008 the College Board and ACT released a concordance table matching SAT writing scores and ACT writing scores. The concordance table is based on the comparative performance of a large national sample of students who have taken both exams. Tables of this type are widely used by college admissions officers to judge the relative performance of students who may not all have taken the same test.

The Office of Superintendent of Public Instruction recommends the Board adopt a score of 15 on the ACT writing test as adequate to demonstrate a student has met the state's writing standard, assuming eligibility criteria required to use this alternative option have also been met. An ACT-Writing score of 15 aligns to an SAT-Writing score of 380, which is the cut score approved by the Board for SAT-Writing in November 2007.

## **EXPECTED ACTION**

Dr. Willhoft recommends that the Board adopt an ACT-Writing score of “15” as necessary to demonstrate a student has met the state standard in writing, once eligibility requirements for use of the SAT/ACT/AP option have been met.

## Report on High School Assessment Results

Progress on State-Required Performance Standards  
July 23, 2008

Joe Willhoft, OSPI  
Assessment and Student Information



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Division of Assessment and Student Information

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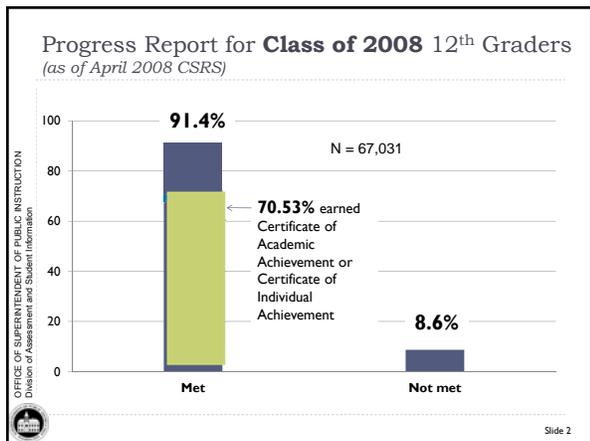
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### Progress Report for Class of 2008 12<sup>th</sup> Graders

	Reading		Writing		Mathematics	
	#	%	#	%	#	%
<b>Total Met Standard</b>	<b>42,466</b>	<b>93.10%</b>	<b>42,337</b>	<b>92.90%</b>	<b>40,543</b>	<b>72.35%</b>
Via Washington Assessment of Student Learning (WASL)	59,287	88.36%	59,569	88.78%	44,230	65.92%
Via Washington Alternative Assessments (Special Educ)	2,465	3.67%	2,175	3.24%	2,286	3.27%
WASL-Base	429	0.94%	429	0.94%	343	0.51%
WAAS Developmentally Appropriate WASL	1,485	2.21%	1,117	1.66%	1,516	2.26%
WAAS Portfolio	327	0.49%	362	0.54%	306	0.46%
Locally Determined Assessments	25	0.04%	47	0.10%	41	0.06%
Via Certificate of Academic Achievement Options	243	0.36%	141	0.21%	159	0.23%
Collection of Evidence	92	0.14%	54	0.08%	643	0.94%
PSATS/ACT/IAEP	139	0.21%	76	0.11%	588	0.88%
WASL/Grades Comparison	12	0.02%	11	0.02%	338	0.50%
Via Special Waiver	471	0.70%	452	0.67%	538	0.80%
Out-of-State Waivers	443	0.66%	422	0.63%	469	0.70%
Awareness Level Waivers (Special Education)	2	0.00%	2	0.00%	2	0.00%
Special Circumstance Appeals	26	0.04%	28	0.04%	67	0.10%
<b>Tested: Not Met Standard</b>	<b>1,487</b>	<b>2.51%</b>	<b>1,741</b>	<b>2.99%</b>	<b>15,659</b>	<b>23.34%</b>
<b>No score</b>	<b>2,946</b>	<b>4.39%</b>	<b>3,821</b>	<b>4.50%</b>	<b>2,897</b>	<b>4.32%</b>
<b>TOTAL</b>	<b>47,099</b>	<b>100.00%</b>	<b>47,099</b>	<b>100.00%</b>	<b>47,099</b>	<b>100.00%</b>

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Division of Assessment and Student Information

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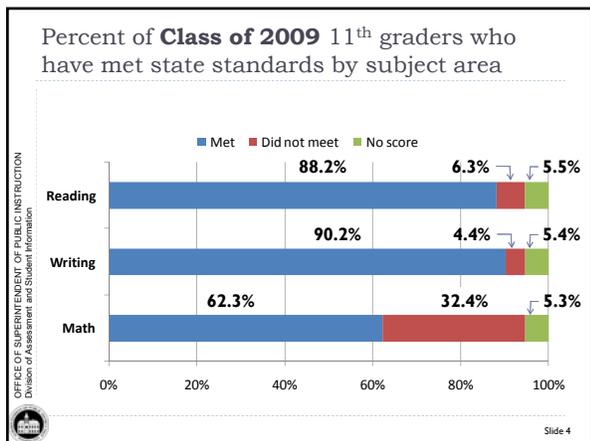
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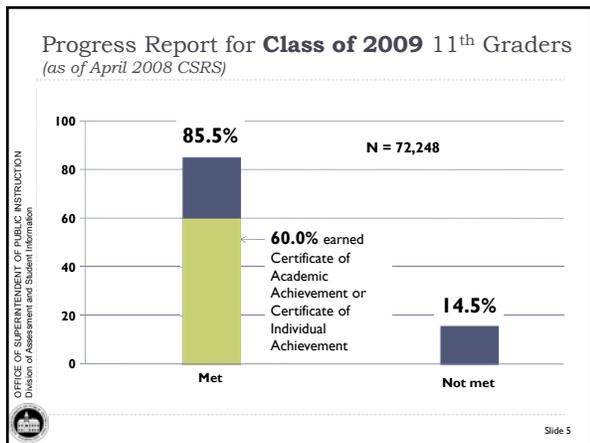
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Progress Report for **Class of 2009** 11<sup>th</sup> Graders  
Percent of students meeting standard in BOTH reading and writing by race/ethnicity

Group	Met	Not met	% met
Amer. Indian/Alaska Native	1,294	437	74.8%
Asian	5,327	665	88.9
Black/African American	2,547	805	76.0
Native Hawaiian/Pacific Islander	196	81	70.8
Hispanic/Latino	5,632	1,935	74.4
Caucasian/White	46,036	6,324	87.9
Multiracial	638	128	83.3
<b>All Students</b>	<b>61,798</b>	<b>10,450</b>	<b>85.5</b>

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Progress Report for **Class of 2009** 11<sup>th</sup> Graders  
 Percent of students meeting standard in BOTH reading and writing by special program group

Group	Met	Not met	% met
Low income	14,547	4,419	76.7%
English Language Learner	1,084	1,197	47.5
Special Education	3,639	2,379	60.5

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Percent of **Class of 2010** 10<sup>th</sup> graders who have met state standards by subject area

Subject	Met	Did not meet	No score
Reading	79.6%	12.1%	8.3%
Writing	84.0%	7.6%	8.4%
Math	49.7%	41.9%	8.4%

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 Division of Assessment and Student Information

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Progress Report for **Class of 2010** 10<sup>th</sup> Graders  
 (as of April 2008 CSRS)

N = 75,779

Category	Percentage
Met	75.0%
Not met	25.0%

46.6% earned Certificate of Academic Achievement or Certificate of Individual Achievement

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 Division of Assessment and Student Information

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Progress Report for **Class of 2010** 10<sup>th</sup> Graders  
 Percent of students meeting standard in BOTH reading and writing  
 by race/ethnicity

Group	Met	Not met	% met
Amer. Indian/Alaska Native	1,153	845	57.7%
Asian	4,919	1,050	82.4
Black/African American	2,260	1,400	61.8
Native Hawaiian/Pacific Islander	206	110	65.2
Hispanic/Latino	5,317	3,478	60.4
Caucasian/White	42,060	11,670	78.3
Multiracial	748	293	71.9
<b>All Students</b>	<b>56,829</b>	<b>18,950</b>	<b>75.0</b>

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Progress Report for **Class of 2010** 10<sup>th</sup> Graders  
 Percent of students meeting standard in BOTH reading and writing  
 by special program group

Group	Met	Not met	% met
Low income	13,904	8,906	61.0%
English Language Learner	861	2,001	30.1
Special Education	2,201	4,623	32.3

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 Division of Assessment and Student Information



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# WASHINGTON STATE BOARD OF EDUCATION

OLD CAPITOL BUILDING • ROOM 253 • P.O. Box 47206 • 600 S.E. WASHINGTON • OLYMPIA, WA 98504-7206

## High School Mathematics Standards and Introductory Language To K-12 Mathematics Standards

### SUMMARY OF POLICY ISSUE /STATE BOARD OF EDUCATION (SBE) STRATEGIC PLAN GOAL:

The Board is considering the final approval of Strategic Teaching's report on the finalization of the high school mathematics standards for the three credits of high school math. These standards include: Algebra I, Geometry, and Algebra II. The Board is also considering introductory language to the K-12 mathematics standards, which addresses among other things, the organization of the standards and the use of technology.

The revision of the mathematics standards is related to the Board's goal of improving achievement for all students.

### BACKGROUND

Under SB 6543, passed by the 2008 Legislature, the State Board of Education is required to hire a national consultant to:

1. Conduct an exemplar review ("Benchmarking Report") of the Office of Superintendent of Public Instruction's (OSPI) March 5, 2008 draft of the revised K-12 mathematics standards.
2. Recommend specific language and content changes needed to finalize K-12 standards.

The process for this work, as required by law, includes the following tasks and deadlines:

- By May 15, 2008, the SBE will receive a review of the above work from the national consultant, consult with the Math Panel, and hold a public hearing. The SBE may direct the consultant to make modifications to the standards at that time. After modifications, the SBE will forward the standards to OSPI for implementation.

- By July 1, 2008, OSPI will revise the standards, according to the recommendations outlined by the SBE report.
- By July 31, 2008, SBE will approve adoption of the revised standards by OSPI and/or develop a plan for ensuring recommendations are implemented and the standards are adopted by September 25, 2008.

In addition, later this year the SBE will provide feedback to OSPI on the proposed curricular menus, within two months of OSPI's completion. SBE staff anticipates that a consultant will be selected by the July Board meeting.

The K-8 mathematics standards report and OSPI standards were approved by the Board in April at special meetings. At the special Board meeting on April 28, the Board directed Strategic Teaching to develop some introductory language to the standards, including a piece on the use of technology.

On May 1, Strategic Teaching met with the Math Panel to receive feedback for its Algebra I and Geometry edited expectations. A report that incorporated feedback from the Math Panel and others was presented at the May 14 Board meeting. There were no public comments on the high school math standards in terms of the Strategic Teaching report at the May Board meeting. Based on Strategic Teaching's recommendation, it was decided that the Board should wait until July to approve the full report on high school standards, as Algebra II was not yet complete. This would still meet the July 31 deadline required by statute.

Strategic Teaching met with the Math Panel on June 12 to receive feedback on its Algebra II edited expectations as well as the introductory language for the K-12 standards, which included a piece on technology. The Board asked for a special work session to examine the Algebra II standards on July 14 to assist them with their contemplation of the third credit math rule, which will be under consideration for adoption at the July Board meeting.

A final report, with all the high school standards, will be presented at the July 23 Board meeting. The Board will listen to public comment, make any necessary modifications, and take action on the Strategic Teaching report on July 24. If the report is approved, OSPI will draft the new Algebra I, Geometry, and Algebra II Standards, which the Board will review at a special meeting teleconference on July 30.

OSPI will use the mathematics standards adopted to create standards for an integrated mathematics series as a number of school districts use an integrated sequence for high school mathematics, which combine Algebra and Geometry.

### **POLICY CONSIDERATION**

These high school mathematics standards will serve as the basis for the three credits of mathematics required by the Board for high school graduation as well as the assessment of students' knowledge and skills in Algebra I and Geometry through end of course assessments, to replace the current Washington Assessment of Student Learning by 2013.

### **EXPECTED ACTION**

The Board may approve the Strategic Teaching report, the high school mathematics standards, and the introductory language to the K-12 mathematics standards with any necessary modifications.

*Final Draft of Revised  
High School Standards*

Washington State Board of Education

*July 14, 2008*

**Strategic  
Teaching**  
Better learning by design  
1573 Millersville Road  
Millersville, MD 21108

## Overview

The Washington State K–12 Mathematics Standards outline the mathematics learning expectations for all students in Washington. These standards describe the mathematics content, procedures, applications, and processes that students are expected to learn. The topics and mathematical strands represented across grades K–12 constitute a mathematically complete program that includes the study of numbers, operations, geometry, measurement, algebra, data analysis, and important mathematical processes.

## Organization of the standards

The Washington State K–12 Mathematics Standards are organized by grade level for grades K–8 and by course for grades 9–12, with each grade/course consisting of three elements: *Core Content*, *Additional Key Content*, and *Core Processes*. Each of these elements contains *Performance Expectations* and *Explanatory Comments and Examples*.

The **Core Content** areas describe the major mathematical focuses of each grade level or course. A limited number of priorities for each grade level grades K–8 and for each high school course are identified, so teachers know which topics deserve the most time and emphasis. Each priority area includes a descriptive paragraph that highlights the mathematics addressed and its role in a student’s overall mathematics learning.

**Additional Key Content** contains important expectations that do not warrant the same amount of instructional time as the Core Content areas. These are expectations that might extend a previously learned skill, plant a seed for future development, or address a focused topic, such as scientific notation. Although they need less classroom time, these expectations are important, expected to be taught, and may be assessed as part of Washington State’s assessment system. The content in this section allows students to build a coherent knowledge of mathematics from year to year.

**Core Processes** include expectations that address reasoning, problem solving, and communication. While these processes are incorporated throughout other content expectations, they are presented in this section to clearly describe the breadth and scope of what is expected in each grade or course. In Core Processes, two rich problems that cut across Core or Key Content areas are included as examples for each grade or course. These problems illustrate the types and breadth of problems that could be used in the classroom.

**Performance Expectations**, in keeping with the accepted definition of standards, describe what students should know and be able to do at each grade level. These statements are the core of the document. They are designed to provide clear guidance to teachers about the mathematics that is to be taught and learned.

**Explanatory Comments and Examples** accompany most of the expectations. These are not technically performance expectations, but they expand on the meaning of the expectations. For example, the explanatory text might clarify the parameters regarding the type or size of numbers or provide more information about student expectations regarding mathematical understanding. The sample problems include those that are typical of the problems students should do, those that illustrate various types of problems associated with a particular performance expectation, and those that illustrate the expected limits of difficulty for problems related to a performance expectation.

The examples and comments included in the standards are illustrative only. Teachers are not expected to teach these particular examples or to limit what they teach to these examples. Teachers and quality instructional materials will incorporate many different types of examples that support the teaching of the content described in any expectation.

In some instances, comments related to pedagogy are included in the standards. Teachers are not expected to use these particular teaching methods or to limit the methods they use to the methods included in the document. These too, are illustrative, showing one way an expectation might be taught.

Although technically the performance expectations set the requirements for Washington students, people will consider the entire document as the Washington mathematics standards. Thus, the term *standards*, as used here, then, refers to the complete set of Performance Expectations, Explanatory Comments and Examples, Core Content, Additional Key Content, and Core Processes. Making sense of the standards from any grade level or course calls for understanding the interplay of Core Content, Additional Key Content, and Core Processes for that grade or course.

### What standards are not

Performance expectations do not describe how the mathematics will be taught. Decisions about instructional methods and materials are left to professional teachers who are knowledgeable about the mathematics being taught and about the needs of their students.

The standards are not comprehensive. They do not describe everything that could be taught in a classroom. Teachers may choose to go beyond what is included in this document to provide related or supporting content. They should teach beyond the standards to those students ready for additional challenges. Standards related to number skills, in particular, should be viewed as a floor—minimum expectations—and not a ceiling. A student who can order and compare numbers to 120 should be given every opportunity to apply these concepts to larger numbers.

The standards are not test specifications. Excessive detail, such as the size of numbers that can be tested and the conditions for assessment, cloud the understandability and usability of a

standards document, generally, and a performance expectation, specifically. For example, it is sufficient to say “Identify, describe, and classify triangles by angle measure and number of congruent sides,” without specifying that acute, right, and obtuse are triangles classified by their angle size and that scalene, isosceles, and equilateral are the types of triangles classified by their side length. Sometimes this type of information is included in the comments section, but generally this level of detail is left to other documents.

### What about strands?

Many states’ standards are organized around mathematical content strands—generally some combination of numbers, operations, geometry, measurement, algebra, and data/statistics. However, the *Washington State K–12 Mathematics Standards* are organized according to the priorities described as Core Content, rather than being organized in strands. Nevertheless, it is still useful to know what content strands are addressed in particular Core Content and Additional Key Content areas. Thus, mathematics content strands are identified in parentheses at the beginning of each Core Content or Additional Key Content area. Five content strands have been identified for this purpose: Numbers, Operations, Geometry/Measurement, Algebra, and Data/Statistics/Probability. For each of these strands, a separate K–12 strand document allows teachers and other readers to track the development of knowledge and skills across grades and courses. An additional strand document on the Core Processes tracks the development of reasoning, problem solving, and communication across grades K–12.

### A well-balanced mathematics program for all students

An effective mathematics program balances three important components of mathematics—conceptual understanding (making sense of mathematics), procedural proficiency (skills, facts, and procedures), and problem solving and mathematical processes (using mathematics to reason and think to apply what they know). These standards make clear the importance of all three of these components, purposefully interwoven to support students’ development as increasingly sophisticated mathematical thinkers. The standards are written to support the development of students so that they know and understand mathematics.

#### *Conceptual understanding (making sense of mathematics)*

Students who understand a concept are able to identify examples as well as non-examples, describe the concept (for example, with words, symbols, drawings, tables, or models), provide a definition of the concept, and use the concept in different ways. Conceptual understanding is woven throughout these standards. Expectations with verbs like *demonstrate*, *describe*, *represent*, *connect*, and *justify*, for example, ask students to show their understanding. Furthermore, expectations addressing both procedures and applications often ask students to connect their conceptual understanding to the procedures being learned or problems being solved.

### *Procedural proficiency (skills, facts, and procedures)*

Learning basic facts is important for developing mathematical understanding. In these standards, clear expectations address students' knowledge of basic facts. The use of the term *basic facts* typically encompasses addition and multiplication facts up to and including  $10 + 10$  and  $10 \times 10$  and their related subtraction and division facts. In these standards, students are expected to "quickly recall" basic facts. "Quickly recall" means that the student has ready and effective access to facts without having to go through a development process or strategy, such as counting up or drawing a picture, every time he or she needs to know a fact. Simply put, students need to know their basic facts.

Building on a sound conceptual understanding of addition, subtraction, multiplication, and division, Washington's standards include a specific discussion of students' need to understand and use the standard algorithms generally seen in the United States to add, subtract, multiply, and divide whole numbers. There are other possible algorithms students might also use to perform these operations and some teachers may find value in students learning multiple algorithms to enhance understanding.

Algorithms are step-by-step mathematical procedures that, if followed correctly, always produce a correct solution or answer. Generalized procedures are used throughout mathematics, such as in drawing geometric constructions or going through the steps involved in solving an algebraic equation. Students should come to understand that mathematical procedures are a useful and important part of mathematics.

The term *fluency* is used in these standards to describe the expected level and depth of a student's knowledge of a computational procedure. For the purposes of these standards, a student is considered fluent when the procedure can be performed immediately and accurately. Also, when fluent, the student knows when it is appropriate to use a particular procedure in a problem or situation. A student who is fluent in a procedure has a tool that can be applied reflexively and doesn't distract from the task of solving the problem at hand. The procedure is stored in long-term memory, leaving working memory available to focus on the problem.

### *Problem solving and mathematical processes (reasoning and thinking to apply mathematical content)*

Mathematical processes, including reasoning, problem solving, and communication, are essential in a well-balanced mathematics program. Students must be able to reason, solve problems, and communicate their understanding in effective ways. While it is impossible to completely separate processes and content, the standards' explicit description of processes at each grade level calls attention to their importance within a well-balanced mathematics program. Some common language is used to describe the Core Processes across the grades and within grade bands (K–2, 3–5, 6–8, and 9–12). The problems students will address, as well as the language and symbolism they will use to communicate their mathematical understanding

become more sophisticated from grade to grade. These shifts across the grades reflect the increasing complexity of content and the increasing rigor as students deal with more challenging problems, much in the same way that reading skills develop from grade to grade with increasingly complex reading material.

## Technology

The role of technology in learning mathematics is a complex issue, because of the ever-changing capabilities of technological tools, differing beliefs in the contributions of technology to a student's education, and equitable student access to tools. However, one principle remains constant: The focus of mathematics instruction should always be on the mathematics to be learned and on helping students learn that mathematics.

*Technology **should be used** when it supports the mathematics to be learned, and technology **should not be used** when it might interfere with learning.*

Calculators and other technological tools, such as computer algebra systems, dynamic geometry software, applets, spreadsheets, and interactive presentation devices are an important part of today's classroom. But, the use of technology cannot replace conceptual understanding, computational fluency, or problem-solving skills.

Washington's standards make clear that some performance expectations are to be done without using technology. Elementary students are expected to know facts and basic computational procedures without using a calculator. At the secondary level, students should compute with polynomials, solve equations, sketch simple graphs, and perform some constructions without the use of technology. Students should continue to use previously learned facts and skills in subsequent grade levels to maintain their fluency without the assistance of a calculator.

At the elementary level, calculators are less useful than they will be in later grades. The core of elementary school, number sense and computational fluency, doesn't require a calculator. However, this is not to say that students couldn't use calculators to investigate mathematical situations and to solve problems involving complicated numbers, lots of numbers, or data sets.

As middle school students deal with increasingly complex statistical data and represent proportional relationships with graphs and tables, a calculator or technological tool with these functions can be useful for representing relationships in multiple ways. At the high school level, graphing calculators become valuable tools as all students tackle the challenges of algebra and geometry to prepare for a range of postsecondary options in a technological world. Graphing calculators and spreadsheets allow students to explore and solve problems with classes of functions in ways that were previously impossible.

While the majority of performance expectations describe skills and knowledge that a student could demonstrate without technology, learning when it is helpful to use these tools and when it is cumbersome is part of becoming mathematically literate. When students become dependent upon technology to solve basic math problems, the focus of mathematics instruction to help students learn mathematics has failed.

### Connecting to the Washington Essential Academic Learning Requirements (EALRs) and Grade Level Expectations (GLEs)

The new Washington State K–12 Mathematics Standards continue Washington’s longstanding commitment to teaching mathematics content and mathematical thinking. The new standards replace the former Essential Academic Learning Requirements (EALRs) and Grade Level Expectations (GLEs). The former mathematics EALRs, listed below, represent threads in the mathematical content, reasoning, problem solving, and communication that are reflected in these new standards.

- EALR 1:** The student understands and applies the concepts and procedures of mathematics.
- EALR 2:** The student uses mathematics to define and solve problems.
- EALR 3:** The student uses mathematical reasoning.
- EALR 4:** The student communicates knowledge and understanding in both everyday and mathematical language.
- EALR 5:** The student understands how mathematical ideas connect within mathematics, to other subjects

### System-wide Standards Implementation Activities

These mathematics standards represent an important step in ramping up mathematics teaching and learning in the state. The standards provide a critical foundation, but are only the first step. Their success will depend on the implementation efforts that match many of the activities outlined in Washington’s Joint Mathematics Action Plan. This includes attention to:

- Aligning the Washington Assessment for Student Learning to these standards;
- Identifying mathematics curriculum and instructional support materials;
- Providing systematic professional development so that instruction aligns with the standards;
- Developing online availability of the standards in various form and formats, with additional example problems, classroom activities, and possible lessons embedded.

Efforts like these take time. There is the reality of how much work can be realistically done in a set amount of time. And there is the tension of balancing the need to raise the bar with the reality of how much change is possible, how quickly, in real schools with real teachers and real students.

Change is hard. These standards expect more of students and consequently more of their teachers. Still, if Washington's students are to be prepared to be competitive and to reach their highest potential, it is necessary.

Draft

## Algebra I

### A1.1. Core Content: Solving Problems

(Algebra)

Students are introduced to several types of functions in Algebra I, including exponential and those defined piecewise, spending considerable time with linear and quadratic functions. Each type of function allows students to solve a new kind of problem or a familiar problem in a more efficient way. Students learn that specific functions model the situations described in word problems and thus learn that functions are used to solve problems in a broader sense. The ability to write an equation that represents a problem is an important mathematical skill in itself. Each new function provides students the tool to solve yet another class of problems. Many problems that initially appear to be very different from each other can actually be represented by identical equations. This is the beauty and unifying principle of algebra—that the same algebraic techniques can be applied to a wide variety of different situations.

This first section highlights the types of problems students will be able to solve after they master the concepts and skills in Algebra I. Each performance expectation highlights how a specific class of functions and equations models realistic situations. Each performance expectation also corresponds to a section later in Algebra I that clarifies the skills associated with solving the equation.

#### Performance Expectation

#### Explanatory Comments and Examples

A1.1.A Select and justify functions and equations to model and solve problems.

Students can analyze the rate of change of a function represented by a table or graph to determine if the function is linear and analyze common ratios to determine if the function is exponential.

After selecting a function to model a situation, students describe appropriate domain restrictions. They use the function to solve the problem and interpret the solution in the context of the original situation.

Examples:

- A cup is 6 cm tall, including a 1.1 cm lip. Find a formula that gives the height of a stack of cups in terms of the number of cups in the stack. Find a formula for the number of cups in a stack of a given height.
- For the month of July, Michelle will be dog-sitting for her very wealthy, but eccentric, neighbor, Mrs. Buffett. Mrs. Buffett offers Michelle two different salary plans:
  - Plan 1: \$100 per day for the 31 days of the month.
  - Plan 2: \$1 for July 1, \$2 for July 2, \$4 for July 3, and so on, with the daily rate doubling each day.
- a. Write functions that model the amount of money Michelle will earn each day on Plan 1 and Plan 2. Justify the functions you wrote.
- b. State an appropriate domain for each of the models based on the context.

- c. Which plan should Michelle choose to maximize her earnings? Justify your recommendation mathematically.
- d. Extension: Write an algebraic function for the cumulative pay for each plan based on the number of days worked.

A1.1.B Solve problems that can be represented by linear functions, equations, and inequalities.

It is mathematically important to represent a word problem as an equation. Students must analyze the situation and find a way to represent it mathematically. After solving the equation, students think about the solution in terms of the original problem.

Examples:

- The assistant pizza maker makes 6 pizzas an hour. The master pizza maker makes 10 pizzas an hour but starts baking two hours later than his assistant. Together, they must make 92 pizzas. How many hours from when the assistant starts baking will it take?

What is a general equation, in function form, that could be used to determine the number of pizzas that can be made in two or more hours?

- A swimming pool holds 375,000 liters of water. Two large hoses are used to fill the pool. The first hose fills at the rate of 1,500 liters per hour and the second hose fills at the rate of 2,000 liters per hour. How many hours does it take to fill the pool completely?

A1.1.C Solve problems that can be represented by a system of two linear equations or inequalities.

Examples:

- An airplane flies from Baltimore to Seattle (assume a distance of 2,400 miles) in 7 hours, but the return flight takes only  $4\frac{1}{2}$  hours. The air speed of the plane is the same in both directions. How many miles per hour does the plane fly with respect to the wind? What is the wind speed in miles per hour?
- A coffee shop employee has one cup of 85% milk (the rest is chocolate) and another cup of 60% milk (the rest is chocolate). He wants to make one cup of 70% milk (the rest chocolate). How much of the 85% milk and 60% milk should he mix together to make the 70% milk?
- Two plumbing companies charge different rates for their service. Clyde's Plumbing Company charges a \$75-per-visit fee that includes one hour of labor plus \$45 dollars per hour after the first hour. We-Unclog-It Plumbers charge a \$100-per-visit fee that includes one hour of labor plus \$40 per hour after the first hour. For how many hours of plumbing work would Clyde's be less expensive

than We-Unclog-It?

Note: Although this context is discrete, students can model it with continuous linear functions.

A1.1.D Solve problems that can be represented by quadratic functions and equations.

Examples:

- Find the solutions to the simultaneous equations  $y = x + 2$  and  $y = x^2$ .
- If you throw a ball straight up (with initial height of 4 feet) at 10 feet per second, how long will it take to fall back to the starting point? The function  $h(t) = -16t^2 + v_0t + h_0$  describes the height,  $h$  in feet, of an object after  $t$  seconds, with initial velocity  $v_0$  and initial height  $h_0$ .
- Joe owns a small plot of land 20 feet by 30 feet. He wants to double the area by increasing both the length and the width, keeping the dimensions in the same proportion as the original. What will be the new length and width?
- What two consecutive numbers, when multiplied together, give the first number plus 16? Write the equation that represents the situation.

A1.1.E Solve problems that that can be represented by exponential functions and equations.

Students approximate solutions with graphs or tables, check solutions numerically, and when possible, solve problems exactly.

Examples:

- E. coli bacteria reproduce by a simple process called binary fission—each cell increases in size and divides into two cells. In the laboratory, E. coli bacteria divide approximately every 15 minutes. A new E. coli culture is started with 1 cell.
  - a. Find a function that models the E. coli population size at the end of each 15-minute interval. Justify the function you found.
  - b. State an appropriate domain for the model based on the context.
  - c. After what 15-minute interval will you have at least 500 bacteria?
- Estimate the solution to  $2^x = 16,384$

## Algebra I

### A1.2. Core Content: Numbers, expressions, and operations (Numbers, Operations, Algebra)

Students see the number system extended to the real numbers represented by the number line. They work with integer exponents, scientific notation, and radicals, and use variables and expressions to solve problems from both purely mathematical and applied contexts. They build on their understanding of and ability to compute with arithmetic operations and properties and expand this understanding to include the symbolic language of algebra. They will demonstrate this ability to write and manipulate a wide variety of algebraic expressions throughout high school mathematics as they apply algebraic procedures to solve problems.

#### Performance Expectation

A1.2.A Know the relationship between real numbers and the number line; compare and order real numbers with and without the number line.

#### Explanatory Comments and Examples

Although a formal definition of real numbers is beyond the scope of Algebra I, students learn that every point on the number line represents a real number, either rational or irrational, and that every real number has its unique point on the number line. They locate, compare, and order real numbers on the number line.

Real numbers include those written in scientific notation or expressed as fractions, decimals, exponentials, or roots.

Examples:

- Without using a calculator, order the following on the number line:

$$\sqrt{82}, 3\pi, 8.9, 9, \frac{37}{4}, 9.3 \times 10^0$$

- A star's color gives an indication of its temperature and age. The chart shows four types of stars and the lowest temperature of each type.

Type	Lowest Temperature (in °F)	Color
A	$1.35 \times 10^4$	Blue-White
B	$2.08 \times 10^4$	Blue
G	$9.0 \times 10^3$	Yellow
P	$4.5 \times 10^4$	Blue

List the temperatures in order from lowest to highest.

## Performance Expectation

## Explanatory Comments and Examples

A1.2.B Recognize the multiple uses of variables, determine all possible values of variables that satisfy prescribed conditions, and evaluate algebraic expressions that involve variables.

Students learn to use letters as variables and in other ways that increase in sophistication throughout high school, for example:

- To represent fixed and temporarily unknown values in equations, such as  $3x + 2 = 5$ ;
- To express identities, such as  $x + x = 2x$  for all  $x$ ;
- As attributes in formulas, such as  $A = lw$ ;
- As constants such as  $a$ ,  $b$ , and  $c$  in the equation  $y = ax^2 + bx + c$ ;
- As parameters in equations, such as the  $m$  and  $b$  for the family of functions defined by  $y = mx + b$ ;
- To represent varying quantities, such as  $x$  in  $f(x) = 5x$ ;
- To represent functions, such as  $f$  in  $f(x) = 5x$ ; and
- To represent specific numbers, such as  $\pi$ .

Expressions include those involving polynomials, radicals, absolute values, and integer exponents.

Examples:

- For what values of  $a$  and  $n$ , where  $n$  is an integer greater than 0, is  $a^n$  always negative?
- For what values of  $a$  is  $\frac{1}{a}$  an integer?
- For what values of  $a$  is  $\sqrt{5} \sqrt{a}$  defined?
- For what values of  $a$  is  $-a$  always positive?

A1.2.C Interpret and use integer exponents and square and cube roots, and apply the laws and properties of exponents to simplify and evaluate exponential expressions.

Examples:

- $2^{-3} = \frac{1}{2^3}$
- $\frac{2^{-2}3^25}{2^23^{-3}5^2} = \frac{3^5}{2^45}$
- $\frac{a^{-2}b^2c}{a^2b^{-3}c^2} = \frac{b^5}{a^4c}$
- $\sqrt{8} = \sqrt{2 \cdot 2 \cdot 2} = 2\sqrt{2}$
- $\sqrt[3]{a \cdot b} = \sqrt[3]{a} \cdot \sqrt[3]{b}$

## Performance Expectation

## Explanatory Comments and Examples

A1.2.D Determine whether approximations or exact values of real numbers are appropriate, depending on the context, and justify the selection.

Decimal approximations of numbers are sometimes used in applications such as carpentry or engineering, while at other times, these applications may require exact values. Students should understand the difference and know that the appropriate approximation depends upon the necessary degree of precision needed in given situations.

For example, 1.414 is an approximation and not an exact solution to the equation  $x^2 - 2 = 0$ , but  $\sqrt{2}$  is an exact solution to this equation.

Example:

- Using a common engineering formula, an engineering student represented the maximum safe load of a bridge to be  $1000(99 - 70\sqrt{2})$  tons. He used 1.41 as the approximation for  $\sqrt{2}$  in his calculation. When the bridge was built and tested in a computer simulation to verify its maximum weight-bearing load, it collapsed! The student had estimated the bridge would hold ten times the weight that was applied to it when it collapsed.
  - Calculate weight that the student thought the bridge could bear using 1.41 as the estimate for  $\sqrt{2}$ .
  - Calculate other weight values using estimates of  $\sqrt{2}$  that have more decimal places. What might be a reasonable degree of precision required to know how much weight the bridge can handle safely? Justify your answer.

A1.2.E Use algebraic properties to factor and combine like terms in polynomials.

Algebraic properties include the commutative, associative, and distributive properties.

Factoring includes:

- Factoring a monomial from a polynomial, such as  $4x^2 + 6x = 2x(2x + 3)$ ;
- Factoring the difference of two squares, such as  $36x^2 - 25y^2 = (6x + 5y)(6x - 5y)$  and  $x^4 - y^4 = (x + y)(x - y)(x^2 + y^2)$ ;
- Factoring perfect square trinomials, such as  $x^2 + 6xy + 9y^2 = (x + 3y)^2$ ;
- Factoring quadratic trinomials such as

$$x^2 + 5x + 4 = (x + 4)(x + 1); \text{ and}$$

### Performance Expectation

### Explanatory Comments and Examples

A1.2.F Add, subtract, multiply, and divide polynomials.

- Factoring trinomials that can be expressed as the product of a constant and a trinomial, such as  $0.5x^2 - 2.5x - 7 = 0.5(x + 2)(x - 7)$ .

Write algebraic expressions in equivalent forms using algebraic properties to perform the four arithmetic operations with polynomials.

Students should recognize that expressions are essentially sums, products, differences, or quotients. For example, the sum  $2x^2 + 4x$  can be written as a product,  $2x(x + 2)$ .

Examples:

- $(3x^2 - 4x + 5) + (-x^2 + x - 4) + (2x^2 + 2x + 1)$
- $(2x^2 - 4) - (x^2 + 3x - 3)$
- $\frac{2x^2}{9} \cdot \frac{6}{2x^4}$
- $\frac{x^2 - 2x - 3}{x + 1}$

## Algebra I

### A1.3. Core Content: Characteristics and behaviors of functions

(Algebra)

Students formalize and deepen their understanding of functions, the defining characteristics and uses of functions, and the mathematical language used to describe functions. They learn that functions are often specified by an equation of the form  $y = f(x)$ , where any allowable  $x$ -value yields a unique  $y$ -value. While Algebra I has a particular focus on linear and quadratic equations and systems of equations, students also learn about exponential functions and those that can be defined piecewise, particularly step functions and functions that contain the absolute value of an expression. In all cases students learn about the representations and basic transformations of these functions and the practical and mathematical limitations that must be considered when working with functions and using functions to model situations.

#### Performance Expectation

A1.3.A Determine whether a relationship is a function and identify the domain, range, roots, and independent and dependent variables.

#### Explanatory Comments and Examples

Functions studied in Algebra I include linear, quadratic, exponential, and those defined piecewise (including step functions and those that contain the absolute value of an expression).

Given a problem situation, students should describe further restrictions on the domain of a function that are appropriate for the problem context.

Examples:

- Which of the following are functions? Explain why or why not.
  - The age in years of each student in your math class and each student's shoe size.
  - The number of degrees a person rotates a spigot and the volume of water that comes out of the spigot.
- A function  $f(n) = 60n$  is used to model the distance in miles traveled by a car traveling 60 miles per hour in  $n$  hours. Identify the domain and range of this function. What restrictions on the domain of this function should be considered for the model to correctly reflect the situation?
- What is the domain of  $f(x) = \sqrt{5 - x}$ ?
- Which of the following equations, inequalities, or graphs determine  $y$  as a function of  $x$ ?
  - $y = 2$
  - $x = 3$
  - $y = |x|$
  - $y = x + 3, x \leq 1; x - 2, x > 1$

$$— x^2 + y^2 = 1$$

A1.3.B Represent a function with a symbolic expression, as a graph, in a table, and using words, and make connections among these representations.

This expectation applies each time a new class (family) of functions is encountered. In Algebra I, students should be introduced to a variety of additional functions that include expressions such as  $x^3$ ,  $\sqrt{x}$ ,  $\frac{1}{x}$ , and absolute values. They will study these functions in depth in subsequent courses.

Students should know that  $f(x) = \frac{a}{x}$  represents an inverse variation. Students begin to describe the graph of a function from its symbolic expression, and use key characteristics of the graph of a function to infer properties of the related symbolic expression.

Translating among these various representations of functions is an important way to demonstrate conceptual understanding of functions.

Students learn that each representation has particular advantages and limitations. For example, a graph shows the shape of a function, but not exact values. They also learn that a table of values may not uniquely determine a single function without some specification of the nature of that function (e.g., it is quadratic).

A1.3.C Evaluate  $f(x)$  at  $a$  (i.e.,  $f(a)$ ) and solve for  $x$  in the equation  $f(x) = b$ .

Functions may be described and evaluated with symbolic expressions, tables, graphs, or verbal descriptions.

Students should distinguish between solving for  $f(x)$  and evaluating a function at  $x$ .

Example:

- Roses-R-Red sells its roses for \$0.75 per stem and charges a \$20 delivery fee per order.
  - What is the cost of having 10 roses delivered?
  - How many roses can you have delivered for \$65?

## Algebra I

### A1.4. Core Content: Linear functions, equations, and inequalities

(Algebra)

Students understand that linear functions can be used to model situations involving a constant rate of change. They build on the work done in middle school to solve sets of linear equations and inequalities in two variables, learning to interpret the intersection of the lines as the solution. While the focus is on solving equations, students also learn graphical and numerical methods for approximating solutions to equations. They use linear functions to analyze relationships, represent and model problems, and answer questions. These algebraic skills are applied in other Core Content areas across high school courses.

#### Performance Expectation

#### Explanatory Comments and Examples

A1.4.A Write and solve linear equations and inequalities in one variable.

This expectation includes the use of absolute values in the equations and inequalities.

Examples:

- Write an absolute value equation or inequality for
  - all the numbers 2 units from 7, and
  - all the numbers that are more than  $b$  units from  $a$ .
- Solve  $|x - 6| \leq 4$  and locate the solution on the number line.
- Write an equation or inequality that has
  - No real solutions
  - Infinite numbers of real solutions
  - Exactly one real solution
- Solve for  $x$  in  $2(x - 3) + 4x = 15 + 2x$ .
- Solve  $8.5 < 3x + 2 \leq 9.7$  and locate the solution on the number line.

A1.4.B Write and graph an equation for a line given the slope and the  $y$ -intercept, the slope and a point on the line, or two points on the line, and translate between forms of linear equations.

Linear equations may be written in slope-intercept, point-slope, and standard form.

Examples:

- Find an equation for a line with  $y$ -intercept equal to 2 and slope equal to 3.
- Find an equation for a line with a slope of 2 that goes through the point (1, 1).
- Find an equation for a line that goes through the points (-3, 5) and (6, -2).

## Performance Expectation

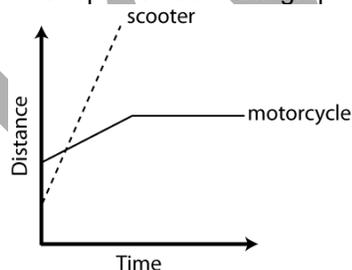
## Explanatory Comments and Examples

A1.4.C Identify and interpret the slope and intercepts of a linear function, including equations for parallel and perpendicular lines.

- For each of the following, use only the equation (without sketching the graph) to describe the graph.
  - $y = 2x + 3$
  - $y - 7 = 2(x - 2)$
- Write the equation  $3x + 2y = 5$  in slope intercept form.
- Write the equation  $y - 1 = 2(x - 2)$  in standard form.

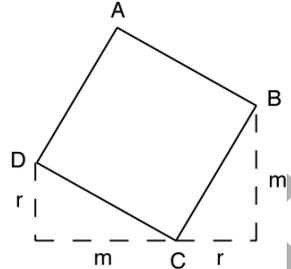
Examples:

- The graph shows the relationship between time and distance from a gas station for a motorcycle and a scooter. What can be said about the relative speed of the motorcycle and scooter that matches the information in the graph? What can be said about the intersection of the graphs of the scooter and the motorcycle? Is it possible to tell which vehicle is further from the gas station at the initial starting point represented in the graph? At the end of the time represented in the graph? Why or why not?



- A 1,500-gallon tank contains 200 gallons of water. Water begins to run into the tank at the rate of 75 gallons per hour. When will the tank be full? Find a linear function that models this situation, draw a graph, and create a table of data points. Once you have answered the question and completed the tasks, explain your reasoning. Interpret the slope and y-intercept of the function in the context of the situation.

- Given that the figure below is a square, find the slope of the sides AB and BC. Describe the relationship between the two slopes.



A1.4.D Write and solve systems of two linear equations and inequalities in two variables.

Students solve both symbolic and word problems, understanding that the solution to a problem is given by the coordinates of the intersection of the two lines when the lines are graphed in the same coordinate plane.

Examples:

- Solve the following simultaneous linear equations algebraically:
  - $-2x + y = 2$
  - $x + y = -1$
- Graph the above two linear equations on the same coordinate plane and use the graph to verify the algebraic solution.
- An academic team is going to a state mathematics contest. There are 30 people going on the trip. There are 5 people who can drive and 2 types of vehicles, vans and cars. A van seats 8 people, and a car seats 4 people, including drivers. How many vans and cars does the team need for the trip? Explain your reasoning.

Let  $v$  = number of vans and  $c$  = number of cars

$$v + c \leq 5$$

$$8v + 4c \geq 30$$

## Performance Expectation

A1.4.E Describe how changes in the parameters of linear functions and functions containing an absolute value of a linear expression affect their graphs and the relationships they represent.

## Explanatory Comments and Examples

In the case of a linear function  $y = f(x)$ , expressed in slope-intercept form ( $y = mx + b$ ),  $m$  and  $b$  are parameters. Students should know that  $f(x) = kx$  represents a direct variation (proportional relationship).

Examples:

- Graph a function of the form  $f(x) = kx$ , describe the effect that changes on  $k$  have on the graph and on  $f(x)$ , and answer questions that arise in proportional situations.
- A gas station's 10,000-gallon underground storage tank contains 1,000 gallons of gasoline. Tanker trucks pump gasoline into the tank at a rate of 400 gallons per minute. How long will it take to fill the tank? Find a function that represents this situation and then graph the function. If the flow rate increases from 400 to 500 gallons per minute, how will the graph of the function change? If the initial amount of gasoline in the tank changes from 1,000 to 2,000 gallons, how will the graph of the function change?
- Compare and contrast the functions  $y = 3|x|$  and  $y = \frac{1}{3}|x|$ .

## Algebra I

### A1.5. Core Content: Quadratic functions and equations

(Algebra)

Students study quadratic functions and their graphs, and quadratic equations with real roots in Algebra I. They use quadratic functions to represent and model problems and answer questions in situations that are modeled by these non-linear functions. Quadratic equations are solved by factoring and by computing with polynomials. The important mathematical technique of completing the square is developed enough so that the quadratic formula can be derived.

#### Performance Expectation

#### Explanatory Comments and Examples

A1.5.A Represent a quadratic function with a symbolic expression, as a graph, in a table, describe it, and make connections among the representations.

Example:

- Kendre and Tyra built a tennis ball cannon that launches tennis balls straight up in the air at an initial velocity of 50 feet per second. The mouth of the cannon is 2 feet off of the ground. The function  $h(t) = -16t^2 + 50t + 2$  describes the height,  $h$  in feet, of the ball  $t$  seconds after the launch.

Make a table from the function. Then use the table to sketch a graph of the height of the tennis ball as a function of time into the launch. Give a verbal description of the graph. How high was the ball after 1 second? When does it reach this height again?

A1.5.B Sketch the graph of a quadratic function, describe the effects that changes in the parameters have on the graph, and interpret the  $x$ -intercepts as solutions to a quadratic equation.

Note that in Algebra I, the parameter  $b$  in the term  $bx$  in the quadratic form  $ax^2 + bx + c$  is not often used to provide useful information about the characteristics of the graph.

Parameters considered most useful are:

- $a$  and  $c$  in  $f(x) = ax^2 + c$
- $a$ ,  $h$ , and  $k$  in  $f(x) = a(x - h)^2 + k$ , and
- $r$ ,  $s$ , and  $a$  in  $f(x) = a(x - r)(x - s)$

Example:

- A particular quadratic function can be expressed in the following two ways:

$$f(x) = -(x - 3)^2 + 1$$

$$f(x) = -(x - 2)(x - 4)$$

— What information about the graph can be directly inferred from each of these forms? Explain your reasoning.

— Sketch the graph of this function, showing the roots.

## Performance Expectation

## Explanatory Comments and Examples

A1.5.C Solve quadratic equations that can be factored as  $(ax + b)(cx + d)$  where  $a$ ,  $b$ ,  $c$ , and  $d$  are integers.

Students learn to efficiently solve quadratic equations by recognizing and using the simplest factoring methods, including recognizing special quadratics as squares and differences of squares.

Examples:

- $2x^2 + x - 3 = 0$ ;  $(x - 1)(2x + 3) = 0$ ;  $x = 1, -\frac{3}{2}$
- $4x^2 + 6x = 0$ ;  $2x(2x + 3) = 0$ ;  $x = 0, -\frac{3}{2}$
- $36x^2 - 25 = 0$ ;  $(6x + 5)(6x - 5) = 0$ ;  $x = \pm\frac{5}{6}$
- $x^2 + 6x + 9 = 0$ ;  $(x + 3)^2 = 0$ ;  $x = -3$

A1.5.D Solve quadratic equations that have real roots by completing the square and by using the quadratic formula.

For those equations that are not easily factored, students solve them by completing the square and by using the quadratic formula. Completing the square should also be used to derive the quadratic formula.

Students learn how to determine if there are two, one, or no real solutions.

Examples:

- Complete the square to solve  $x^2 + 4x = 13$ .

$$x^2 + 4x - 13 = 0$$

$$x^2 + 4x + 4 = 17$$

$$(x + 2)^2 = 17$$

$$x + 2 = \pm\sqrt{17}$$

$$x = -2 \pm\sqrt{17}$$

$$x \approx 2.12, -6.12$$

- Use the quadratic formula to solve  $4x^2 - 2x = 5$ .

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4(4)(-5)}}{2(4)}$$

$$x = \frac{2 \pm \sqrt{84}}{8}$$

$$x = \frac{2 \pm 2\sqrt{21}}{8}$$

$$x = \frac{1 \pm \sqrt{21}}{4}$$

$x \approx 1.40, -0.90$

Draft

## Algebra I

### A1.6. Core Content: Data and distributions

(Data/Statistics/Probability)

Students select mathematical models for data sets and use those models to represent, describe, and compare data sets. They analyze the relationship between two variables and make and defend appropriate predictions, conjectures, and generalizations based on data. Students understand limitations of conclusions based on results of a study or experiment and recognize common misconceptions and misrepresentations.

#### Performance Expectation

#### Explanatory Comments and Examples

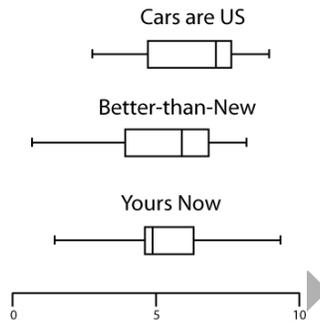
A1.6.A Use and evaluate the accuracy of summary statistics to describe and compare data sets.

A univariate set of data identifies data on a single variable, such as shoe size.

This expectation extends what students have learned in earlier grades to include evaluation and justification. They both compute and evaluate the appropriateness of measure of center and spread (range and interquartile range) and use these measures to accurately compare data sets. Students will draw appropriate conclusions through the use of statistical measures of center, frequency, and spread, combined with graphical displays.

Examples:

- The local minor league baseball team has a salary dispute. Players claim they are being underpaid, but managers disagree.
  - Bearing in mind that a few top players earn salaries that are quite high, would it be in the managers' best interest to use the mean or median when quoting the "average" salary of the team? Why?
  - What would be in the players' best interest?
- Each box-and-whisker plot shows the prices of used cars (in thousands of dollars) advertised for sale at three different car dealers. If you want to go to the dealer whose prices seem least expensive, which dealer would you go to? Use statistics from the displays to justify your answer.



**A1.6.B** Make valid inferences and draw conclusions based on data.

Determine whether arguments based on data confuse association with causation. Evaluate the reasonableness of and make judgments about statistical claims, reports, studies, and conclusions.

Example:

- Mr. Shapiro found that the amount of time his students spent doing mathematics homework is positively correlated with test grades in his class. He concluded that doing homework makes students' test scores higher. Is this conclusion justified? Explain any flaws in Mr. Shapiro's reasoning.

**A1.6.C** Describe how linear transformations affect the center and spread of univariate data.

Examples:

- A company decides to give every one of its employees a \$5,000 raise. What happens to the mean and standard deviation of the salaries as a result?
- A company decides to double each of its employee's salaries. What happens to the mean and standard deviation of the salaries as a result?

**A1.6.D** Find the equation of a linear function that best fits bivariate data that are linearly related, interpret the slope and  $y$ -intercept of the line, and use the equation to make predictions.

A bivariate set of data presents data on two variables, such as shoe size and height.

In high school, the emphasis is on using a line of best fit to interpret data and on students making judgments about whether a bivariate data set can be modeled with a linear function. Students can use various methods, including technology, to obtain a line of best fit.

Making predictions involves both interpolating and extrapolating from the original data set.

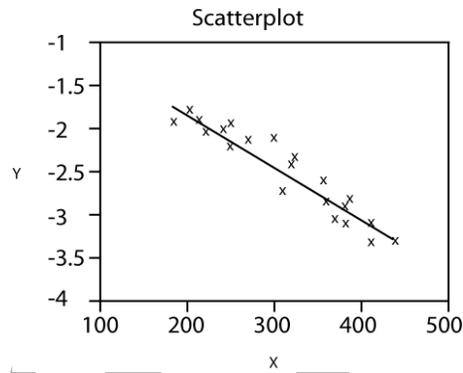
Students need to be able to evaluate the quality of their predictions, recognizing that extrapolation is based on the

assumption that the trend indicated continues beyond the unknown data.

A1.6.E Describe the correlation of data in scatterplots in terms of strong or weak and positive or negative.

Examples:

- Which words—*strong* or *weak*, *positive* or *negative*—could be used to describe the correlation shown in the sample scatterplot below?



## Algebra I

### A1.7. Additional Key Content

(Algebra)

Students develop a basic understanding of arithmetic and geometric sequences and of exponential functions including their graphs and other representations. They use exponential functions to analyze relationships, to represent and model problems, and answer questions in situations that are modeled by these nonlinear functions. Students learn graphical and numerical methods for approximating solutions to exponential equations. Students interpret the meaning of problem solutions and explain solution limitations.

#### Performance Expectation

#### Explanatory Comments and Examples

A1.7.A Sketch the graph for an exponential function of the form  $y = ab^n$  where  $n$  is an integer, describe the effects that changes in the parameters  $a$  and  $b$  have on the graph, and answer questions that arise in situations modeled by exponential functions.

Examples:

- Sketch the graph of  $y = 2^n$  by hand.
- You have won a door prize and are given a choice between two options:
  - \$150 invested for 10 years at 4% compounded annually.
  - \$200 invested for 10 years at 3% compounded annually.
  - How much is each worth at the end of each year of the investment periods?
  - Are the two investments ever equal in value? Which will you choose?

A1.7.B Find and approximate solutions to exponential equations.

Students can approximate solutions using graphs or tables with and without technology.

A1.7.C Express arithmetic and geometric sequences in both explicit and recursive forms, translate between the two forms, explain how rate of change is represented in each form, and use the forms to find specific terms in the sequence.

Examples:

- Write a recursive formula for the arithmetic sequence 5, 9, 13, 17, . . . What is the slope of the line that contains the points associated with these values and their position in the sequence? How is the slope of the line related to the sequence?
- Given that  $u(0) = 3$  and  $u(n + 1) = u(n) + 7$  when  $n$  is a positive integer,
  - a. find  $u(5)$ ;
  - b. find  $n$  so that  $u(n) = 361$ ; and
  - c. find a formula for  $u(n)$ .
- Write a recursive formula for the geometric sequence 5, 10, 20, 40, . . . and determine the 100<sup>th</sup> term.
- Given that  $u(0) = 2$  and  $u(n + 1) = 3u(n)$ ,

- a. find  $u(4)$ , and
- b. find a formula for  $u(n)$ .

A1.7.E Solve an equation involving several variables by expressing one variable in terms of the others.

Examples:

- Solve  $A = p + prt$  for  $p$ .
- Solve  $V = \pi r^2 h$  for  $h$  or for  $r$ .

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## Algebra I

### A1.8. Core Processes: Reasoning, problem solving, and communication

Students formalize the development of reasoning at high school as they use algebra and the properties of number systems to develop valid mathematical arguments, make and prove conjectures, and find counterexamples to refute false statements using correct mathematical language, terms, and symbols. They extend the problem-solving practices developed in earlier grades and apply them to more challenging problems, including problems related to mathematical and applied situations.

In order to represent a problem situation mathematically, students analyze the situation to determine the question(s) to be answered, synthesize given information, and identify implicit and explicit assumptions that have been made. They may try various approaches before solving the problem with the selected strategies. They examine their solution to determine first its reasonableness, then its accuracy, and finally its meaning in the context of the original problem.

The mathematical thinking, reasoning, and problem-solving processes students learn in high school mathematics can be used throughout their lives as they deal with a world in which an accelerating amount of information is presented in quantitative ways, and more and more occupations and fields of study rely on mathematics.

#### Performance Expectation

A1.8.A Analyze a problem situation and represent it mathematically.

A1.8.B Select and apply strategies to solve problems.

A1.8.C Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.

A1.8.D Generalize a solution strategy for a single problem to a class of related problems and apply a

#### Explanatory Comments and Examples (applies to all expectations)

Examples:

- Three teams of students independently conducted experiments to relate the rebound height of a ball to the rebound number. The table gives the average of the teams' results.

Rebound Number	Rebound Height (cm)
0	200
1	155
2	116
3	88
4	66
5	50
6	44

- Construct a scatterplot of the data, and describe the function that relates the height of the ball to the rebound number. Predict the rebound height of the ball on the tenth rebound. Justify your answer.

strategy for a class of related problems to solve specific problems.

A1.8.E Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.

A1.8.F Summarize mathematical ideas with precision and efficiency for a given audience and purpose. (PRC.1.F)

A1.8.G Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.

A1.8.H Use inductive reasoning about algebra and the properties of numbers to make conjectures, and use deductive reasoning to prove or disprove conjectures.

Examples:

- Prove  $(a + b)^2 = a^2 + 2ab + b^2$ .
- A student writes  $(x + 3)^2 = x^2 + 9$ . Explain why this is incorrect.
- Prove formally that the sum of two odd numbers is always even.

## Geometry

### G.1. Core Content: Logical arguments and proofs

(Logic)

Students formalize the reasoning skills they have developed in previous grades and solidify their understanding of what it means to prove a geometric statement mathematically. In Geometry, students encounter the concept of formal proof built on definitions, axioms, and theorems. They use inductive reasoning to test conjectures about geometric relationships and use deductive reasoning to prove or disprove their conclusions. Students defend their reasoning using precise mathematical language and symbols.

#### Performance Expectation

#### Explanatory Comments and Examples

G.1.A Distinguish between inductive and deductive reasoning.	<p>Students generate and test conjectures inductively and then prove (or disprove) their conclusions deductively.</p> <p>Example:</p> <ul style="list-style-type: none"><li>• A student first hypothesizes that the number of degrees in a polygon = <math>180 \cdot (s - 2)</math>, with <math>s</math> = number of sides and then proves this is true. When was the student using inductive reasoning? When was s/he using deductive reasoning? Justify your answers.</li></ul>
G.1.B Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counterexample.	<p>Examples:</p> <ul style="list-style-type: none"><li>• Investigate the relationship among the medians of a triangle using paper folding. Make a conjecture about this relationship.</li><li>• Using dynamic geometry software, decide if the following is a plausible conjecture:., If segment <math>AM</math> is a median in triangle <math>ABC</math>, then ray <math>AM</math> bisects angle <math>BAC</math>.</li></ul>
G.1.C Use deductive reasoning to prove that a valid geometric statement is true.	<p>Valid proofs may be presented in paragraph, two-column, or flow-chart formats. Proof by contradiction is a form of deductive reasoning.</p> <p>Example:</p> <ul style="list-style-type: none"><li>• Prove that the diagonals of a rhombus are perpendicular bisectors of each other.</li></ul>
G.1.D Write the converse, inverse, and contrapositive of a valid proposition and determine their validity.	<p>Examples:</p> <ul style="list-style-type: none"><li>• If <math>m</math> and <math>n</math> are odd integers, then the sum of <math>m</math> and <math>n</math> is an even integer. State the converse and determine whether it is valid.</li><li>• If a quadrilateral is a rectangle, the diagonals have the same length. State the contrapositive and determine</li></ul>

whether it is valid.

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## Performance Expectation

## Explanatory Comments and Examples

G.1.E Identify errors or gaps in a mathematical argument and develop counterexamples to refute invalid statements about geometric relationships.

Example:

- Identify errors in reasoning in the following proof:

Given  $\angle ABC \cong \angle PRQ$ ,  $\overline{AB} \cong \overline{PQ}$ , and  $\overline{BC} \cong \overline{QR}$   
then  $\triangle ABC \cong \triangle PQR$  by SAS.

G.1.F Distinguish between definitions and undefined geometric terms and explain the role of definitions, undefined terms, postulates (axioms), and theorems.

Students sketch *points* and *lines* (undefined terms) and define and sketch representations of other common terms. They use definitions and postulates as they prove theorems throughout geometry. In their work with theorems, they identify the hypothesis and the conclusion and explain the role of each.

Students describe the consequences of changing assumptions or using different definitions for subsequent theorems and logical arguments.

Example:

- There are two definitions of trapezoid that can be found in books or on the web. A trapezoid is either
  - a quadrilateral with exactly one pair of parallel sides or
  - a quadrilateral with at least one pair of parallel sides.

Write some theorems that are true when applied to one definition but not the other, and explain your answer.

## Geometry

### G.2 Core Content: Lines and Angles

(Geometry/Measurement)

Students study basic properties of parallel and perpendicular lines, their respective slopes, and the properties of the angles formed when the parallel lines are intersected by a transversal. They prove the related theorems and apply them to solve both mathematical and practical problems.

#### Performance Expectation

#### Explanatory Comments and Examples

G.2.A Know, prove, and apply theorems about parallel and perpendicular lines.

Students should be able to summarize and explain basic theorems. They are not expected to recite lists of theorems, but they should know the conclusion of a theorem when given its hypothesis.

Examples:

- Prove that a point on the perpendicular bisector of a line segment is equidistant from the ends of the line segment.
- If each of two lines is perpendicular to a given line, what is the relationship between the two lines? How do you know?

G.2.B Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal.

Example:

- Prove that if two parallel lines are cut by a transversal, then alternate-interior angles are equal.
- Take two parallel lines  $l$  and  $m$ , with (distinct) points  $A$  and  $B$  on  $l$  and  $C$  and  $D$  on  $m$ . If  $AC$  intersects  $BD$  at point  $E$ , prove that  $\triangle ABE \approx \triangle CDE$ .

G.2.C Explain and perform basic compass and straightedge constructions related to parallel and perpendicular lines.

Constructions using circles and lines with dynamic geometry software (i.e., virtual compass and straightedge) are equivalent to paper and pencil constructions.

Example:

- Construct and mathematically justify the steps to:
  - Bisect a line segment.
  - Drop a perpendicular from a point to a line.
  - Construct a line through a point that is parallel to another line.

G.2.D Describe the intersections of lines in the plane and in space, of lines and planes, and of planes in space.

Example:

- Describe all the ways that three planes can intersect in space.

## Geometry

### G.3. Core Content: Two- and three-dimensional figures

(Geometry/Measurement)

Students know and can prove theorems about two- and three-dimensional geometric figures, both formally and informally. They identify necessary and sufficient conditions for proving congruence, similarity, and properties of figures. Triangles are a primary focus, beginning with general properties of triangles, working with right triangles and special triangles, proving and applying the Pythagorean Theorem and its converse, and applying the basic trigonometric ratios of sine, cosine, and tangent.

Students extend their learning to other polygons and the circle, and do some work with three-dimensional figures.

#### Performance Expectation

#### Explanatory Comments and Examples

G.3.A Know, explain, and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.

Examples:

- Prove that the sum of the angles of a triangle is  $180^\circ$ .
- Prove and explain theorems about the incenter, circumcenter, orthocenter, and centroid.
- The rural towns of Atwood, Bridgeville, and Carnegie are building a communications tower to serve the needs of all three towns. They want to position the tower so that the distance from each town to the tower is equal. Where should they locate the tower? How far will it be from each town?

G.3.B Determine and prove triangle congruence, triangle similarity, and other properties of triangles.

Students should identify necessary and sufficient conditions for congruence and similarity in triangles, and use these conditions in proofs.

Examples:

- Prove that congruent triangles are similar.
- For a given  $\triangle RST$ , prove that  $\triangle XYZ$ , formed by joining the midpoints of the sides of  $\triangle RST$ , is similar to  $\triangle RST$ .
- Show that not all SSA triangles are congruent.

G.3.C Use the properties of special right triangles ( $30^\circ$ – $60^\circ$ – $90^\circ$  and  $45^\circ$ – $45^\circ$ – $90^\circ$ ) to solve problems.

Examples:

- Determine the length of the altitude of an equilateral triangle whose side lengths measure 5 units.
- If one leg of a right triangle has length 5 and the adjacent angle is  $30^\circ$ , what is the length of the other leg and the hypotenuse?
- If one leg of a  $45^\circ$ – $45^\circ$ – $90^\circ$  triangle has length 5, what

is the length of the hypotenuse.

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## Performance Expectation

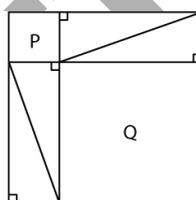
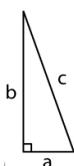
## Explanatory Comments and Examples

G.3.D Know, prove, and apply the Pythagorean Theorem and its converse.

- The pitch of a symmetrical roof on a house 40 feet wide is  $30^\circ$ , what is the length of the rafter exactly and approximately.

Examples:

- Consider any right triangle with legs  $a$  and  $b$  and hypotenuse  $c$ . The right triangle is used to create Figures 1 and 2. Explain how these figures constitute a visual representation of a proof of the Pythagorean Theorem.



Figures 1

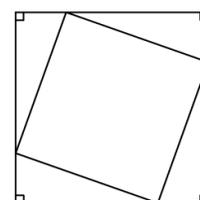
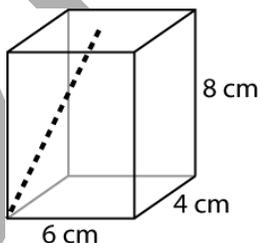


Figure 2

- A juice box is 6 cm by 4 cm by 8 cm. A straw is inserted into a hole in the center of the top of the box. The straw must stick out 2 cm so you can drink from it. If the straw must be long enough to touch each bottom corner of the box, what is the minimum length the straw must be? (Assume the diameter of the straw is 0 for the mathematical model.)



- In  $\triangle ABC$ , with right angle at  $C$ , draw the altitude  $\overline{CD}$  from  $C$  to  $\overline{AB}$ . Name all similar triangles in the diagram. Use these similar triangles to prove the Pythagorean Theorem.
- Apply the Pythagorean Theorem to derive the distance formula in the  $(x, y)$  plane.

### Performance Expectation

### Explanatory Comments and Examples

G.3.E Solve problems involving the basic trigonometric ratios of sine, cosine, and tangent.

Examples:

- A 12-foot ladder leans against a wall to form a  $63^\circ$  angle with the ground. How many feet above the ground is the point on the wall at which the ladder is resting?
- Use the Pythagorean Theorem to establish that  $\sin^2 \theta + \cos^2 \theta = 1$  for  $\theta$  between  $0^\circ$  and  $90^\circ$ .

G.3.F Know, prove, and apply basic theorems about parallelograms.

Properties may include those that address symmetry and properties of angles, diagonals, and angle sums. Students may use inductive and deductive reasoning and counterexamples.

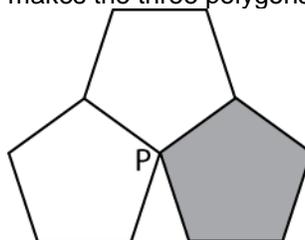
Examples:

- Are opposite sides of a parallelogram always congruent? Why or why not?
- Are opposite angles of a parallelogram always congruent? Why or why not?
- Prove diagonals of a parallelogram bisect each other.
- Explain why if the diagonals of a quadrilateral bisect each other, then the quadrilateral is a parallelogram.
- Prove that the diagonals of a rectangle are congruent. Is this true for any parallelogram? Justify your reasoning.

G.3.G Know, prove, and apply theorems about properties of quadrilaterals and other polygons.

Examples:

- What is the length of the apothem of a regular hexagon with side length 8? What is the area of the hexagon?
- If the shaded pentagon were removed, it could be replaced by a regular  $n$ -sided polygon that would exactly fill the remaining space. Find the value of  $n$  that makes the three polygons fit perfectly.



## Performance Expectation

## Explanatory Comments and Examples

G.3.H Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.

Examples:

- Given a line tangent to a circle, know and explain that the line is perpendicular to the radius drawn to the point of tangency.
- Prove that two chords equally distant from the center of a circle are congruent.
- Prove that a triangle inscribed on the diameter of a circle is a right triangle.
- Prove that if a radius of a circle is perpendicular to a chord of a circle, then the radius bisects the chord.

G.3.I Explain and perform constructions related to the circle.

Students perform constructions using straightedge and compass, paper folding, and dynamic geometry software. What is important is that students understand the mathematics and are able to justify each step in a construction.

Examples:

- In each case, explain why the constructions work:
  - a. Construct the center of a circle from two chords.
  - b. Construct a circumscribed circle for a triangle.
  - c. Inscribe a circle in a triangle.

G.3.J Describe prisms, pyramids, parallelepipeds, and tetrahedra and regular polyhedra in terms of their faces, edges, vertices, and properties.

Examples:

- Given the number of faces of a regular polyhedron, derive a formula for the number of vertices.
- Describe symmetries of three-dimensional polyhedra and their two-dimensional faces.
- Describe the lateral faces that are required for a pyramid to be a right pyramid. Describe the lateral faces required for an oblique pyramid.

**Performance Expectation**

**Explanatory Comments and Examples**

G.3.K Analyze cross-sections of cubes, prisms, pyramids, and spheres and identify the resulting shapes.

Example:

- Start with a regular tetrahedron with edges of unit length 1. Find the plane that divides it into two congruent pieces and whose intersection with the tetrahedron is a square. Find the area of the square. (Requires no pencil or paper.)
- Start with a cube with edges of unit length 1. Find the plane that divides it into two congruent pieces and whose intersection with the cube is a regular hexagon. Find the area of the hexagon.
- Start with a cube with edges of unit length 1. Find the plane that divides it into two congruent pieces and whose intersection with the cube is a rectangle that is not a face and contains four of the vertices. Find the area of the rectangle.
- Which has the larger area, the above rectangle or the above hexagon?

## Geometry

### G.4. Core Content: Geometry in the coordinate plane (Geometry/Measurement, Algebra)

Students make connections between geometry and algebra by studying geometric properties and attributes that can be represented on the coordinate plane. They use the coordinate plane to represent situations that are both purely mathematical and that arise in applied contexts. In the coordinate plane, algebraic problems can be represented geometrically. At the same time, the power of algebra can be used to solve problems about shapes and space.

#### Performance Expectation

#### Explanatory Comments and Examples

G.4.A Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line.

Examples:

- Write an equation for the perpendicular bisector of a given line segment.
- Determine the equation of a line through the points  $(5, 3)$  and  $(5, -2)$ .
- Prove that the slopes of perpendicular lines are negative inverses of each other.

G.4.B Determine the coordinates of a point that is described geometrically.

Examples:

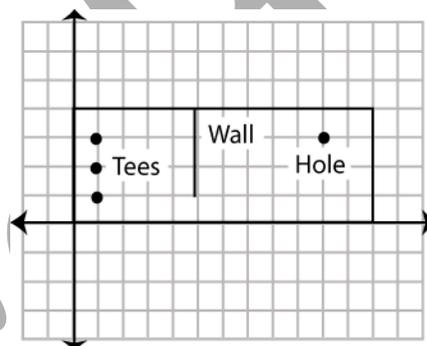
- Determine the coordinates for the midpoint of a given line segment.
- Given the coordinates of three vertices of a parallelogram, determine all possible coordinates for the fourth vertex.
- Given the coordinates for the vertices of a triangle, find the coordinates for the center of the circumscribed circle and the length of its radius.

G.4.C Verify and apply properties of triangles and quadrilaterals in the coordinate plane.

Examples:

- Given four points in a coordinate plane that are the vertices of a quadrilateral, determine whether the quadrilateral is a rhombus, a square, a rectangle, a parallelogram, or none of these. Name all the classifications that apply.
- Given a parallelogram on a coordinate plane, verify that the diagonals bisect each other.
- Given the line with  $y$ -intercept 4 and  $x$ -intercept 3, find the area of a square that has one corner on the origin and the opposite corner on the line described.

- Below is a diagram of a miniature golf hole as drawn on a coordinate grid. The dimensions of the golf hole are 4 feet by 12 feet. Players must start their ball from one of the three tee positions, located at (1, 1), (1, 2), or (1, 3). The hole is located at (10, 3). A wall separates the tees from the hole. At which tee should the ball be placed to create the shortest "hole-in-one" path? Sketch the intended path of the ball, find the distance the ball will travel, and describe your reasoning. (Assume the diameters of the golf ball and the hole are 0 for the mathematical model.)



G.4.D Determine the equation of a circle that is described geometrically in the coordinate plane and, given equations for a circle and a line, determine the coordinates of their intersection(s).

Examples:

- Write an equation for a circle with a radius of 2 units and center at (1, 3).
- Given the circle  $x^2 + y^2 = 4$  and the line  $y = x$ , find the points of intersection.
- Write an equation for a circle given a line segment as a diameter.
- Write an equation for a circle determined by a given center and tangent line.

## Geometry

### G.5. Core Content: Geometric transformations

(Geometry/Measurement)

Students continue their study of geometric transformations, focusing on the effect of such transformations and the composition of transformations on the attributes of geometric figures. They study techniques for establishing congruence and similarity by means of transformations.

#### Performance Expectation

#### Explanatory Comments and Examples

G.5.A Sketch results of transformations and compositions of transformations for a given two-dimensional figure on the coordinate plane, and describe the rule(s) for performing translations or for performing reflections about the coordinate axes or the line $y = x$ .	Transformations include translations, rotations, reflections, and dilations.  Example: <ul style="list-style-type: none"><li>Line <math>m</math> is described by the equation <math>y = 2x + 3</math>. Graph line <math>m</math> and reflect line <math>m</math> across the line <math>y = x</math>. Determine the equation of the image of the reflection. Describe the relationship between the line and its image.</li></ul>
G.5.B Determine and apply properties of transformations.	Students make and test conjectures about compositions of transformations and inverses of transformations, the commutativity and associativity of transformations, and the congruence and similarity of two-dimensional figures under various transformations.  Examples: <ul style="list-style-type: none"><li>Identify transformations (alone or in composition) that preserve congruence.</li><li>Determine whether the composition of two reflections of a line is commutative.</li><li>Determine whether the composition of two rotations about the same point of rotation is commutative.</li><li>Find a rotation that is equivalent to the composition of two reflections over intersecting lines.</li><li>Find the inverse of a given transformation.</li></ul>
G.5.C Given two congruent or similar figures in a coordinate plane, describe a composition of translations, reflections, rotations, and dilations that superimposes one figure on the other.	Examples: <ul style="list-style-type: none"><li>Find a sequence of transformations that superimposes the segment with endpoints <math>(0, 0)</math> and <math>(2, 1)</math> on the segment with endpoints <math>(4, 2)</math> and <math>(3, 0)</math>.</li><li>Find a sequence of transformations that superimposes the triangle with vertices <math>(0, 0)</math>, <math>(1, 1)</math>, and <math>(2, 0)</math> on the triangle with vertices <math>(0, 1)</math>, <math>(2, -1)</math>, and <math>(0, -3)</math>.</li></ul>

***Performance Expectation***

***Explanatory Comments and Examples***

G.5.D Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.

Although the standard only addresses two-dimensional figures, classroom activities can easily extend to three-dimensional figures. Students can also describe the symmetries, reflections across a plane, and rotations about a line for three-dimensional figures.

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## Geometry

### G.6 Additional Key Content: Measurement

Students extend and formalize their work with geometric formulas for perimeter, area, surface area, and volume of two- and three-dimensional figures, focusing on mathematical derivations of these formulas and their applications in complex problems. They use properties of geometry and measurement to solve problems in both purely mathematical and applied contexts. Students understand the role of units in measurement and apply what they know to solve problems involving derived measures like speed or density. They understand that all measurement is approximate and specify precision in measurement problems.

#### Performance Expectation

#### Explanatory Comments and Examples

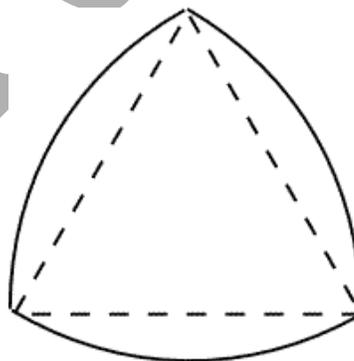
G.6.A Derive and apply formulas for arc length and area of a sector of a circle.

Example:

- Find the area and perimeter of the Reuleaux triangle below.

The Reuleaux triangle is constructed with three arcs. The center of each arc is located at the vertex of an equilateral triangle. Each arc extends between the two opposite vertices of the equilateral triangle.

The figure below is a Reuleaux triangle that circumscribes equilateral triangle  $ABC$ .  $\triangle ABC$  has side length of 5 inches.  $\overset{A}{\text{arc}} AB$  has center  $C$ ,  $\overset{B}{\text{arc}} BC$  has center  $A$ , and  $\overset{C}{\text{arc}} CA$  has center  $B$ , and all three arcs have the same radius equal to the length of the sides of the triangle.



G.6.B Analyze distance and angle measures on a sphere and apply these measurements to the geometry of the earth.

Examples:

- Use a piece of string to measure the distance between two points on a ball or globe; verify that the string lies on an arc of a great circle.
- On a globe, show with examples why airlines use polar routes instead of flying due east from Seattle to Paris.
- Show that the sum of the angles of a triangle on a sphere is greater than 180 degrees.

## Performance Expectation

## Explanatory Comments and Examples

G.6.C Apply formulas for surface area and volume of three-dimensional figures to solve problems.

Problems include those that are purely mathematical as well as those that arise in applied contexts.

Three-dimensional figures include right and oblique prisms, pyramids, cylinders, cones, spheres, and composite three-dimensional figures.

Example:

- As Pam scooped ice cream into a cone, she began to formulate a geometry problem in her mind. If the ice cream were perfectly spherical with diameter 2.25" and sat on a geometric cone that also had diameter 2.25" and was 4.5" tall, would the cone hold all the ice cream as it melted (without her eating any of it)? She figured the melted ice cream would have the same volume as the unmelted ice cream.

Find the solution to Pam's problem and justify your reasoning.

- A rectangle is 5 inches by 10 inches. Find the volume of a cylinder that is generated by rotating the rectangle about the 10-inch side.

G.6.D Predict and verify the effect that changing one, two, or three linear dimensions has on perimeter, area, volume, or surface area of two- and three-dimensional figures.

The emphasis in high school should be on verifying the relationships between length, area, and volume and on making predictions using algebraic methods.

Example:

- What happens to the volume of a rectangular prism if four parallel edges are doubled in length?
- The ratio of a pair of corresponding sides in two similar triangles is 5:3. The area of the smaller triangle is 108 in<sup>2</sup>. What is the area of the larger triangle?

G.6.E Use different degrees of precision in measurement, explain the reason for using a certain degree of precision, and apply estimation strategies to obtain reasonable measurements with appropriate precision for a given purpose.

Example:

- The U.S. Census Bureau reported a national population of 299,894,924 on its Population Clock in mid-October of 2006. One can say that the U.S. population is 3 hundred million ( $3 \times 10^8$ ) and be precise to one digit. Although the population had surpassed 3 hundred million by the end of that month, explain why  $3 \times 10^8$  remained precise to one digit.

## Performance Expectation

## Explanatory Comments and Examples

G.6.F Solve problems involving measurement conversions within and between systems, including those involving derived units, and analyze solutions in terms of reasonableness of solutions and appropriate units.

This performance expectation is intended to build on students' knowledge of proportional relationships. Students should understand the relationship between scale factors and their inverses as they relate to choices about when to multiply and when to divide in converting measurements.

Derived units include those that measure speed, density, flow rates, population density, etc.

Example:

- A digital camera takes pictures that are 3.2 megabytes in size. If the pictures are stored on a 1-gigabyte card, how many pictures can be taken before the card is full?

## Geometry

### G.7. Core Processes: Reasoning, problem solving, and communication

Students formalize the development of reasoning in Geometry as they become more sophisticated in their ability to reason inductively and begin to use deductive reasoning in formal proofs. They extend the problem-solving practices developed in earlier grades and apply them to more challenging problems, including problems related to mathematical and applied situations. They use correct mathematical language, terms, symbols, and conventions as they address problems in Geometry and provide descriptions and justifications of solution processes.

In order to represent a problem situation mathematically, students analyze the situation to determine the question(s) to be answered, synthesize given information, and identify implicit and explicit assumptions that have been made. They may try various approaches before solving the problem with the selected strategies. They examine their solution to determine first its reasonableness, then its accuracy, and finally its meaning in the context of the original problem.

The mathematical thinking, reasoning, and problem-solving processes students learn in high school mathematics can be used throughout their lives as they deal with a world in which an accelerating amount of information is presented in quantitative ways, and more and more occupations and fields of study rely on mathematics.

#### Performance Expectation

#### Explanatory Comments and Examples

G.7.A Analyze a problem situation and represent it mathematically.

G.7.B Select and apply strategies to solve problems.

G.7.C Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.

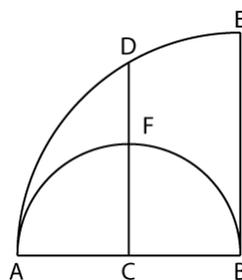
G.7.D Generalize a solution strategy for a single problem to a class of related problems and apply a strategy for a class of related problems to solve specific problems.

G.7.E Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.

G.7.F Summarize mathematical ideas

Examples:

- $\overline{AB}$  is the diameter of the semicircle and the radius of the quarter circle shown in the figure below.  $\overline{DC}$  is the perpendicular bisector of  $\overline{AB}$ .

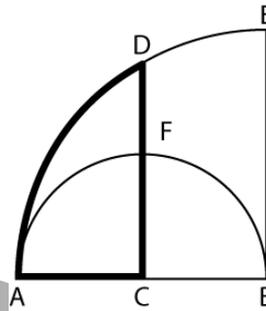


Imagine all of the triangles formed by  $\overline{AB}$  and any arbitrary point lying in the region bounded by  $\overline{AC}$ ,  $\overline{CD}$ , and  $\overline{AD}$ , seen in bold below.

with precision and efficiency for a given audience and purpose.

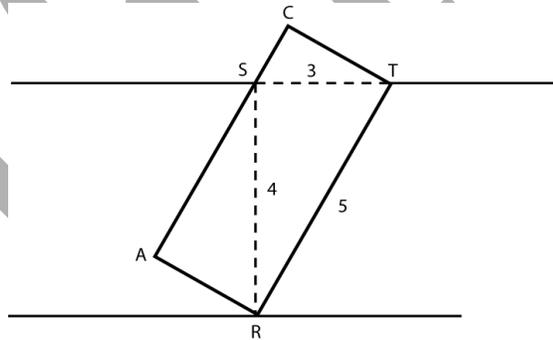
G.7.G Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.

G.7.H Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.



Use inductive reasoning to make conjectures about what types of triangles are formed based upon the region where the third vertex is located. Use deductive reasoning to verify your conjectures.

- Rectangular cartons that are 5 feet long need to be placed in a storeroom that is located at the end of a hallway. The walls of the hallway are parallel. The door into the hallway is 3 feet wide and the width of the hallway is 4 feet. The cartons must be carried face up. They may not be tilted. Investigate the width and carton top area that will fit through the doorway.



Generalize your results for a hallway opening of  $x$  feet and a hallway width of  $y$  feet if the maximum carton dimensions are  $c$  feet long and  $x^2 + y^2 = c^2$ .

## Algebra II

### A2.1. Core Content: Solving Problems

Students extend their ability to solve problems with additional functions and equations in Algebra II. When presented with a word problem, students know which function or equation models the problem and use that information to write an equation to solve the problem. They deepen their understanding and skills related to linear and quadratic functions gained in Algebra I and are able to solve more complex problems. Additionally, they learn to solve problems modeled by exponential and logarithmic functions, systems of equations and inequalities, inverse variations, and combinations and permutations. Turning word problems into equations that can be solved is a skill students hone throughout the year.

The first core content area highlights the type of problems students will be able to solve by the end of Algebra II.

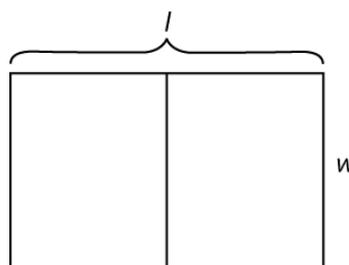
#### Performance Expectation

A2.1.A Select and justify functions and equations to model and solve problems.

#### Explanatory Comments and Examples

Examples:

- A manufacturer wants to design a cylindrical soda can that will hold 500 milliliters (mL) of soda. The manufacturer's research has determined that an optimal can height is between 10 and 15 centimeters. Find a function for the radius in terms of the height and use it to find the possible range of radius measurements. Explain your reasoning.
- Dawson wants to make a horse corral by creating a rectangle that is divided into 2 parts, similar to the following diagram. He has a 1200-foot roll of fencing to do the job.
  - What are the dimensions of the largest such enclosure?
  - What function or equation type best models this situation?



- A fireworks rocket is launched upward from the ground with an initial velocity of 160 feet per second. The formula for vertical motion is  $h(t) = 0.5at^2 + vt + s$ , where the gravitational constant,  $a$ , is -32 feet per square second,  $v$  is the initial velocity, and  $s$  is the

initial height. Time  $t$  is measured in seconds, and height  $h$  is measured in feet.

- For the ultimate effect, the rocket must explode after it reaches its maximum height. For the safety of the crowd, it must explode at least 250 ft. above the ground. How many seconds should the fuse burn before it ignites the fireworks?

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## Performance Expectation

A2.1.B Solve problems that can be represented by systems of equations and inequalities.

A2.1.C Solve problems that can be represented by quadratic functions, equations, and inequalities.

## Explanatory Comments and Examples

Examples:

- Mr. Smith uses the following formula to calculate students' final grades in his Algebra II class:  $0.4E + 0.6T = C$ , where  $E$  represents the score on the final exam, and  $T$  represents the average score of all tests given during the grading period. All tests and the final exam are worth a maximum of 100 points. The minimum passing score on tests, the final exam, and the course is 60.

Determine the inequalities that describe the following situation and sketch a system of graphs to illustrate it. When necessary, round scores to the nearest tenth.

- Is it possible for a student to have a failing test score average (i.e.,  $T < 60$  points) and still pass the course?
- If you answered “yes,” what is the minimum test score average a student can have and still pass the course? What final exam score is needed to pass the course with a minimum test score average?
- A student has a particular test score average. How can (s)he figure out the minimum final exam score needed to pass the course?
- Data derived from an experiment seems to be parabolic when plotted on a coordinate grid. Three observed data points are (2, 10), (3, 8), and (4, 4). Write a quadratic equation that passes through the points.

In addition to solving area and velocity problems by factoring and applying the quadratic formula to the quadratic equation, students use the vertex form of the equation to solve problems about maximums, minimums, and symmetry.

Examples:

- The Gateway Arch in St. Louis has a special shape called a catenary, which looks a lot like a parabola. It has a base width of 600 feet and is 630 feet high. Which is taller, this catenary arch or a parabolic arch that has the same base width but has a height of 450 feet at a point 150 feet from one of the pillars? What is the height of this second parabolic arch?

## Performance Expectation

A2.1.D Solve problems that can be represented by exponential and logarithmic functions and equations.

A2.1.E Solve problems that can be represented by inverse variations of

the forms  $f(x) = \frac{a}{x} + b$ ,  $f(x) = \frac{a}{x^2} + b$ ,

and  $f(x) = \frac{a}{(bx+c)}$ .

## Explanatory Comments and Examples

Examples:

- If you need \$15,000 in 4 years to start college, how much money would you need to invest now? Assume an interest rate of 4% compounded monthly for 48 months.
- The half-life of a certain radioactive substance is 65 days. If there are 4.7 grams initially present, how long will it take for there to be less than 1 gram of the substance remaining?

Examples:

- At the You're Toast, Dude! toaster company, the weekly cost to run the factory is \$1400, and the cost of producing each toaster is an additional \$4 per toaster.
  - Find a function to represent the weekly cost in dollars,  $C(x)$ , of producing  $x$  toasters. Assume either unlimited production is possible or set a maximum per week.
  - Find a function to represent the total production cost per toaster for a week.
  - How many toasters must be produced within a week to have a total production cost per toaster of \$8?
- A person's weight varies inversely as the square of his distance from the center of the earth. Assume the radius of the earth is 4000 miles. How much would a 200-pound man weigh
  - 1000 miles above the surface of the earth?
  - 2000 miles above the surface of the earth?

### Performance Expectation

A2.1.F Solve problems involving combinations and permutations.

### Explanatory Comments and Examples

Example:

- The company Ali works for allows her to invest in her choice from 10 different mutual funds, 6 of which grew by at least 5% over the last year. Ali randomly selected 4 of the 10 funds as her investment choices. What is the probability that 3 of Ali's funds grew by 5%?
- Four points ( $A$ ,  $B$ ,  $C$ , and  $D$ ) lie on one straight line,  $n$ , and five points ( $E$ ,  $F$ ,  $G$ ,  $H$ , and  $J$ ) lie on another straight line,  $m$ , that is parallel to  $n$ . What is the probability that three points, selected at random, will form a triangle?

## Algebra II

### A2.2. Core Content: Numbers, expressions, and operations (Numbers, Operations, Algebra)

Students broaden their understanding of the real number system to include complex numbers, which they will see as solutions in quadratic equations. They grow more proficient in their use of algebraic techniques as they continue to use variables and expressions to solve problems. As the mathematics and types of problems increase in sophistication, so does the complexity of the symbolic manipulation and computation necessary to solve the problems. Section two identifies foundational algebraic skills students need to be successful in subsequent mathematics courses.

#### Performance Expectation

A2.2.A Explain how whole, integer, rational, real, and complex numbers are related, and identify the number system(s) within which a given algebraic equation can be solved.

A2.2.B Use the laws of exponents to simplify and evaluate numeric and algebraic expressions that contain rational exponents.

#### Explanatory Comments and Examples

Example:

- Within which number system(s) can each of the following be solved? Explain how you know.

$$3x + 2 = 5$$

$$x^2 = 1$$

$$x^2 = \frac{1}{4}$$

$$x^2 = 2$$

$$x^2 = -2$$

$$\frac{x}{7} = \pi$$

Examples:

- Convert the following from a radical to a rational expression or visa versa.

$$24^{\frac{1}{3}}$$

$$\sqrt[5]{16}$$

$$\sqrt{x^2 + 1}$$

$$\frac{x^2}{\sqrt{x}}$$

- Evaluate  $x^{-3/2}$  for  $x = 27$

### Performance Expectation

A2.2.C Add, subtract, multiply, divide, and simplify repressions of the form,  $\frac{(ax + b)}{(cx + d)}$  where a, b, and c are real numbers such that  $bx+c \neq 0$ .

### Explanatory Comments and Examples

In the same way that integers were extended to fractions, polynomials are extended to rational expressions. Students must be able to perform the four basic arithmetic operations on more general expressions that involve exponentials.

The binomial theorem is useful when raising expressions to powers, such as  $(x + 3)^5$ .

Examples:

- $\frac{x+1}{(x+1)^2} - \frac{3x-3}{x^2-1}$
- Divide  $\frac{(x+2)^{3/2}}{x+1}$  by  $\frac{x+2}{x^2-1}$

## Algebra II

### A2.3. Core Content : Quadratic functions and equations

(Algebra)

Students continue to solve quadratic equations and inequalities, encountering complex roots for the first time in Algebra II. They learn to translate between forms of the quadratic equation, applying the vertex form to evaluate maximum, minimum, and symmetry of the graph and to know which form of the equation should be used in a particular situation. This opens up a whole range of new problems students can solve using quadratics. These algebraic skills are applied in subsequent high school mathematics and statistics courses.

#### Performance Expectation

A2.3.A Translate between the standard form of a quadratic function, the vertex form, and the factored form; graph and interpret the meaning of each form.

#### Explanatory Comments and Examples

Students translate among forms to convert to one that is appropriate—e.g., vertex form—to solve specific problems.

Students learn about the advantages of the standard form ( $f(x) = ax^2 + bx + c$ ), the vertex form ( $f(x) = a(x - h)^2 + d$ ), and the factored form ( $f(x) = a(x - r)(x - s)$ ). They produce the vertex form by completing the square on the function in standard form, which allows them to see the symmetry of the graph of a quadratic function as well as the maximum or minimum. This opens up a whole range of new problems students can solve using quadratics. Students continue to find the solutions of the equation, which in Algebra II can be either real or complex.

- A fireworks rocket is launched upward from the ground with an initial velocity of 160 feet per second. The formula for vertical motion is  $h(t) = 0.5at^2 + vt + s$ , where the gravitational constant,  $a$ , is -32 feet per square second,  $v$  is the initial velocity, and  $s$  is the initial height. Time  $t$  is measured in seconds, and height  $h$  is measured in feet.

For the ultimate effect, the rocket must explode after it reaches its maximum height. For the safety of the crowd, it must explode at least 256 ft. above the ground. The fuse must be set for this interval. What is the range of times from rocket launch to exploding that meet these conditions?

Examples:

- Find the minimum, the line of symmetry, and the roots for each of the following functions:

$$f(x) = x^2 - 4x + 3$$

$$f(x) = x^2 - 4x + 4$$

$$f(x) = x^2 - 4x + 5$$

A2.3.B Determine the number and nature of the roots of a quadratic function.

Students should be able to recognize and interpret the discriminant.

Students should also be familiar with the Fundamental Theorem of Algebra, i.e., that all polynomials, not just quadratics, have roots over the complex numbers. This concept becomes increasingly important as students progress through mathematics.

Example:

- For what values of  $a$  does  $x^2 - 6x + a$  have 2 real roots, 1 real root, and no real roots?

### Performance Expectation

A2.3.C Solve quadratic equations and inequalities, including equations with complex roots.

### Explanatory Comments and Examples

Students solve equations that are not easily factored by completing the square and by using the quadratic formula.

Examples:

- $x^2 - 10x + 34 = 0$
- $3x^2 + 10 = 4x$
- A rocket is launched from 180 feet above the ground at time  $t = 0$ . The equation that models this situation is given by  $h = -16t^2 + 96t + 180$ , where  $t$  is time measured in seconds and  $h$  is height above the ground measured in feet.
  - a. What is a reasonable domain restriction for  $t$  in this context?
  - b. Determine the height of the rocket two seconds after it was launched.
  - c. Determine the maximum height obtained by the rocket.
  - d. Determine the time when the rocket is more than 100 feet above ground.
- Farmer Helen wants to build a pigpen. With 100 feet of fence, she wants a rectangular pen with one side being a side of her existing barn. What dimensions should she use for her pigpen in order to have the maximum number of square feet.

## Algebra II

### A2.4. Core Content: Exponential and logarithmic functions and equations

(Algebra)

Students extend their understanding of exponential functions gained in Algebra I with a particular emphasis on inverse functions. This leads to a natural introduction of logs and logarithmic functions. They learn to use the basic properties of exponential and logarithmic functions, graphing both function types to analyze relationships, represent and model problems, and answer questions. Students apply these functions to many practical situations, such as applying exponential functions to determine compound interest and applying logarithmic functions to determine the pH of a liquid.

#### Performance Expectation

#### Explanatory Comments and Examples

A2.4.A Know and use basic properties of exponential and logarithmic functions and the inverse relationship between them.

Examples:

- Given  $f(x) = 4^x$ . Write an equation for the inverse of this function. Graph the functions on the same coordinate grid.

Find  $f(-3)$ .

Evaluate the inverse function at 7.

- Find the exact value of  $x$  in:

$$\log_x 16 = 4/3$$

$$\log_3 81 = x$$

A2.4.B Graph an exponential function of the form  $f(x) = ab^x$  and its inverse logarithmic function.

Students expand on the work they did in Algebra I on functions of the form  $y = ab^x$ . Although the concept of inverses is not fully developed until Precalculus, there is an emphasis in Algebra II on students recognizing the inverse relationship between exponential and logarithmic functions and how this is reflected in the shapes of the graphs.

Example:

- Find the equation for the inverse function of  $y = 3^x$ . Graph both functions. What are the characteristics of the graphs that indicate they are inverse functions?

## Performance Expectation

A2.4.C Solve exponential and logarithmic equations.

## Explanatory Comments and Examples

Example:

- A recommended adult dosage of the cold medication NoMoreFlu is 16 mL. NoMoreFlu causes drowsiness when there are more than 4 mL in one's system, making it unsafe to drive, operate machinery, etc. The manufacturer wants to print a warning label telling people how long they should wait after taking NoMoreFlu for the drowsiness to pass. If the typical metabolic rate is such that one quarter of the NoMoreFlu is lost every four hours, how long should adults wait after taking NoMoreFlu to ensure that there will be
  - fewer than 4 mL of NoMoreFlu in their system?
  - Fewer than 1 mL?
  - Fewer than 0.1 mL?
- Solve for  $x$  in  $256 = 2^{x^2-1}$ .

## Algebra II

### A2.5. Core Content: Additional functions and equations

(Algebra)

Students learn about additional classes of functions including square root, cubic, logarithmic, and those involving inverse variation. They plot points and sketch graphs to represent these functions and use algebraic techniques to solve their equations. In addition to studying the defining characteristics of each of these classes of functions, students gain the ability to construct new functions algebraically and using transformations. These extended skills and techniques serve as the foundation for further study and analysis of functions in subsequent mathematics courses.

#### Performance Expectation

A2.5.A Construct new functions using the transformations  $f(x - h)$ ,  $f(x) + k$ ,  $cf(x)$ , and by adding and subtracting functions, and describe the effect on the original graph.

#### Explanatory Comments and Examples

Students use functions, including those that contain the absolute value of expressions, quadratic expressions, square root expressions, and exponential expressions, to make simple transformations (horizontal and vertical shifts, reflections about axes). Additionally, students algebraically construct new functions using addition and subtraction.

Examples:

- What sequence of transformations changes  $f(x) = x^2$  to  $g(x) = -5(x - 3)^2 + 2$  ?
- Carly decides to earn extra money by making glass bead bracelets. She purchases tools for \$40. Elastic bead cord for each bracelet costs \$0.10. Glass beads come in packs of 10 beads, and one pack has enough beads to make one bracelet. Base price for the beads is \$2.00 per pack. For each of the first 100 packs she buys, she gets \$0.01 off each of the packs. (For example, if she purchases three packs, each pack costs \$1.97 instead of \$2.00.) Carly plans to sell each bracelet for \$4.00. Assume Carly will make a maximum of 100 bracelets.
  - Find a function  $C(b)$  that describes Carly's costs.
  - Find a function  $R(b)$  that describes Carly's revenue.

Carly's profit is described by  $P(b) = R(b) - C(b)$ .

- Find  $P(b)$ .
- How many bracelets does Carly have to sell to break even?
- To make a profit of \$100?

## Performance Expectation

A2.5.B Plot points, sketch, and describe the graphs of functions of the form, and solve related equations.

A2.5.C Plot points, sketch, and describe the graphs of functions of the form

$$f(x) = \frac{a}{x} + b, \quad f(x) = \frac{a}{x^2} + b,$$

and  $f(x) = \frac{a}{(bx+c)}$ , and solve related equations.

A2.5.D Plot points, sketch, and describe the graphs of cubic polynomial functions of the form  $f(x) = ax^3 + d$  as an example of higher order polynomials and solve related equations.

## Explanatory Comments and Examples

Students solve algebraic equations that involve the square root of a linear expression over the real numbers. Students should be able to identify extraneous solutions and explain how they arose.

Students should view the function  $g(x) = \sqrt{x}$  as the inverse function of  $f(x) = x^2$ , recognizing that the functions have different domains.

Example:

- Analyze the following equations and tell what you know about the solutions. Then solve the equations.

$$2\sqrt{x+5} = 7$$

$$\sqrt{5x-6} = -2$$

$$\sqrt{2x+15} = x$$

$$\sqrt{2x-5} = x+7$$

Examples:

- Sketch the graphs of the four functions  $f(x) = \frac{a}{x^2} + b$  when  $a = 4$  and  $8$  and  $b = 0$  and  $1$ .
- Sketch the graphs of the four functions  $f(x) = \frac{4}{(bx+c)}$  when  $b = 1$  and  $4$  and  $c = 2$  and  $3$ .

Examples:

- Solve for  $x$  in  $60 = -2x^3 + 6$ .

## Algebra II

### A2.6. Core Content: Probability, data, and distributions

(Data/Statistics/Probability)

Students formalize their study of probability, computing both combinations and permutations to calculate the likelihood of an outcome in uncertain circumstances and applying the binomial theorem to solve problems. They extend their use of statistics to graph bivariate data and analyze its shape to make predictions. They calculate and interpret measures of variability, confidence intervals, and margin of error for population proportions. Dual goals underlie the content in the section: students prepared for the further study of statistics and thoughtful consumers of data.

#### Performance Expectation

#### Explanatory Comments and Examples

A2.6.A Apply the fundamental counting principle and the ideas of order and replacement to calculate probabilities in situations arising from two-stage experiments (compound events).

A2.6.B Given a finite sample space consisting of equally likely outcomes and containing events A and B, determine whether A and B are independent or dependent, and find the conditional probability of A given B.

A2.6.C Compute permutations and combinations, and use the results to calculate probabilities.

A2.6.D Apply the binomial theorem to solve problems involving probability.

Example:

- What is the probability of drawing a heart from a standard deck of cards on a second draw, given that a heart was drawn on the first draw and not replaced?

Example:

- Two friends, Abby and Ben, are among five students being considered for three student council positions. If each of the five students has an equal likelihood of being selected, what is the probability that Abby and Ben will both be selected?

The binomial theorem is also applied when computing with polynomials.

Examples:

- Use Pascal's triangle and the binomial theorem to find the number of ways six objects can be selected four at a time.

## Performance Expectation

## Explanatory Comments and Examples

A2.6.E Determine if a bivariate data set can be better modeled with an exponential or a quadratic function and use the model to make predictions.

- In a survey, 33% of adults reported that they preferred to get the news from newspapers rather than television. If you survey 5 people, what is the probability of getting exactly 2 people who say they prefer news from the newspaper?
  - Write an equation that can be used to solve the problem.
  - Create a histogram of the binomial distribution of the probability of getting 0 through 5 responders saying they prefer the newspaper.

A2.6.F Calculate and interpret measures of variability and standard deviation and use these measures to describe and compare data sets.

In high school, determining a formula for a curve of best fit requires a graphing calculator or similar technological tool.

Students should be able to identify unimodality, symmetry, standard deviation, spread, and the shape of a data curve to determine whether the curve could reasonably be approximated by a normal distribution.

Given formulas, student should be able to calculate the standard deviation for a small data set, but calculators ought to be used if there are very many points in the data set. It is important that students be able to describe the characteristics of the normal distribution and identify common examples of data that are and are not reasonably modeled by it. Common examples of distributions that are approximately normal include physical performance measurements (i.e., weightlifting, timed runs), heights, and weights.

Apply the Empirical Rule (68–95–99.7 Rule) to approximate the percentage of the population meeting certain criteria in a normal distribution.

Examples:

- Which is more likely to be affected by an outlier in a set of data, the interquartile range or the standard deviation?

A2.6.G Calculate and interpret margin of error and confidence intervals for population proportions.

Students will use technology based on the complexity of the situation.

Students use confidence intervals to critique various methods of statistical experimental design, data collection, and data presentation used to investigate important problems, including those reported in public studies.

## A2.6.G Examples

7,000 randomly selected American parents were asked whether the US government should regulate “promoting” healthier diets for children, such as banning trans fats and certain foods. 1680 said yes. Construct a 95% confidence interval for the proportion of Americans who believe that that government should do this. (Formula for the margin of error (E):  $E = z_c (\sqrt{p(1-p)/n})$ ;  $z_{95} = 1.96$ )

Note: Formula should look like:

$$E = z_c \sqrt{\frac{p(1-p)}{n}}$$

In 2007, 400 of the 500 10<sup>th</sup> graders in Local High School passed the WASL. In 2008, 375 of the 480 10<sup>th</sup> graders passed the test. The Local Gazette headline read “10<sup>th</sup> Grade WASL Scores Decline in 2008!” In response, the Superintendent of Local School District wrote a letter to the editor claiming that, in fact, WASL performance was not significantly lower in 2008 than it was in 2007. Who is correct, the Local Gazette or the Superintendent? Use mathematics to justify your conclusion. ( $E = z_c (\sqrt{p(1-p)/n})$ ;  $z_{95} = 1.96$ )

## Algebra II

### A2.7. Additional Key Content

(Algebra)

Students study two important topics in the Additional Key Content section. First, they apply their ability to solve systems of two equations in two variables to solving systems of three equations in three variables, which leads to the full development of matrices in Precalculus. Second, they formalize their work with series as they learn to find the terms and partial sums of arithmetic series and the terms, partial, and infinite sums of geometric series. The conceptual understanding developed in the topic of series lays an important foundation for understanding calculus.

#### Performance Expectation

#### Explanatory Comments and Examples

A2.7.A Solve systems of three equations with three variables.

Students solve systems of equations using algebraic and numeric methods.

Examples:

- Jill, Ann, and Stan are to inherit \$20,000. Stan is to get twice as much as Jill, and Ann is to get twice as much as Stan. How much does each get?

- Solve the following system of equations.

$$2x - y - z = 7$$

$$3x + 5y + z = -10$$

$$4x - 3y + 2z = 4$$

A2.7.B Find the terms and partial sums of arithmetic and geometric series and the infinite sum for geometric series.

Students build on the knowledge gained in Algebra I to find specific terms in a sequence and to express arithmetic and geometric sequences in both explicit and recursive forms.

Examples:

- A ball is dropped from a height of 10 meters. Each time it hits the ground, it rebounds  $\frac{3}{4}$  of the distance it has fallen. What is the total sum of the distances it falls and rebounds before coming to rest?

- Show that the sum of the first 10 terms of the geometric series  $1 + \frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \dots$  is twice the sum of the first 10 terms of the geometric series  $1 - \frac{1}{3} + \frac{1}{9} - \frac{1}{27} + \dots$

## Algebra II

### A2.8. Core Processes: Reasoning, problem solving, and communication

Students formalize the development of reasoning at high school as they use algebra and the properties of number systems to develop valid mathematical arguments, make and prove conjectures, and find counterexamples to refute false statements using correct mathematical language, terms, and symbols. They extend the problem-solving practices developed in earlier grades and apply them to more challenging problems, including problems related to mathematical and applied situations.

In order to represent a problem situation mathematically, students analyze the situation to determine the question(s) to be answered, synthesize given information, and identify implicit and explicit assumptions that have been made. They may try various approaches before solving the problem with the selected strategies. They examine their solution to determine first its reasonableness, then its accuracy, and finally its meaning in the context of the original problem.

The mathematical thinking, reasoning, and problem-solving processes students learn in high school mathematics can be used throughout their lives as they deal with a world in which an accelerating amount of information is presented in quantitative ways, and more and more occupations and fields of study rely on mathematics.

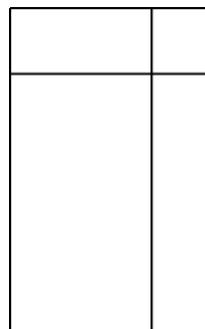
#### Performance Expectation

- A2.8.A Analyze a problem situation and represent it mathematically.
- A2.8.B Select and apply strategies to solve problems.
- A2.8.C Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.
- A2.8.D Generalize a solution strategy for a single problem to a class of related problems and apply a strategy for a class of related problems to solve specific problems.
- A2.8.E Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.
- A2.8.F Summarize mathematical ideas with precision and efficiency for a given audience and purpose.

#### Explanatory Comments and Examples

Examples:

- Show that  $\sqrt{a+b} \neq \sqrt{a} + \sqrt{b}$ , for all real values of  $a$  and  $b$ .
- Show that the product of two odd numbers is always odd.
- Leo is painting a picture on a canvas that measures 32 inches by 20 inches. He has divided the canvas into four different rectangles, as shown in the diagram.



He would like the upper right corner to be a rectangle with its length 1.6 times its width, Leo wants the area of the larger rectangle in the lower

A2.8.G Use inductive reasoning and the properties of numbers to make conjectures, and use deductive reasoning to prove or disprove conjectures.

A2.8.H Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.

left to be at least half the total area of the canvas. Describe all the possibilities for the dimensions of the upper right rectangle to the nearest hundredth, and explain why the possibilities are valid.

If Leo uses the largest possible dimensions for the smaller rectangle,

- what will the dimensions of the larger rectangle be?
- will the larger rectangle be similar to the rectangle in the upper right corner? Why or why not?
- is the original canvas similar to the rectangle in the upper right corner?

(A rectangle whose length and width are in the ratio  $\frac{1+\sqrt{5}}{2}$  (approximately equal to 1.6) is called a “golden rectangle” and is often used in art and architecture.)

- A relationship between variables can be represented with a table, a graph, an equation, or a description in words.
  - How can you decide from a table whether a relationship is linear, quadratic, or exponential?
  - How can you decide from a graph whether a relationship is linear, quadratic, or exponential?
  - How can you decide from an equation whether a relationship is linear, quadratic, or exponential?



Washington State  
Board of Education



Working to Raise Student Achievement Dramatically

**2007 (as revised per 2008 session) and 2008 Legislative Assignments and Time Line  
For Math Standards and Assessments  
June 2008**

Lead Agency	Assignment	Due Date
SBE	<p>SBE shall review the consultant's draft report of the analysis of the February 2008 version of the revised math standards, consult the mathematics advisory panel, hold a public hearing to receive comment, and direct any subsequent modifications to the consultant's report. After the modifications are made, the State Board of Education shall forward the final report and recommendations to the SPI for implementation. (SB 6534)</p> <p>Note: SBE approved adoption of OSPI K-8 math standards 4/28/08 and pending approval of OSPI adoption of high school math standards on 7/30/08</p>	5/15/08
SBE	Status report on math and science reviews to legislature. (HB 1906)	6/1/08
OSPI	OSPI shall revise the math standards to conform precisely to and incorporate each of the recommendations of the SBE and submit revisions to the SBE. (SB 6534)	7/1/08
SBE	SBE shall approve adoption by SPI of the final revised standards or develop a plan for ensuring recommendations are completed to adopt by 9/25/08. (SB 6534)	7/31/08
OSPI and SBE	Within 30 days of adoption, OSPI and SBE will work together on an RFP for private vendors or non profits to adapt an existing math curriculum to be aligned with the new standards and make the curriculum available on line at no cost to school districts. (2SHB 2598)	8/31/08
SBE	Status report on math and science reviews to legislature. (HB 1906)	9/1/08
OSPI	Within six months after standards approval, OSPI shall present to the SBE recommendations for	10/28/08 for K-8 1/31/09 for high

<b>Lead Agency</b>	<b>Assignment</b>	<b>Due Date</b>
	three basic math curricula each for elementary, middle, and high school grade spans. (2SHB 2598)	school
SBE	Within two months after presentation of recommended curricular, provide official comment and recommendations on OSPI proposed math curricular menu. (2SHB 2598)	12/28/08 for K-8 3/31/09 for high school
OSPI	OSPI shall conduct a comprehensive survey of math curricula being used by school districts at all grade levels and the textbook and curriculum purchasing cycle of districts. (2SHB2598)	11/15/08
OSPI	OSPI will have new WASL for new K-8 math standards for Spring 2010 (pilot items in 2009)	No legislative deadline
OSPI	OSPI will consult with the SBE to develop end of course (EOC) assessments for Algebra I, Geometry, Integrated I and, Integrated II. (ESHB 3166)	2009/10 school year for Algebra I and Integrated I  2010/11 school year for Geometry and Integrated II  Class of 2013 shall be required to use EOCs to show they met standard  Class of 2014 shall be required to use EOCs to earn Certificate of Academic Achievement

<b>Lead Agency</b>	<b>Assignment</b>	<b>Due Date</b>
SBE	Sunset Math panel with their work completed on standards and curriculum reviews. (HB 1906)	6/30/12



# WASHINGTON STATE BOARD OF EDUCATION

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## Adoption of the Rule for Three High School Mathematics Credits

### SUMMARY OF POLICY ISSUE /State Board of Education (SBE) STRATEGIC PLAN GOAL:

The Board is considering the adoption of a rule to establish a third credit, or its equivalent, of high school mathematics and adding back the rule language on the High School and Beyond Plan from the previous rule. The third credit of math would be required beginning with the Class of 2013 (those students entering high school on or after July 1, 2009).

The three credits of mathematics are related to the Board's goals of improving student achievement for all students and improving student preparation for success in post secondary education, the 21<sup>st</sup> century world of work and citizenship.

### BACKGROUND

In 2007, the Washington State Legislature directed the Board to increase the high school math graduation requirements from two to three credits (equivalent to three years of high school level math) and to determine the content of the three credits.

Last fall and winter, the Board undertook a review of what the content of the third math credit should be with its consultant, Strategic Teaching, discussions with its Math Panel, and outreach to the public. Based on national research and the trends in other states, the Board determined that Algebra II or an equivalent should be the third math credit, to ensure that students are prepared for postsecondary education or work. Public feedback indicated that additional options to Algebra II should be considered for students who have a clearly defined career path where another kind of mathematics would be better suited to their goals after high school.

The Board directed staff to develop a draft rule for a third math credit, based on its definition of a meaningful high school diploma and guidance at the January meeting. At the March and May meetings, the Board took public comment and directed staff to address the issue of when a student's parents or guardians could participate in the meeting and sign off for the election of a third math credit other than Algebra II or the Career and Technical Education credit.

The Board wanted to wait until its July Board meeting to examine the full set of revised high school mathematics standards before adopting the rule for three credits of math.

Board staff has worked with the Washington State School Directors Association and the Professional Educator Standards Board on a survey to address implementation and teacher supply issues at the district level. While information is still coming in from school districts, we will share the initial results from the survey at the July Board meeting.

The current version of the rule inadvertently excluded the High School and Beyond Plan graduation requirements, which need to be included in the revised rules. The language has been included in the revised draft rule with the third math credit. Attached is copy of the rule for the third math credit, based on Board direction, and the High School and Beyond Plan.

We have also included the organizations that have taken official positions on Algebra II as the third math credit. Those organizations on record for supporting Algebra II or an equivalent as a third math credit include: the Washington Roundtable, the College and Work Ready Agenda, the Washington State PTA, the Association of Washington Business, and the Washington Work Force Coordination and Training Board. There will also be a binder at the meeting of all the letters/postcards that the Board has received on this topic.

### **POLICY CONSIDERATION**

This proposed rule will make the three credits or equivalencies of high school mathematics explicit in terms of content (Algebra I, Algebra II, and Geometry or an Integrated series that include these) that matches the new high school standards. In the current rule the two mathematics credits require that the credits align with the 9<sup>th</sup> and 10<sup>th</sup> grade level expectations without defining precisely that this includes course content for Algebra I and Geometry.

This proposed rule is the first time the Board has determined specific content as described in the new standards. A student will be expected to take courses (or competencies) to earn two credits in Algebra I and Geometry (or Integrated I and II) or an equivalent career and technical education course that meets those standards. For the third credit, a student will take Algebra II, Integrated III, or a career and technical education course that meets the standards OR the student may elect a third math course that based on a student's High School and Beyond Plan, provided that the student, his/her guardian, and a high school representative have a meeting to make such a determination and sign off on the elected third math credit as more appropriate for the student's education or career goals.

### **EXPECTED ACTION**

The Board may approve the rules amending the minimum subject areas for mathematics to include three credits of mathematics and inclusion of the High School and Beyond Plan requirement for graduation as outlined in WAC 180-51-060, 061 and 066.

AMENDATORY SECTION (Amending WSR 01-13-112, filed 6/20/01, effective 7/21/01)

**WAC 180-51-060 Minimum subject areas for high school graduation--Students entering the ninth grade before July 1, 2004.**

(1) The minimum subject areas and credits therein shall be:

SUBJECT		CREDIT
English		3
Mathematics		2
Science*		2
Social Studies		2 1/2
United States History and Government	(1)	
Washington State History and Government	(1/2)**	
Contemporary World History, Geography, and Problems	(1)**	
Occupational Education***		1
Physical Education		2
Restricted Elective	****	1
*At least one credit of the two science credits shall be in a laboratory science.		
**See WAC 180-51-075 for equivalencies.		
***"Occupational education" means credits resulting from a series of learning experiences designed to assist the student to acquire and demonstrate competency of skills under student learning goal four and which skills are required for success in current and emerging occupations. At a minimum, these competencies shall align with the definition of an exploratory course as proposed or adopted in the career and technical education program standards of the superintendent of public instruction.		
****This one credit requirement must be selected from visual or performing arts or any of the subject areas listed above.		
Electives		5 1/2
Total		19

(2) The minimum elective credits shall be met by additional courses in the required subject areas, by specific local district requirements, or by any course offered pursuant to WAC 180-50-115.

(3) In accordance with WAC 180-51-035, this section shall expire on June 30, 2014, for those students who begin the equivalent of a four-year high school program prior to July 1, 2004.

(4) The state board of education and superintendent of public instruction are not authorized by law to issue a high school diploma.

AMENDATORY SECTION (Amending WSR 07-07-051, filed 3/14/07, effective 4/14/07)

**WAC 180-51-061 Minimum requirements for high school graduation--Students entering the ninth grade as of July 1, 2004 through June 30, 2009.** (1) The statewide minimum subject areas and credits required for high school graduation(~~(, beginning July 1, 2004,)~~) for students who enter the ninth grade or begin the equivalent of a four-year high school program as of July 1, 2004, through June 30, 2009, shall total 19 as listed below.

(a) Three **English** credits (reading, writing, and communications) that at minimum align with grade level expectations for ninth and tenth grade, plus content that is determined by the district. Assessment shall include the (~~10th~~) tenth grade Washington assessment of student learning beginning 2008.

(b) Two **mathematics** credits that at minimum align with mathematics grade level expectations for ninth and tenth grade, plus content that is determined by the district. Assessment shall include the (~~10th~~) tenth grade Washington assessment of student learning beginning 2008.

(c) Two **science** credits (physical, life, and earth) that at minimum align with grade level expectations for ninth and tenth grade, plus content that is determined by the district. At least one credit in laboratory science is required which shall be defined locally. Assessment shall include the (~~10th~~) tenth grade Washington assessment of student learning beginning 2010.

(d) Two and one-half **social studies** credits that at minimum align with the state's essential academic learning requirements in civics, economics, geography, history, and social studies skills at grade ten and/or above plus content that is determined by the district. The assessment of achieved competence in this subject area is to be determined by the local district although state law requires districts to have "assessments or other strategies" in social studies at the high school level by 2008-09. In addition, districts shall require students to complete a classroom-based assessment in civics in the eleventh or twelfth grade also by 2008-09. The state superintendent's office has developed classroom-based assessment models for districts to use (RCW 28A.230.095). The social studies requirement shall consist of the following mandatory courses or equivalencies:

(i) One credit shall be required in United States history and government which shall include study of the Constitution of the United States. No other course content may be substituted as an equivalency for this requirement.

(ii) Under the provisions of RCW 28A.230.170 and 28A.230.090, one-half credit shall be required in Washington state history and government which shall include study of the Constitution of the state of Washington and is encouraged to include information on the culture, history, and government of the American Indian people who were the first inhabitants of the state.

(A) For purposes of the Washington state history and government requirement only, the term "secondary student" shall mean a student who is in one of the grades seven through twelve. If a district offers this course in the seventh or eighth grade, it can still count towards the state history and government graduation requirement. However, the course should only count as a high school credit if the academic level of the course exceeds the requirements for seventh and eighth grade classes and the course would qualify for high school credit, because the course is similar or equivalent to a course offered at a high school in the district as determined by the school district board of directors((=)) (RCW 28A.230.090(4)((=))).

(B) The study of the United States and Washington state Constitutions shall not be waived, but may be fulfilled through an alternative learning experience approved by the local school principal under written district policy.

(C) Secondary school students who have completed and passed a state history and government course of study in another state may have the Washington state history and government requirement waived by their principal. The study of the United States and Washington state Constitutions required under RCW 28A.230.170 shall not be waived, but may be fulfilled through an alternative learning experience approved by the school principal under a written district policy.

(D) After completion of the tenth grade and prior to commencement of the eleventh grade, eleventh and twelfth grade students who transfer from another state, and who have or will have earned two credits in social studies at graduation, may have the Washington state history requirement waived by their principal if without such a waiver they will not be able to graduate with their class.

(iii) One credit shall be required in contemporary world history, geography, and problems. Courses in economics, sociology, civics, political science, international relations, or related courses with emphasis on current problems may be accepted as equivalencies.

(e) Two **health and fitness** credits that at minimum align with current essential academic learning requirements at grade ten and/or above plus content that is determined by the local school district. The assessment of achieved competence in this subject area is to be determined by the local district although state law requires districts to have "assessments or other strategies" in health and fitness at the high school level by 2008-09. The state superintendent's office has developed classroom-based assessment models for districts to use (RCW 28A.230.095).

(i) The fitness portion of the requirement shall be met by

course work in fitness education. The content of fitness courses shall be determined locally under WAC 180-51-025. Suggested fitness course outlines shall be developed by the office of the superintendent of public instruction. Students may be excused from the physical portion of the fitness requirement under RCW 28A.230.050. Such excused students shall be required to substitute equivalency credits in accordance with policies of boards of directors of districts, including demonstration of the knowledge portion of the fitness requirement.

(ii) "Directed athletics" shall be interpreted to include community-based organized athletics.

(f) One **arts** credit that at minimum is aligned with current essential academic learning requirements at grade ten and/or above plus content that is determined by the local school district. The assessment of achieved competence in this subject area is to be determined by the local district although state law requires districts to have "assessments or other strategies" in arts at the high school level by 2008-09. The state superintendent's office has developed classroom-based assessment models for districts to use (RCW 28A.230.095). The essential content in this subject area may be satisfied in the visual or performing arts.

(g) One credit in **occupational education**. "Occupational education" means credits resulting from a series of learning experiences designed to assist the student to acquire and demonstrate competency of skills under student learning goal four and which skills are required for success in current and emerging occupations. At a minimum, these competencies shall align with the definition of an exploratory course as proposed or adopted in the career and technical education program standards of the office of the superintendent of public instruction. The assessment of achieved competence in this subject area is determined at the local district level.

(h) Five and one-half electives: Study in a world language other than English or study in a world culture may satisfy any or all of the required electives. The assessment of achieved competence in these subject areas is determined at the local district level.

(i) Each student shall complete a culminating project for graduation. The project shall consist of the student demonstrating both their learning competencies and preparations related to learning goals three and four. Each district shall define the process to implement this graduation requirement, including assessment criteria, in written district policy.

(j) Each student shall have a high school and beyond plan for their high school experience, including what they expect to do the year following graduation.

(k) Each student shall attain a certificate of academic achievement or certificate of individual achievement. The (~~10th~~) tenth grade Washington assessment of student learning and Washington alternate assessment system shall determine attainment.

(2) State board of education approved private schools under RCW 28A.305.130(5) may, but are not required to, align their

curriculums with the state learning goals under RCW 28A.150.210 or the essential academic learning requirements under RCW 28A.655.070.

NEW SECTION

**WAC 180-51-066 Minimum requirements for high school graduation--Students entering the ninth grade on or after July 1, 2009.** (1) The statewide minimum subject areas and credits required for high school graduation, beginning July 1, 2009, for students who enter the ninth grade or begin the equivalent of a four-year high school program, shall total 20 as listed below.

(a) Three **English** credits (reading, writing, and communications) that at minimum align with grade level expectations for ninth and tenth grade, plus content that is determined by the district. Assessment shall include the tenth grade Washington assessment of student learning beginning 2008.

(b) Three **mathematics** credits that align with the high school mathematics standards as developed and revised by the office of superintendent of public instruction and satisfy the requirements set forth below:

(i) Unless otherwise provided for in (b)(iii) of this subsection, the three mathematics credits required under this section must include mathematics courses taken in the following progressive sequence:

(A) Algebra I, geometry, and algebra II; or

(B) Integrated mathematics I, integrated mathematics II, and integrated mathematics III; or

(C) Any combination of three mathematics courses set forth in (b)(i)(A) and (B) of this subsection.

(ii) A student may elect to pursue a third credit of mathematics, other than algebra II or integrated mathematics III if all of the following requirements are met:

(A) The student has completed, for credit, mathematics courses in:

(I) Algebra I and geometry; or

(II) Integrated mathematics I and integrated mathematics II;

or

(III) Any combination of two mathematics courses set forth in (b)(ii)(A)(I) and (II) of this subsection;

(B) The student's elective choice is based on a career oriented program of study identified in the student's high school and beyond plan that is currently being pursued by the student;

(C) The student's parent(s)/guardian(s) (or designee for the student if a parent or guardian is unavailable) agree that the third credit of mathematics elected is a more appropriate course selection than algebra II or integrated mathematics III because it will better serve the student's education and career goals;

(D) A meeting is held with the student, the

parent(s)/guardian(s) (or designee for the student if a parent or guardian is unavailable), and a high school representative for the purpose of discussing the student's high school and beyond plan and advising the student of the requirements for credit bearing two and four year college level mathematics courses; and

(E) The school has the parent(s)/guardian(s) (or designee for the student if a parent or guardian is unavailable) sign a form acknowledging that the meeting with a high school representative has occurred, the information as required was discussed; and the parent(s)/guardian(s) (or designee for the student if a parent or guardian is unavailable) agree that the third credit of mathematics elected is a more appropriate course selection given the student's education and career goals.

(iii) Equivalent career and technical education (CTE) mathematics courses meeting the requirements set forth in RCW 28A.230.097 can be taken for credit instead of any of the mathematics courses set forth in (b) (i) (A) or (B) or (ii) (A) (I) or (II) of this subsection if the CTE mathematics courses are recorded on the student's transcript using the equivalent academic high school department designation and course title.

(c) Two **science** credits (physical, life, and earth) that at minimum align with grade level expectations for ninth and tenth grade, plus content that is determined by the district. At least one credit in laboratory science is required which shall be defined locally. Assessment shall include the tenth grade Washington assessment of student learning beginning 2010.

(d) Two and one-half **social studies** credits that at minimum align with the state's essential academic learning requirements in civics, economics, geography, history, and social studies skills at grade ten and/or above plus content that is determined by the district. The assessment of achieved competence in this subject area is to be determined by the local district although state law requires districts to have "assessments or other strategies" in social studies at the high school level by 2008-09. In addition, districts shall require students to complete a classroom-based assessment in civics in the eleventh or twelfth grade also by 2008-09. The state superintendent's office has developed classroom-based assessment models for districts to use (RCW 28A.230.095). The social studies requirement shall consist of the following mandatory courses or equivalencies:

(i) One credit shall be required in United States history and government which shall include study of the Constitution of the United States. No other course content may be substituted as an equivalency for this requirement.

(ii) Under the provisions of RCW 28A.230.170 and 28A.230.090, one-half credit shall be required in Washington state history and government which shall include study of the Constitution of the state of Washington and is encouraged to include information on the culture, history, and government of the American Indian people who were the first inhabitants of the state.

(A) For purposes of the Washington state history and government requirement only, the term "secondary student" shall

mean a student who is in one of the grades seven through twelve. If a district offers this course in the seventh or eighth grade, it can still count towards the state history and government graduation requirement. However, the course should only count as a high school credit if the academic level of the course exceeds the requirements for seventh and eighth grade classes and the course would qualify for high school credit, because the course is similar or equivalent to a course offered at a high school in the district as determined by the school district board of directors (RCW 28A.230.090(4)).

(B) The study of the United States and Washington state Constitutions shall not be waived, but may be fulfilled through an alternative learning experience approved by the local school principal under written district policy.

(C) Secondary school students who have completed and passed a state history and government course of study in another state may have the Washington state history and government requirement waived by their principal. The study of the United States and Washington state Constitutions required under RCW 28A.230.170 shall not be waived, but may be fulfilled through an alternative learning experience approved by the school principal under a written district policy.

(D) After completion of the tenth grade and prior to commencement of the eleventh grade, eleventh and twelfth grade students who transfer from another state, and who have or will have earned two credits in social studies at graduation, may have the Washington state history requirement waived by their principal if without such a waiver they will not be able to graduate with their class.

(iii) One credit shall be required in contemporary world history, geography, and problems. Courses in economics, sociology, civics, political science, international relations, or related courses with emphasis on current problems may be accepted as equivalencies.

(e) Two **health and fitness** credits that at minimum align with current essential academic learning requirements at grade ten and/or above plus content that is determined by the local school district. The assessment of achieved competence in this subject area is to be determined by the local district although state law requires districts to have "assessments or other strategies" in health and fitness at the high school level by 2008-09. The state superintendent's office has developed classroom-based assessment models for districts to use (RCW 28A.230.095).

(i) The fitness portion of the requirement shall be met by course work in fitness education. The content of fitness courses shall be determined locally under WAC 180-51-025. Suggested fitness course outlines shall be developed by the office of the superintendent of public instruction. Students may be excused from the physical portion of the fitness requirement under RCW 28A.230.050. Such excused students shall be required to substitute equivalency credits in accordance with policies of boards of directors of districts, including demonstration of the knowledge

portion of the fitness requirement.

(ii) "Directed athletics" shall be interpreted to include community-based organized athletics.

(f) One **arts** credit that at minimum is aligned with current essential academic learning requirements at grade ten and/or above plus content that is determined by the local school district. The assessment of achieved competence in this subject area is to be determined by the local district although state law requires districts to have "assessments or other strategies" in arts at the high school level by 2008-09. The state superintendent's office has developed classroom-based assessment models for districts to use (RCW 28A.230.095). The essential content in this subject area may be satisfied in the visual or performing arts.

(g) One credit in **occupational education**. "Occupational education" means credits resulting from a series of learning experiences designed to assist the student to acquire and demonstrate competency of skills under student learning goal four and which skills are required for success in current and emerging occupations. At a minimum, these competencies shall align with the definition of an exploratory course as proposed or adopted in the career and technical education program standards of the office of the superintendent of public instruction. The assessment of achieved competence in this subject area is determined at the local district level.

(h) Five and one-half electives: Study in a world language other than English or study in a world culture may satisfy any or all of the required electives. The assessment of achieved competence in these subject areas is determined at the local district level.

(i) Each student shall complete a culminating project for graduation. The project shall consist of the student demonstrating both their learning competencies and preparations related to learning goals three and four. Each district shall define the process to implement this graduation requirement, including assessment criteria, in written district policy.

(j) Each student shall have a high school and beyond plan for their high school experience, including what they expect to do the year following graduation.

(k) Each student shall attain a certificate of academic achievement or certificate of individual achievement. The tenth grade Washington assessment of student learning and Washington alternate assessment system shall determine attainment.

(2) State board of education approved private schools under RCW 28A.305.130(5) may, but are not required to, align their curriculums with the state learning goals under RCW 28A.150.210 or the essential academic learning requirements under RCW 28A.655.070.



STATE OF WASHINGTON  
WORKFORCE TRAINING AND EDUCATION COORDINATING BOARD

128 - 10th Avenue SW • PO Box 43105 • Olympia, WA 98504-3105

Phone: 360-753-5662 • Fax: 360-586-5862 • Web: [www.wtb.wa.gov](http://www.wtb.wa.gov) • E-mail: [wtecb@wtb.wa.gov](mailto:wtecb@wtb.wa.gov)

February 11, 2008

Mary Jean Ryan, Chair  
Washington State Board of Education  
PO Box 47200  
Olympia, WA 98504-7200

Dear Mary Jean,

As you know, the Workforce Training and Education Coordinating Board passed a resolution approving where you are headed in adopting a third year math credit rule. Enclosed is a copy of the Board's resolution. I know this has been a difficult issue to sort through. We appreciate the Board's sensitivity to the need to provide an option for students who are on a non-baccalaureate path to further education and training. Our Board believes this is a critical option for students that do not always thrive in a pure academic classroom.

Thanks for attending our Board meeting on January 31, 2008. You can tell our Board is very engaged in this issue and we hope we can be of help in working on the details of the rule you eventually adopt.

We look forward to a continued good working relationship.

Sincerely,

Eleni Papadakis  
Executive Director

cc: Edie Harding  
David Harrison

State Board of Education

Enclosure

FEB 13 2008

Received





# Aberdeen School District

*Our Children,  
Our Schools,  
Our Future*

216 North G Street  
Aberdeen, WA 98520  
**(360) 538-2000**  
FAX (360) 538-2014  
www.asd5.org

**Martin W. Kay**  
*Superintendent*  
360-538-2006

**Tom Laufmann**  
*Business/Support*  
360-538-2007

**Anna C. Shanks**  
*Personnel*  
360-538-2004

**Shawn Dickson**  
*Special Services*  
360-538-2017

**Tita Mallory**  
*Curriculum/Instruction*  
360-538-2123

February 6, 2008

State Board of Education  
c/o Edie Harding, Executive Director  
PO Box 47206  
Olympia WA 98504-7206

RE: Math Graduation Requirements

Dear State Board of Education Members:

Attached please find Aberdeen School Board Resolution 2008-01 adopted at their meeting on February 5, 2008.

The purpose of this resolution is to urge the State Board of Education to insure that a comprehensive K-12 math system is in place to support all children. Further that local school boards receive sufficient latitude to provide curriculum with comparable content to Algebra II so that the requirement may be satisfied with courses that meet the needs of a wide range of students.

On behalf of the Aberdeen School Board of Directors we request that you give this matter serious consideration. Should you have questions, we are available and would be pleased to discuss this further.

Sincerely,

Martin W. Kay  
Superintendent

Doug Smith  
Board President

C: Board of Directors

Enclosure

State Board of Education

FEB 08 2008

Received

*This District is an Equal  
Opportunity Employer*

**Aberdeen School District No. 5**  
**Resolution No. 2008-01**

*A Resolution supporting the crucial role of local school boards and local control of math curricula that best meets the needs of individual students in their communities.*

WHEREAS, the 2007 Legislature passed 2SHB 1906 which directs the State Board of Education to include a minimum of three credits of mathematics, and

WHEREAS, the State Board of Education has directed its staff to prepare a rule by which students have two options of fulfilling the third credit of math:

- 1) A student could complete a third credit of math in Algebra II that meets the new math content standards identified by the Office of Superintendent of Public Instruction, and Career and Technical Education course work could satisfy this requirement if the course of study had comparable content to Algebra II, or
- 2) A student, with the approval of his or her high school counselor or school administrator, and parent/guardian, could elect to replace the Algebra II requirement with a third math credit that furthers an approved program of study that leads to a specific career goal, and

WHEREAS, the Aberdeen School District Board of Directors has a responsibility to advocate for meeting the needs of all students, including preparing students for a wide variety of post secondary educational options, and

WHEREAS, the Board of Directors recognizes the relationship between high skills and high wages and the need for all students to think rigorously about mathematics in order to compete in the 21<sup>st</sup> Century economy, and

WHEREAS, the Board of Directors supports high school education requirements that recognize the importance of education that is personalized to the individual student's educational and career goals, and

WHEREAS, improving student achievement and increasing rigor in mathematics is more complex and much larger than any individual math course, and

WHEREAS, improving K-12 mathematics education is essential to the future success of each student, and must include on-going support for:

- 1) High quality, ongoing, job embedded, professional development with the goal of developing students, teachers and instructional leaders who think conceptually and mathematically, and
- 2) Standards, Materials and Assessments that are aligned, communicated and understood by educators, parents and community members, and
- 3) Diagnostic tools and intervention plans that reflect researched based best practices, and

Resolution 2008-01

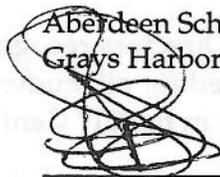
WHEREAS, without a comprehensive K-12 mathematics support system, increasing the requirements in math may act as a gatekeeper, denying future opportunities to many students through no fault of their own, now

THEREFORE BE IT RESOLVED that the Board of Directors of the Aberdeen School District No. 5 supports the development of a comprehensive math system that requires all students to complete a third credit in math beyond the level of Algebra I, provided that local school boards are given sufficient latitude in defining "comparable content to Algebra II" so that the requirement may be satisfied with courses that meet the needs of a wide range of students, and

FURTHER BE IT RESOLVED by the Board of Directors of Aberdeen School District No. 5, that the State should not implement this requirement without first ensuring that a full-funded, comprehensive K-12 mathematics support system is in place that will enable all students to be successful in meeting the new math graduation requirement.

The undersigned certifies that the foregoing resolution was adopted at a duly convened meeting of the Board of Directors of Aberdeen School District No. 5 on the 5th day of February, 2008 of which due notice was given in the manner provided by law with the following directors being present and voting.

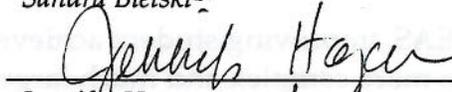
Aberdeen School District No. 5  
Grays Harbor County, Washington



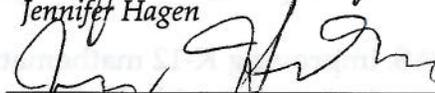
Doug Smith, President



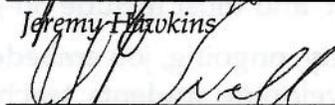
Sandra Bielski



Jennifer Hagen

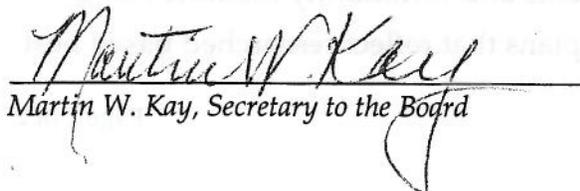


Jeremy Hawkins



Jeff Snell

Attest:



Martin W. Kay, Secretary to the Board

to Edie

# S B C T C

WASHINGTON STATE BOARD FOR  
COMMUNITY & TECHNICAL COLLEGES

December 19, 2007

Ms. Mary Jean Ryan  
Chair, State Board of Education  
PO Box 47206  
600 Washington St. SE Rm. 253  
Olympia, WA 98504-7206

Dear Mary Jean:

At a special meeting on December 19, the State Board for Community and Technical Colleges addressed the enclosed resolution regarding the third credit of high school math. The resolution reflects the two-year college Board's recommendation that the State Board of Education set a rigorous standard that accommodates the need for multiple forms of curriculum.

Please let us know if you would like to discuss this further. An option would be to have someone attend one of your public meetings to engage the entire Education Board. We very much appreciate your consideration.

Thank you.

Sincerely,



Charles N. Earl  
Executive Director

Enclosure

cc: Terry Bergeson, OSPI  
Eleni Papadakis, WTECB  
Ann Daley, HECB

State Board of Education

JAN 28 2008

Received

**STATE OF WASHINGTON**  
**STATE BOARD FOR COMMUNITY AND TECHNICAL COLLEGES**  
**RESOLUTION 07-12-41**

A resolution relating to proposed definitions of the mathematics credits required for high school graduation.

**WHEREAS**, the 2007 Legislature passed 2SHB-1906 which directs the State Board of Education to amend high school graduation requirements to include a minimum of three credits of mathematics, one of which may be a career and technical course equivalent in mathematics, and describe the required content; and

**WHEREAS**, the State Board for Community and Technical Colleges continues to address issues of students success through the Transition Math Project in an effort to reduce remedial math course-taking among recent high school graduates entering community and technical colleges; and

**WHEREAS**, community and technical college academic programs, high-wage workforce programs, and most medium-wage workforce programs require Algebra II skills for entry or completion; and

**WHEREAS**, the State Board for Community and Technical Colleges strongly supports a diversity of pathways and options for students entering colleges in the system, including opportunities to learn mathematics in applied and career-related contexts,

**THEREFORE BE IT RESOLVED** that the State Board for Community and Technical Colleges recommends to the State Board of Education that the third credit of math to be required for high school graduation be aligned with Algebra II-level concepts and skills, and for high school career and technical programs develop courses which include practical math applications reflecting those concepts and skills.

**APPROVED AND ADOPTED** on December 19, 2007.

\_\_\_\_\_  
Erin Munding, Chair

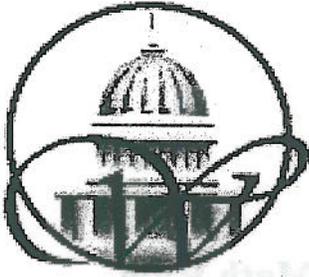
**ATTEST:**

\_\_\_\_\_  
Charles N. Earl, Secretary

State Board of Education

JAN 28 2008

Received



## ADOPTED WORKFORCE BOARD MOTION

**WHEREAS**, The 2007 Legislature passed 2SHB 1906 which directs the State Board of Education to amend high school graduation requirements to include a minimum of three credits of mathematics, one of which may be a career and technical course equivalent in mathematics, and prescribe the required content;

**WHEREAS**, The State Board of Education had directed its staff to prepare a rule by which students will have two options for fulfilling the third credit in math:

- 1) A student could complete a third credit of math in Algebra II that meets the new math content standards identified by the Office of Superintendent of Public Instruction, and Career and Technical Education course work could satisfy this requirement if the course of study had comparable content to Algebra II.
- 2) A student, with the approval of his or her high school counselor and parent/guardian, could elect to replace the Algebra II requirement with a third math credit that furthers an approved program of study that leads to a specific career goal.

**WHEREAS**, The Workforce Training and Education Coordinating Board has a statutory responsibility to advocate for meeting the needs of students, workers, and employers for jobs that do not require a baccalaureate degree;

**WHEREAS**, The Workforce Training and Education Coordinating Board supports high school education requirements that recognize the importance of education that is personalized to individual student career and education goals, including access to career and technical education; and,

**WHEREAS**, In order to graduate from high school students must complete a high school and beyond plan that includes the student's goal for the year after high school graduation and the course work during high school that will enable the student to achieve that goal.

**NOW THEREFORE BE IT RESOLVED**, That the Workforce Training and Education Coordinating Board supports the direction of the State Board of Education on January 10, 2008 regarding the third credit of math required for high school graduation.



## **Workforce Board Testimony on Third-Year Math Rule State Board of Education Meeting, March 25, 2008**

- On January, 31, 2008, the Workforce Board passed a resolution supporting the direction the State Board of Education established at its January meeting regarding the third credit of math required for high school graduation (see reverse side of this testimony).
- The Workforce Board appreciates the efforts of the State Board of Education to draft a resolution on the third-year math requirement that acknowledges the concerns of the Workforce Board and accommodates individual student career and education goals.
- The current language for the third-year math rule is improved in that it aligns the election for pursuing a third year of math other than Algebra II with a career oriented program of study identified in the student's high school and beyond plan. The Workforce Board is very supportive of individual career planning. Such planning provides relevance and meaning for students as they navigate their secondary high school coursework.
- While there is some concern among individual members on our Board with the specific requirement that students be affirmatively advised of the mathematics requirement for only two and four year college coursework, we support adoption of the third-year rule essentially as written.

### THIRD CREDIT OF MATH GRADUATION REQUIREMENT

Whereas, The 2007 Legislature passed 2SHB-1906 which directs the State Board of Education to amend high school graduation requirements to include a minimum of three credits of mathematics, one of which may be a career and technical course equivalent in mathematics, and describe the required content; and

Whereas, All four year colleges require students to complete Algebra II for admission; and

Whereas, Community and technical college academic programs, high-wage workforce programs, and most medium-wage workforce programs require Algebra II skills for entry or completion; now, therefore be it

*Resolved*, That the Washington State PTA recommends to the State Board of Education that the third credit of math shall be required for high school graduation; and be it further

*Resolved*, That the third credit of math be aligned with Algebra II level concepts and skills; and be it further

*Resolved*, That career and technical education courses with mathematics content equivalent to Algebra II also satisfy the third credit of math requirement; and be it further

*Resolved*, That students have the opportunity to substitute another high school math course for Algebra II, when that choice aligns with their high school and beyond plan and is consistent with guidance from the students' parents or guardians.

Washington State PTA motion



## WASHINGTON STATE BOARD OF EDUCATION

OLD CAPITOL BUILDING • ROOM 253 • P.O. Box 47206 • 600 S.E. WASHINGTON • OLYMPIA, WA 98504-7206

### **Overview of K-12 Funding: Current Picture of State and Local Funding for K-12 and Review of Comprehensive Proposals to Basic Education Finance Task Force**

#### **SUMMARY OF POLICY ISSUE /STATE BOARD OF EDUCATION (SBE) STRATEGIC PLAN GOAL:**

Although only the Legislature can appropriate funds for K-12 education in Washington, the Board may advocate for all of the Board's strategic plan goals in various forums and at different times.

#### **BACKGROUND**

The 2007 Legislature created a Joint Task Force on Basic Education Finance (JTFBEF) to "review the definition of basic education and all current basic education funding formulas" (SB 5627). The Task Force is to "develop options for a new funding structure and all the necessary formulas, and propose a new definition of basic education." The Task Force will complete its work by December 1, 2008.

Jennifer Priddy, Assistant Superintendent of Financial Resources in the Office of Superintendent of Public Instruction (OSPI), has recently presented to the JTFBEF and the Appropriations Subcommittee on Education about the current funding of K-12 education in Washington and has also provided information about how potential changes in funding may affect school districts. She will present some of the same information to the Board and then be available to answer questions.

During the last few meetings, agencies and groups have presented their ideas for a new funding structure to the Task Force. The included spreadsheet summarizes the three most comprehensive proposals presented during the Task Force's meetings on June 9 and 10, 2008. The full proposals and accompanying PowerPoint presentations can be viewed on the Task Force's Web page (<http://www.leg.wa.gov/Joint/Committees/BEF/>) by following the link to the June 9-10 meeting under the "Task Force Meetings and Materials" subheading.

Brad Burnham, staff to the Board, will present the summary spreadsheet to the Board. Representatives from the Full Funding Coalition, the League of Education Voters, and the Office of Superintendent of Public Instruction will provide short presentations about their proposals to the Board and will be available to answer questions.

# Summary of Some Funding Proposals Presented to the Basic Education Finance Joint Task Force

Please also refer to the original documents used to compile this summary, which can be found on the Task Force Meetings and Materials Web page ([http://www.leg.wa.gov/joint/committees/bef/task\\_force\\_meetings.htm](http://www.leg.wa.gov/joint/committees/bef/task_force_meetings.htm)).

Component of proposals	OSPI proposal	League of Education Voters proposal	Full Funding Coalition proposal
<b>Basic Education Definition</b>	Proposes that most components of system defined as Basic Education are inadequately funded. Expansions of programmatic inclusion to the current definition are for full-day kindergarten, incorporate I-728, and fund a six period day. Includes an approach that is a comprehensive replacement to current funding system with three core elements: 1. Enhancing support for educators; 2. Enhancing student support systems; and 3. Fully funding school operating costs. Any new funding would be defined as Basic Education.	Provide every student reasonable opportunities to meet the state's achievement standards and high school graduation requirements. New definition of basic education would include quality pre-kindergarten for low income children and one year of post secondary education.	Redefined to include all expectations, goals, requirements, practices, and policies included in state and federal legislation, rules, and regulations. State's definition of basic education would be updated and adjusted annually. The 2007 Washington Adequacy Funding study outlines adequate funding levels through defining the resources required to operate prototype schools.
<b>Educator Compensation</b>	New salary schedule with larger salary increases for more years of experience and higher maximum salaries overall. Larger salary increases as teachers obtain new certificates/designations: Professional Certification and Leader Certification. (I-732 is maintained and drives COLAs and salary allocations are equalized across districts.)	Develop and pilot new salary schedule with three levels of responsibility: entry, professional, and lead. Conduct compensation survey to make teaching more competitive with comparable professions. Three-year rolling, renewable contracts for teachers and principals. Because it holds the responsibility for funding basic education, the state would bargain compensation. Local bargaining over working conditions and other contractual issues would be maintained.	Instructional staff salaries to be based on a Comparable Wage Index measured against comparable professions by labor market. Increase compensation of all K-12 staff three percent above I-732 COLA the first year of implementation and by 2% the following year to begin phased implementation to comparable wage salary levels.

Component of proposals	OSPI proposal	League of Education Voters proposal	Full Funding Coalition proposal
<b>Educator Support</b>	Mentoring in the first two years of teaching. Also, eight more paid days for professional development that is research-based; address key areas of shortage (math, science, special education, ELL).	State would design and implement a rigorous teacher induction program. Experienced mentors would guide novice teachers. Strong programs to evaluate and support new and struggling teachers. Probationary period for new teachers extended to five years.	Fund instructional improvement coaches and add time and resource for significant, relevant professional development. Special education teachers receive additional support.
<b>Student Support</b>	Increasing staff ratios for nurses, counselors, and librarians by to specific levels. Increased funding for Navigation 101 and graduation advisors. Struggling student resources funded according to need and based on proven programs such as small group tutoring, instructional materials, and targeted professional development. ELL component similar to struggling students with added support for interpreters, community outreach, also with more intensive resources as poverty increases and students are older.	Targeted Interventions Fund adds further class size reductions in K-1, one-on-one tutoring in K-3 and monitors for students at risk of dropping out of high school. Districts have flexibility to strategically lower class sizes and increase student supports with Core K-12 Education funds and local levy dollars.	Continue full-day Kindergarten implementation, and fund outreach coordinators. Additional funding for high-need student populations including students in poverty, English Language Learners (ELLs), struggling students and special education students. Skills Center, libraries, technology and student behavioral support programs funded, as well.
<b>Class Sizes</b>	Reduce class sizes over time to national average (grades K to 3- 20; 4 to 5- 22; 6 to 12- 25, with lower assumptions for CTE). Assumes 6 periods per day.	State funds lower K-3 class sizes in the K-12 Resource Model.	Reduce class size grades K-3 to 1:17.
<b>Classified Staff</b>	Break classified staffing into common-sense categories. Equalize salary allocations across districts, then allocate salaries based on state-employee salary levels (e.g., maintenance workers in state system drive K-12 salary allocation). Improve staffing ratio to provide one classified staff per 39.8 students.	Classified staffing levels built into the K-12 Resource Model	Increase classified staff allocations to provide one classified staff per 54.8 students. State would fund classified staff ratios and salaries in seven classifications such as aides, office/clerical, and technical.

Component of proposals	OSPI proposal	League of Education Voters proposal	Full Funding Coalition proposal
<b>School Operations Support</b>	Fund school district operating costs at \$1,383 per student (current is \$469 per student). Funds the basic costs that district incur (utilities/insurance); provides improved access to technology and a lap top for each high school student; improves curriculum adoption cycle from 18 to 6 years.	Non-employee related costs would be swept into the basic Core K–12 Education Fund.	Starting in 2009-11, Non-Employee Related Costs (NERC) increases phased-in to ease dependence on levies and fund campus security for middle and high schools. After 2009-11, adequate funding for all components of NERC expenditures are determined by prototype schools in the Washington Adequacy Funding (WAF) study.
<b>Accountability</b>	Accountability system and appropriate support to be informed by upcoming SBE recommendations.	Overhaul K-12 chart of accounts and accounting system. Build an integrated P–20 Data System to track student progress and hold stakeholders accountable for results. Require districts to establish spending and achievement targets. State funds school-based performance awards and deploys external inspectors to schools that are chronic underperformers.	Two way accountability between districts and state. Funding and accountability connected with performance expectations of schools. Schools held accountable in relation to characteristics and a multi-dimensional benchmarking system (currently available). School district flexibility in spending as continue to meet (or exceed) established performance benchmarks. Levy expenditures accounted for as separate program similar to federal programs and the Student Achievement Fund (I-728).
<b>Administrative Oversight</b>		A new K–12 Expenditure Forecast Council (modeled on the Economic Forecast and Caseload Forecast councils) would produce a comprehensive five-year forecast of the state, local, and federal resources required to maintain the existing K–12 service level. To increase transparency and shed light on budget alternatives, the Council would build and maintain a K-12 Resource Model, modeled after Oregon's Quality Education Model	Washington Adequacy Funding study to guide initial 2009-11 biennium investments. New Commission for Quality Education in Washington would develop a Quality Education Model (QEM) to determine needed resources and determine expected levels of accountability for districts. CQEW costing determinations advisory to legislature. Legislature would acknowledge effect on accountability requirements if funding less.

Component of proposals	OSPI proposal	League of Education Voters proposal	Full Funding Coalition proposal
<b>Revenue Sources</b>			State would re-establish a higher state collected property tax rate for schools. In addition, a portion of any general state revenue increases beyond a threshold amount would be transferred to a Basic Education improvement fund.
<b>Formula Components</b>	Continue simple allocations from state to districts in current formula categories (add I-728 into basic education for 6 main formulas). Assumptions that drive allocations are defined by Legislature with background documents (LEAP documents) based on common sense categories. Legislative assumptions for staffing are based on class size and workload by grade band: K-5, 6-8, 9-12.	New budget development process. Consolidate categorical programs into a new Core K-12 Education Fund. New allocation model with more flexibility for school districts. Weighted student funding for four categories of students: free/reduced lunch eligible, special education, English language learning, and career and technical education. In addition, a new targeted interventions fund for research-proven gold standard programs. Local levies restored to their intended use of funding enhancements	Shift of focus from inputs to outcomes with six formula: 1. A Foundation Formula (weighted pupil funding formula that combines the current funding for education of regular students, Special Education, Transitional Bilingual, Career and Technical Education, Learning Assistance Program, and Student Achievement Program); 2. Special Education Safety Net; 3. Small School District Factors; 4. Pupil Transportation; 5. Skills Centers; and 6. Institutions.
<b>Implementation</b>	Phase-in additional state financial support over the next six to ten years	Policy makers need to work in collaboration with teachers to develop new compensation system. New system needs to be phased in, initially allowing districts to opt in. Current teachers would be held harmless.	Six-year phased implementation plan



# WASHINGTON STATE BOARD OF EDUCATION

OLD CAPITOL BUILDING • ROOM 253 • P.O. Box 47206 • 600 S.E. WASHINGTON • OLYMPIA, WA 98504-7206

## System Performance Accountability Update

### SUMMARY OF POLICY ISSUE /State Board of Education (SBE) STRATEGIC PLAN

#### GOAL:

The Board will hear presentations from its consultants on the final report of the policy barriers study and state/local partnerships for improving Priority Schools (chronically underperforming schools) as part of the Board's work on system performance accountability.

This work is related to the Board's goal of improving achievement for all students.

#### BACKGROUND

The legislature has charged the Board with developing a statewide accountability system. The Board has focused on three initial areas to accomplish that work: 1) an accountability index that identifies schools by tiers in need of assistance, as well as those who are performing very well; 2) a study to understand the potential state and local policy barriers in Washington that may affect student achievement; and 3) the creation of state/local partnership to turnaround schools that are identified through the accountability index in need of additional resources and focus. The Board plans to consider recommendations for addressing the criteria, steps, and resources needed to address partnerships with Priority Schools at its September Board meeting for the 2009 legislative session.

The Board hired the Northwest Regional Educational Lab (NWREL) to conduct a macro systems report using a literature review and interviews with a sample of policy makers and key stakeholders and practitioners with a focus on Washington. The findings from the policy barriers study will be used in the work done to strengthen state/local partnerships to improve the performance of Priority Schools in Washington. The Board hired Mass Insight to work with a Washington team of educators to develop a suggested partnership strategy to address the turnaround efforts needed for Priority Schools.

The Board has done some preliminary outreach on accountability issues during its June outreach sessions and online survey. The information will be shared with the Board at its July meeting.

On June 19, the Board held a work session on the draft policy barriers report and the preliminary ideas for state/local partnerships.

The final report from NWREL, on its policy barriers study, is attached for your review. An update report from Mass Insight on its work developing preliminary concepts for state/local partnerships for Priority Schools is also attached. Consultants from both firms will present to the Board during the July meeting.

### **POLICY CONSIDERATION**

The Board will need to consider the findings from the NWREL policy barriers study as it proceeds with its work with Mass Insight on creating partnerships between the state and local districts on Priority Schools. Highlights from the Policy Barriers draft report included: lack of state program coherence; lack of state funding and sustainability of funding; lack of operating flexibility (e.g. personnel management and targeting resource effectively); lack of coherent system support for entry, retention, and recruitment of quality staff; and lack of time for professional development and teacher collaboration.

Mass Insight's work focuses on the need for a mutual responsibility of the state and local districts to create something stronger than current improvement efforts for Priority Schools. Under consideration is an Innovation Zone, which would enable districts to volunteer to participate in the Zone and meet the criteria identified with additional resources, or opt out and meet performance goals of their own. A timeline with expectations and consequences, as well as roles and responsibilities from the state (including the Board's role) and locals will be discussed.

### **EXPECTED ACTION**

None

Washington State Board of Education

**STUDY OF STATE AND LOCAL  
BARRIERS TO RAISING  
ACHIEVEMENT DRAMATICALLY  
FOR ALL STUDENTS**

**FINAL REPORT**



July 2008



## **Washington State Board of Education**

# **STUDY OF STATE AND LOCAL BARRIERS TO RAISING ACHIEVEMENT DRAMATICALLY FOR ALL STUDENTS**

## **Final Report**

Dr. Roy Kruger  
Dr. Annie Woo  
Dr. Bruce Miller  
Ms. Deborah Davis  
Dr. Robert Rayborn

July 2008

Evaluation Program  
Center for Research, Evaluation, and Assessment  
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# EXECUTIVE SUMMARY

## Introduction

The Washington State Board of Education (SBE) contracted with the Northwest Regional Educational Laboratory (NWREL) to conduct a study of the salient policies and procedures that created barriers to improving student achievement for struggling schools in Washington.

The SBE is tasked by the state legislature with creating a statewide accountability system that enables the state to target resources in radically different ways. The state law requires the SBE to adopt criteria to identify schools and districts that are successful, in need of assistance, and those where students persistently do not meet the state's standards. The SBE seeks new ways to make a difference, particularly in districts with schools that consistently underperform. The research is replete with information regarding factors that have been shown to be positively related to improvements in student achievement. What has been lacking is information regarding which Washington state policies and practices are perceived as barriers by districts and schools who are seeking to make transformational changes in areas such as school management and classroom instruction that will help students achieve at considerably higher levels.

The purpose of this study was to learn about the perceived barriers from the perspectives of different education stakeholders. The study focused specifically on obtaining the professional insights and perceptions of policymakers and policy implementers regarding district practices and the policy environment in which districts are implementing school improvement efforts (e.g., collective bargaining agreements, human resource policies and practices,

allocation of funding and other resources among schools within a district, local and state school boards and other district policies).

This study provides a systems approach to the perceived policy barriers that need to be addressed as the SBE moves ahead with its efforts to help the state's priority schools dramatically improve student achievement. The scope of the study focused data collection on the perceptions and professional judgments of Washington state's key policy makers and shapers, and school personnel. The findings of this study are both informed by and limited by the scope.

## Methodology

NWREL staff members first conducted a systematic review of the current research literature to identify a list of policies and procedures that researchers have found to be salient barriers to increasing student achievement. This list of 16 barriers was incorporated into the protocols used during the data gathering phase of the study, which consisted of telephone interviews with key education stakeholders and onsite focus groups and interviews with staff members representing seven school districts around the state. District staff members, who were interviewed, included teachers, principals, and central office administrators.

The focus on the key education stakeholder interviews was to confirm that specific policies and procedures were in fact barriers for Washington districts and schools, and to determine the extent to which either the state or district had the ability to eliminate those barriers. Thirty-four key stakeholders, selected from the legislature and organizations such as the Office of

Superintendent (OSPI), Office of Financial Management (OFM), Washington Education Association (WEA), the Association of School Principals (AWSP), the Washington Association of School Administrators (WASA), and the Washington State School Directors Association (WSSDA), participated in the interviews. NWREL staff members conducted onsite visits to the following seven school districts: Everett, Moses Lake, Seattle, Sedro-Woolley, Shelton, Vancouver, and Yakima. These districts were selected because of their high percentages of minority students, level of student performance on the WASL and AYP, and range of student enrollment and staff size (high, medium, and low).

## Findings

Consistent and divergent barrier perceptions held by the different participant groups (key stakeholders, teachers, principals, and district staff members) are presented in the findings section of this report. The 16 barriers are presented in a Barrier Impact Prioritization Matrices, which arranges these policies and procedures in order of their perceived impact on student achievement (high, medium, or low) and the ability to eliminate the barrier (high, medium, or low).

Based on the findings from the study, all of the identified barriers should be addressed on some selected priority order. The following four barriers were of particular note because they were widely recognized as having potential impact on student achievement if removed, and within the state's ability to remove them.

- 1) Insufficient and impermanent resources
- 2) Time for professional development and teacher collaboration
- 3) Need for operating flexibility
- 4) Coherent systems that support the entry, development, and retention of quality staff members

Policy-related findings were identified, and included the need for greater intrastate educational agency coordination resulting in enhanced program coherence, and stability of funding for school improvement. Also noted was the need for the state to structure funding so that it is targeted to reach underperforming schools or schools serving greater-needs student populations.

Significant differences between different district and school personnel groups were reported, especially around the issues of class size, the use of differential pay as incentives, the degree to which the removal of some collective bargaining agreement provisions could positively impact student achievement, and the value of National Board teacher certification.

All of the barriers examined were judged as removable by state policymaker stakeholders. This judgment was offered after they acknowledged the difficulty in the removal of the barriers. Almost all of the barriers were judged to require a joint effort between the state and the district/schools, with the primary role being played by the state.

## Implications

The state of Washington may wish to:

1. Coordinate the efforts of the various state educational agencies and policy-making bodies to increase program coordination and the perception of program coherence when viewed from the district and building level
2. Develop and maintain a stable funding source for school improvement that educators can count on over time
3. Establish and provide additional time – allowing teaching staff and administrators the opportunity to focus on student achievement through collaboration and professional development
4. Find ways to remove or moderate restrictive provisions of the collective bargaining agreement in a manner that strengthens building teams and provides adequate teacher participation in critical decisions

Findings and themes for consideration are presented in the spirit of collaboration, recognizing that dramatically increasing student achievement is very hard work and will require the joint efforts of many partners. This study should place Washington state in a strong position for developing a statewide accountability framework for a new partnership between the state and local districts, and help districts and schools make transformational changes to assure that student achievement is dramatically increased.

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## INTRODUCTION

In March 2008, the Washington State Board of Education (SBE) contracted with the Northwest Regional Educational Laboratory (NWREL) to conduct a study of the salient policies and procedures that created barriers to improving student achievement for struggling schools in Washington. During April-May 2008, NWREL staff members verified the extent to which national, regional, and local barriers cited in the latest research literature were also problematic for Washington schools through a series of telephone interviews with representatives from governmental, educational, and community agencies and onsite visits to seven school districts across the state.

The SBE is tasked by the state legislature with creating a statewide accountability system that enables the state to target resources in radically different ways. The state law requires the SBE to adopt criteria to identify schools and districts that are successful, in need of assistance, and those where students persistently do not meet the state's standards. The SBE seeks new ways to make a difference, particularly in districts with schools that consistently underperform. The research is replete with information regarding factors shown to be positively related to improvements in student achievement. What has been lacking is information regarding which Washington state policies and practices are perceived as barriers to districts and schools seeking to make transformational changes in areas such as school management and classroom instruction that will help students achieve at considerably higher levels.

The purpose of this study commissioned by the SBE was to learn about the perceived barriers from the perspectives of different education stakeholders including members of legislature, educational agencies and

associations, university faculty, business groups, and nonprofit partners, as well as district and building school personnel.

The scope of the study focused specifically on obtaining the professional insights and perceptions of policymakers and policy implementers regarding district/school practices and the policy environment in which efforts to implement school improvement occur (e.g., collective bargaining agreements, human resource policies and practices, allocation of funding and other resources among schools within a district, local and state school board and other district policies).

The report findings are limited to the accuracy reflected in the cumulative professional judgment and perceptions of the key stakeholder and educational practitioner groups who participated in the Barrier Study.

In addition, the findings of the study are used to inform suggested revisions to the Washington Administrative Code (WAC) 180-16-220 regarding school improvement plans.

NWREL staff members first conducted a systematic review of the current research literature to identify a list of policies and procedures that researchers have found to be salient barriers to increasing student achievement. This list of 16 barriers was incorporated into the protocols used during the data gathering phase of the study, which consisted of telephone interviews with key education stakeholders and onsite focus groups and interviews with staffs representing seven school districts around the state.

The focus of the key education stakeholder interviews was to confirm that specific policies and procedures were in fact barriers for Washington districts and schools, and the extent to which either the state or district had the ability to eliminate those barriers. Thirty-four key stakeholders, selected from the legislature and organizations such as the Office of Superintendent (OSPI), Office of Financial Management (OFM), Washington Education Association (WEA), the Association of School Principals (AWSP), the Washington Association of School Administrators (WASA), and the Washington State School Directors Association (WSSDA), participated in the interviews.

During the same two-month timeframe, NWREL staff conducted onsite visits to the following seven school districts: Seattle, Vancouver, Everett, Yakima, Moses Lake, Sedro-Woolley, and Shelton.

These districts were selected because of their high percentages of minority students, student performance on the WASL and AYP, and range of student enrollment and staff sizes (high, medium, and low). As a group, these districts account for just over 11 percent of the state's students and staff members. Focus groups and interviews were conducted with a sample of teachers, principals, and district staff members who were asked about their perceptions of the impact of specific barriers on student achievement.

Consistent and divergent barrier perceptions held by the different participant groups (key stakeholders, teachers, principals, and district staff) are presented in the findings section of this report. The 16 barriers are presented in a Barrier Impact Prioritization Matrices which arranges these policies and procedures in order of their perceived impact on student achievement (high, medium, or low) and the ability to eliminate the barrier (high, medium, or low).

# METHODOLOGY

## Literature Review

In this literature review, we identified barriers to student achievement at the state and local levels and sought to answer the question: What constrains schools and districts from improving student achievement, especially for the traditionally underperforming students? Because of the breadth of research, we narrowed results by identifying common themes or patterns which could be acted upon. We began our study using the University of Washington's School for Public Affairs 2008 report, *Performance Pressure and Resource Allocation in Washington* (De Wys, Bowen, Demeritt, & Adams, 2008) because of its current focus on Washington educators. In reporting the research, we used several terms to describe the strength of the evidence. "Strong evidence" is defined as findings from experimental research using random assignment (causal). "Weak evidence" describes non-causal research (correlational and descriptive) that converges around common findings.

De Wys, et al., (2008) conducted a cross-sectional study of Washington school districts that represented 1) a heavily Hispanic rural district performing better than predicted, 2) two innovative urban districts using decentralized decision-making, 3) a high-performing wealthy suburban district, 4) a matched high-performing district beating the odds academically, and 5) a matched low-performing district not beating the odds. The research team conducted interviews with board chairs, district superintendents and administrators, human resources, finance, and academic/curriculum officers, teachers, union representatives, and two to six principals per district. Interviews were supplemented by an analysis of policy

documents, court decisions, newspaper articles, and researcher studies.

General themes emerging from this study were used as an initial framework for searching the educational literature and identifying research for analysis, while remaining open to the emergence of new themes. We collected studies covering a wide range of potential policy barriers and grouped them thematically into five categories. Themes are presented in the following sections.

### **1. Assistance for school and district improvement designed to bring all students to standard, but especially those underperforming students from struggling schools**

Rapidly changing demographics have placed great stress on educators. These demographic changes can be seen in the influx of English language learners speaking multiple languages, school-age children from immigrant families, families in poverty, and in the achievement gap between these groups and the dominant population. Moreover, the general population is increasingly getting older and does not have school age children (Crouch, 2007). These demographic dynamics present significant educational and cultural challenges to addressing the needs of all students. According to the UCLA's Center for Mental Health in Schools (2005), improvement planning falls short of addressing these challenges, as educators generally do not plan strategically, support staff work in isolation, and tend to offer services that are fragmented to students most in need. Common characteristic of struggling schools that manage to turn around low performance have been identified in the research literature, although the evidence is not strong.

Educators in these schools “set common goals, look at data to plan, and monitor progress” (Institute of Educational Sciences, 2008, p. 14). Operationally in these schools, a clear alignment is established between student need, research evidence, professional development, instruction, and assessment. If systemic changes need to be made to facilitate goal attainment, then appropriate changes are implemented and supported over time, without losing focus on student needs.

## **2. Financial and Data Resources**

School district personnel generally appear constrained in efforts to allocate resources in systematic and aligned ways that are directly linked to student outcomes. They face such issues as limited resources, inconclusive research evidence to guide decisions, continuous political pressures, and a wide variety of local, state, and federal requirements and demands (Roza, 2008; Plecki, Alenjano, Knapp, Lochmiller, & 2006). The lack of a coherent system for student data collection, as well as how to use the data once collected, has also proven a significant barrier to helping school districts improve student outcomes. De Wys et al. (2008) identified poor district-wide alignment, limited understanding of resource allocation, and a lack of capacity to design and conduct assessments of resource use, as common themes in their study of Washington school districts. Moreover, when additional resources are needed to improve instruction, districts and schools seek grant and categorical program funding that often contains restrictions and/or requirements that confound efforts to create program coherency focused on student learning (Honig & Hatch, 2004). New programs often contain conflicting theories of action to existing work already underway in schools. For example, a school may be using student centered cooperative learning and inquiry-based learning principles and

then receive a grant to implement direct instruction. Other barriers related to data collection and use include such areas as a limited capacity to use systemwide achievement data, failure to engage key stakeholders, limited capacity for facilitated and effective communication, and poorly aligned improvement planning (Madda, Halverson, & Gomez, 2007). Sometimes, research provides strong evidence for statewide changes to teaching and learning that cannot be ignored, but has great financial consequences, such as the research on class size. Strong evidence indicates that reducing class size to around 15 students to one teacher per classroom in grades K-3 has a positive impact on student outcomes. But most importantly, the effects continue through high school, affecting college-going aspirations, especially for the traditionally low achieving groups (Konstantopoulos, 2008; Finn & Achilles, 1999, Nye, Hedges & Konstantopoulos, 1999, Krueger & Whitmore, 1999). However, reducing class size to within the limits cited in the research comes at a great cost in terms of staffing, materials, and/or physical space (Mitchell, Beach & Badarak, 1989).

## **3. People Issues**

In an international study of 25 school systems, teacher quality emerged as the top barrier to student achievement (Barber and Mourshed, 2007). Desimone, Porter, Garet, Yoon, and Birman (2002), in their longitudinal study of the effects of professional development on teacher’s instruction, found that improving the quality of teacher instruction benefited students who are most educationally at risk. Careful attention to hiring, deploying, training, and retaining quality teachers can positively influence student outcomes (Aos, Miller, & Pennucci, 2007). However, existing policies can constrain the recruitment and retention of high quality teachers in the following ways:

- Lack of a coherent system for supporting the entry, development, and retention of quality teachers (Loeb, Bryk, & Hanushek, 2007).
- Lack of coherent plans for interviewing and recruiting teachers, especially problematic in rural districts (Nichols, 2004).
- Inability to fire ineffective teachers (Loeb et al., 2007).
- Lack of incentives to attract and retain quality teachers (Guarino, Santibañez, & Daley, 2006)

Attracting and retaining high-quality teachers is an important policy goal for school districts since teacher quality improves student outcomes (Koedel, 2007; Darling-Hammond, 1999). On the other hand, this goal is constrained by a lack of teacher financial incentives, such as increases in salary schedules, differential pay for an assignment working with struggling schools, systems of pay for performance, and the inability to implement such incentives (Honowar, 2008; Aos, Miller, & Pennucci, 2007; Podgursky & Springer, 2007). In addition, state salary policies constrain hiring the best teachers in critical subject areas and for struggling schools (De Wys et al., 2008).

One area often mentioned as an impediment to school improvement is teacher unions. However, little evidence supports this belief. Research evidence suggests unions have a differential effect on learning showing achievement gains for most students in unionized schools is greater than in non-union schools. But in low- and high-performing schools, the opposite holds true (Carini, 2002). Further, teacher evaluation has been shown to be a factor in improving the effectiveness of teachers (Brandt, Mathers, Oliva, Brown-Sims, & Hess, 2007). But using evaluation for improvement is

fraught with challenges because the summative nature of evaluations tends to mitigate against using results for improving instruction.

In efforts to improve teaching quality, most districts implement professional development. But districts face challenges such as a lack of plans based on research, limited funding, lack of time, and sometimes lack of teacher motivation (De Wys, et al., 2008). Many districts, both in Washington and elsewhere, commit considerable resources to professional development, but lack coordinated strategies (Odden, Borman, & Fermanich, 2004; Desimone, Porter, Garet, Yoon, & Birman, 2002). Desimone, et al., (2002), in their three-year longitudinal study, found evidence that when professional development focuses on specific teaching practices, there is greater likelihood that teachers will use the practices in the classroom. They also found that collective participation improved the effectiveness of professional development. But finding time for collective participation has proven difficult because state policy too often lacks flexibility regarding the school calendar (Warner-King & Price, 2004) and/or administrators do not know how to obtain policy waivers or lack incentive and motivation. Research has also shown that in struggling districts, there is a lack of alignment between professional development and research-based practices, a failure to provide a systematic framework to support good instruction, and no coherent strategies aligned with district and school goals (Togneri, 2003).

#### **4. Use of Time**

How schools use time depends on state policy guidelines. State policy mandates the number of instructional and professional days. Traditionally, this has followed an agrarian model of fall to spring schooling

and efforts to modify this pattern often face local opposition and thus require careful involvement of stakeholders in the planning. Cooper, Valentine, Charlton, and Melson (2003) conducted an extensive review of the literature on the effects of modified school calendars. They found that modified calendars have their greatest impact on struggling schools or students from disadvantaged homes, but overall, the evidence is not strong because the research is quite uneven (Harris, 2004; Silva, 2007).

In addition, funding formulas that emphasize seat time and Carnegie units can be barriers to helping students satisfy requirements for early graduation as well as constraining the creation of personalized learning structures for students (Warner-King & Price, 2004). If a school wants to arrange class schedules differently, the school may risk losing funding if students are not enrolled a certain number of hours per day and days per year. However, some efforts have been made to extend the amount of time students attend school, such as extending the day and/or extending the school year (i.e., summer school and after school programs). Efforts have also been made to eliminate summer break to counteract knowledge loss between spring and fall. Collectively, the evidence is inconclusive, as no experimental studies have been reported. The evidence that is available has many qualifications but generally supports the following:

- Effects are differential, favoring poor and underachieving students.
  - Effects are cumulative over multiple years of implementation.
  - Effects are greater for elementary school samples than high school samples.
  - Effects are greater for suburban and rural programs than urban.
- Summer schools are an effective intervention to help struggling students (Harris, 2004).

## **5. State and/or Local Barriers to Achievement (Policy)**

Educational policy, whether district, state, or federal, plays an influential role in student outcomes. The barriers relating to policy at all levels are far greater than what can be covered in this review. Some of the more familiar policy areas researchers have examined are attendance, student retention, funding, curriculum standards and assessment, and policies related to English language learners. A central and overarching area affecting many of these barriers relates to the capacity for creating school system coherence and alignment with student outcome goals (e.g., resources, curriculum, assessment, professional development, instruction, and staffing). More importantly, research evidence indicates that coherent systems improve student outcomes. (Olson, 2007; Honig & Hatch, 2004; Corcoran & Lawrence, 2003). Key dimensions of coherent educational systems that are improving student outcomes in low performing schools are:

- Systemwide leadership committed to instructional improvement (Corcoran & Lawrence, 2003).
- Education perceived in terms of a P-16 aligned system (Dounay, 2008).
- Fostering norms of high expectations, caring for students, and instructional improvement (The Center for Public Education, 2008; Corcoran & Lawrence, 2003).
- Developing and maintaining a sustained focus on concrete student performance objectives; using data to set system wide goals for improvement that are directly linked to classroom instruction.

(Olson, 2007; Corcoran & Lawrence, 2003).

- Improving teacher quality that stays focused at the instructional level, on teaching and learning (AERA, 2005; Olson, 2007).
- Using research-based professional development strategies aligned to teachers' real work and improvement goals (AERA, 2005).
- Adopting a theory of action that links goals with district, school, and classroom actions (Olson, 2007).
- Providing adequate instructional resources (Corcoran & Lawrence, 2003).

This literature review could not possibly cover all the policy and management research literature on barriers to student achievement. Such an endeavor is well beyond the scope of this work. We narrowed our focus using existing research conducted in Washington state as a frame for initial identification of key barriers on the minds of Washington educators without restricting the possibility of additionally emerging themes. Out of our research review, an overarching theme emerged from studies conducted with districts and schools making positive difference in student outcomes, especially for struggling schools (Institute of Educational Sciences, 2008). These districts/schools focus their efforts on improving the quality of instruction and they develop coherent systems which focused energy and resources to that end. They do not let their work fade into the background, but monitor and assess results using student outcome data to continually make appropriate adjustments.

A question emerges from these data—how can policy not only serve to support successful schools, but help turn around more struggling schools? What emerges

from the research is a conceptual framework for implementing strategies with the greatest potential for improving student achievement—a framework where strong visionary building leadership works in conjunction with a highly skilled and dedicated instructional staff to focus on improved student outcomes, and an educational team is provided with adequate resources and empowered to act decisively in improving the quality of instruction and learning. The subsequent data collected from school and district stakeholders was consistent with the findings from the research literature.

### **Quality and Usefulness of the Literature Review**

The literature review identified potential barriers to school improvement. Evidence that shows how effectively this was accomplished comes from two sources. Stakeholder ratings of the entire list of barriers showed that those identified in the literature review were indeed barriers in Washington state, and that each held the potential to show moderate to high impact if they were successfully removed. Focus group and phone interviews provided the second source. At the end of each session, the participants identified additional barriers that, if removed, could help them improve student achievement. In all instances no additional policy barriers were offered.

In summation, there was broad consensus that the barriers identified by the review were important and that their removal had the potential to positively impact student achievement. At the same time, respondents contributed no additional policy barriers when prompted to do so.

## Instrument Development

The following policy and procedural barriers, identified through the literature review, were used as the organizational structure for the seven protocols that were used in the study: key stakeholder interview, teacher focus group protocol and barrier rating sheets, principal focus group protocol and barrier rating sheet, and district staff interview protocol and barrier rating sheet (see Appendix B for copies of protocols):

1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.
3. Lack of flexibility in the 180-days and 1,000 hours school-year requirements to design school days and the school year calendar in ways that would result in more effective instructional time.
4. Lack of school staff members with expertise in how to focus school improvement efforts.
5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.
6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction.
7. School and district financial resources are insufficient to assure

that all students achieve at grade-level.

8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
9. Lack of administrative capacity to effectively focus improvement efforts.
10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
11. Inability to dismiss ineffective staff.
12. Inability to enact differential pay for staff.
13. Lack of strategic alignment between professional development and school/district goals.
14. Lack of time for professional development and teacher collaboration time.
15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
16. Classes are too large for teachers to be able to teach effectively.

## Key Stakeholder Interviews

NWREL staff, in collaboration with the SBE staff, identified a sampling frame of 44 representatives from key legislative committees, governmental, educational and community agencies for participation in the study (see Appendix C for complete list of organizations). Introductory letters were first sent to each key stakeholder by the SBE. These introductory letters were followed by e-mails from NWREL staff members as part of the interview scheduling process. Interviews, which were approximately one hour in length, were successfully completed with 34 key stakeholders (a 77.3 percent response rate).

For each identified barrier, participants were asked whether they thought this policy or procedure was a problem for Washington schools. If their response was yes, participants were asked to rate, using a three-point scale (high, medium, or low), the ability of the state or district to eliminate this barrier.

### Onsite District Visits

NWREL staff members, in collaboration with SBE staff, selected seven school districts to visit as part of the study: Everett, Moses Lake, Seattle, Sedro-Woolley, Shelton, Vancouver, and Yakima. These districts were selected because of their high representation of minority students, level of student performance on the WASL and AYP, and range of student enrollment and staff size (high, medium, and low). As a group, these districts account for just over 11 percent of the students and staff members within the state.

During the onsite visits, NWREL staff members conducted teacher focus groups, principal focus groups, and interviewed district staff members. Teacher focus groups were comprised of six teachers selected from the district’s most struggling schools. Union representatives from each school district were invited to participate in a separate focus group. Focus group sessions were scheduled after school, and lasted approximately one hour. Honorariums were provided to teachers in order to encourage participation in the focus groups.

Principals from the same schools as the teachers participated in a principal focus group. Focus group sessions were also approximately one hour in length and explored staffing and financial issues in addition to the instruction-related barriers covered in the teacher focus groups. Superintendents and key district staff

members were interviewed regarding barriers from a district perspective.

Focus group and interview participants were asked to verify that barriers identified through the literature review were applicable to their schools and districts. Follow up questions were asked to clarify what aspects of specific policies impeded raising student achievement.

During their focus group sessions, principals and teachers were asked to fill out a rating sheet that listed the 16 barriers and assess the level of impact (high, medium, or low) on student achievement that would be attained if the barriers were removed. A similar rating sheet was developed for superintendents who were attending a statewide superintendent conference in May 2008. Twenty-three surveys were completed by superintendents and returned to NWREL for analysis.

Descriptive statistics are primarily used in presenting study findings. Frequencies and percentages are calculated for the applicability of identified barriers, impact rankings on student achievement, and ratings on the state’s ability to bring about policy change. An average score (impact and ability to change) from 2.25 to 3.00 is coded as “high,” 1.66 to 1.85 as “medium,” and 1.00 to 1.65 as “low” (Table 1).

TABLE 1  
Range of Ratings as Determined by Mean Average Score

2.25 - 3.00 High	1.85 – 2.24 Medium	1.00 - 1.84 Low
---------------------	-----------------------	--------------------

Open-ended responses are grouped into categories— Assistance for School and District Improvement, Financial and Data Resources, People Issues, and Use of Time.

# FINDINGS

## Principal Rating

A total of 44 Principal Rating Forms and were returned (Table 2). Approximately 41 percent of the principals were from elementary schools, 32 percent from middle schools, and 18 percent from high schools.

Table 2  
Principals: School Demographics

	Frequency	Percent
Elementary school	18	40.9
Middle school	14	31.8
High school	8	18.2
Both middle and high	1	2.3
K-12	3	6.8
Total	44	100.0

## Teacher Rating

A total of 57 Teacher Rating Forms were returned (Table 3). Two-thirds (38) of the teachers were from selected teachers and one-third from union representatives (19). The top four highest ratings on the impact on student achievement when removing a barrier, and the state's ability to initiate policy changes to mediate that barrier, were the same.

Union representatives from each school district participated in a separate focus group and were invited to verify the consistency of findings. The ratings from

Table 3  
Teachers: School Demographics

	Frequency	Percent
Elementary school	14	36.8
Middle school	11	28.9
High school	10	26.3
Both middle and high	1	2.6
Junior high (8-9)	1	2.6
K-12	1	2.6
Total	38	100.0

selected teachers and union representatives were very similar. The descriptive statistics from union representatives can be found in Appendix D. Only the ratings of selected teachers were included in this study. Among the selected teachers, 36.8 percent were from elementary schools, 28.9 percent from middle schools, and 26.3 percent from high schools.

## Superintendent Rating

A similar rating sheet was developed for superintendents who were attending a statewide superintendent conference in May 2008. Twenty-three surveys were completed by superintendents and returned to NWREL for analysis.

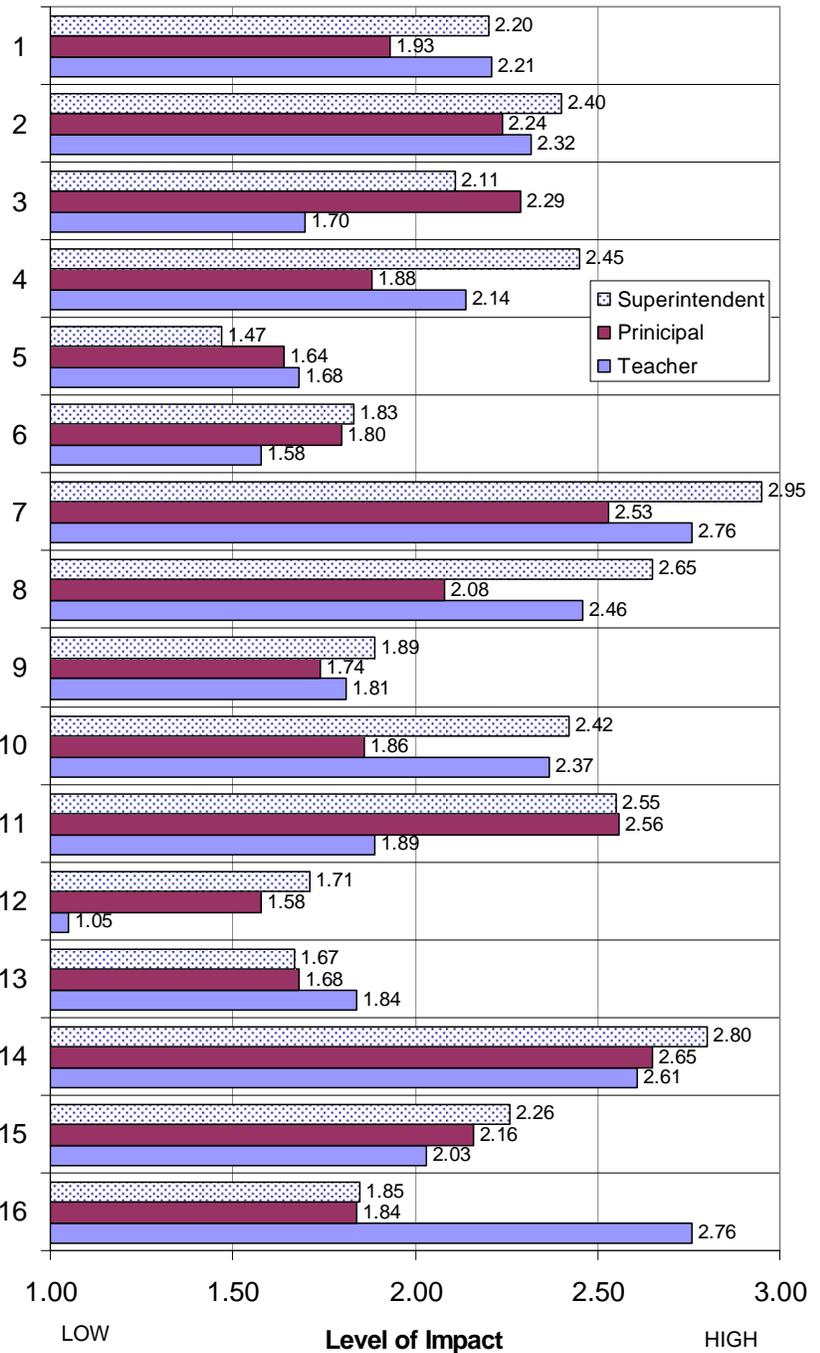
## Level of Impact on Student Achievement if Barriers are Removed

The perceptions of teachers, principals, and superintendents regarding of the level of impact on student achievement if the barriers are removed are presented in Figures 1 to 4. Stakeholders' perceptions regarding the level of impact on student achievement and the state's ability to eliminate the barriers are discussed in the next section and are presented in Figures 5 and 6, respectively. The descriptive statistics for all participants can be found in Appendix D.

**FIGURE 1**

**Barriers:**

1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.
3. Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
4. Lack of school staff with expertise in how to focus school improvement efforts.
5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.
6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction
7. School and district financial resources are insufficient to assure that all students achieve at grade-level.
8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
9. Lack of administrative capacity to effectively focus improvement efforts.
10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
11. Inability to dismiss ineffective staff.
12. Inability to enact differential pay for staff.
13. Lack of strategic alignment between professional development and school/district goals.
14. Lack of time for professional development and teacher collaboration time.
15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
16. Classes are too large for teachers to be able to teach effectively.

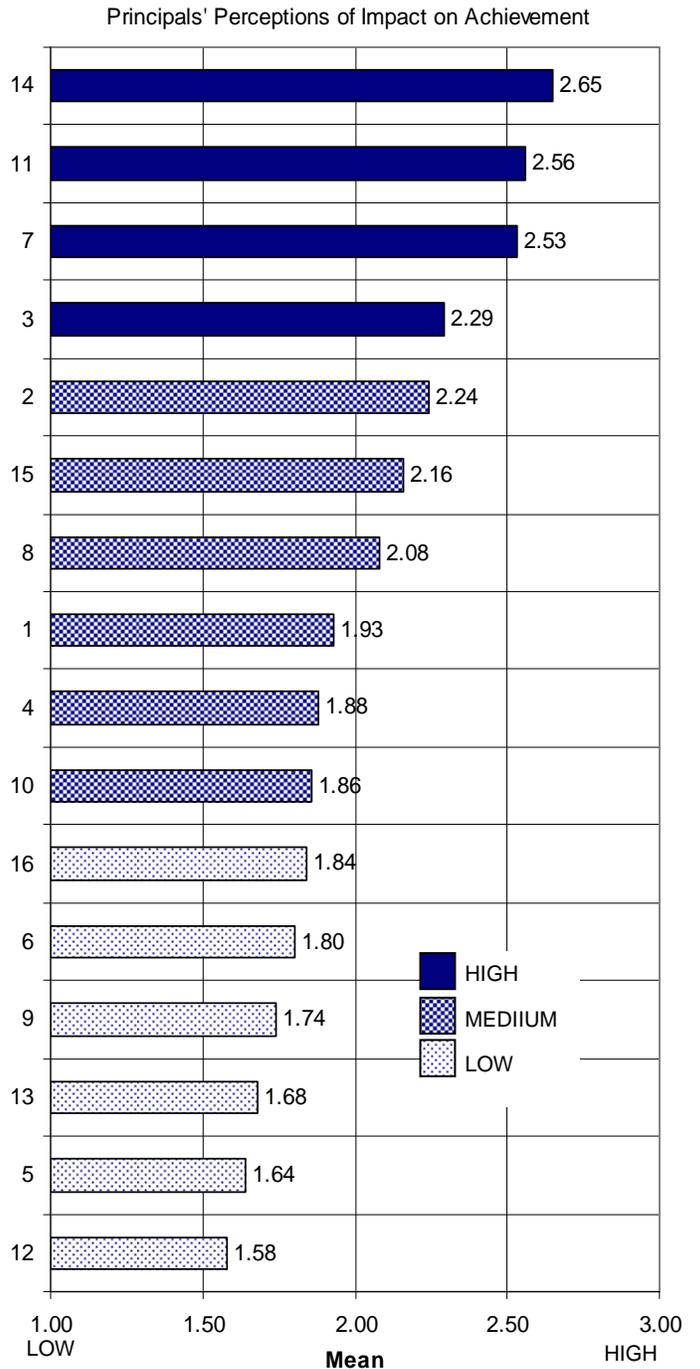


**Comparison of Respondents' Perceptions of the Level of Impact on Student Achievements if Barriers are Removed**

**FIGURE 2**

**Barriers:**

- 14. Lack of time for professional development and teacher collaboration time.
- 11. Inability to dismiss ineffective staff.
- 7. School and district financial resources are insufficient to assure that all students achieve at grade-level.
- 3. Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
- 2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.
- 15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
- 8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
- 1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
- 4. Lack of school staff with expertise in how to focus school improvement efforts.
- 10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
- 16. Classes are too large for teachers to be able to teach effectively.
- 6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction
- 9. Lack of administrative capacity to effectively focus improvement efforts.
- 13. Lack of strategic alignment between professional development and school/district goals.
- 5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.
- 12. Inability to enact differential pay for staff.



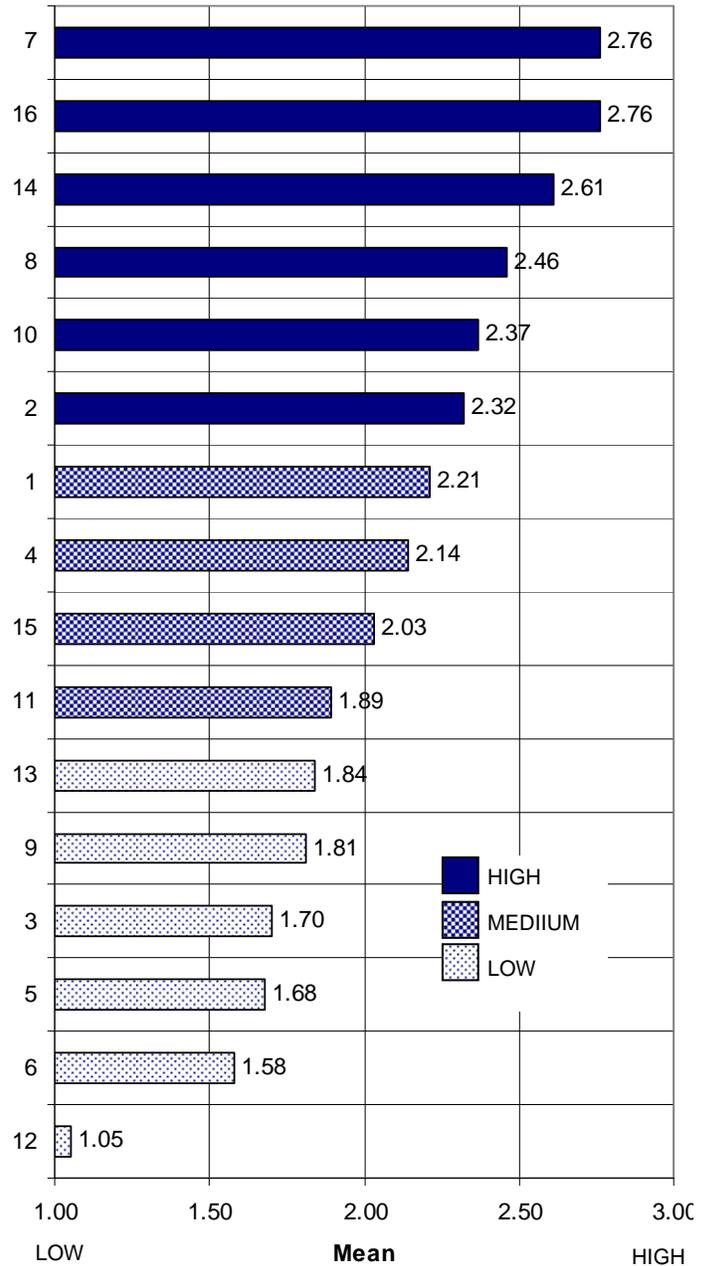
**Principals' Perceptions of the Level of Impact on Student Achievement if Barriers are Removed**

**Figure 3**

Barriers:

- 7. Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.
- 16. Classes are too large for teachers to be able to teach effectively.
- 14. Lack of time for professional development and teacher collaboration time.
- 8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
- 10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
- 2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.
- 1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
- 4. Lack of school staff with expertise in how to focus school improvement efforts.
- 15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
- 11. Inability to dismiss ineffective staff.
- 13. Lack of strategic alignment between professional development and school/district goals.
- 9. Lack of administrative capacity to effectively focus improvement efforts.
- 3. Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
- 5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.
- 6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction
- 12. Inability to enact differential pay for staff

Teachers' Perceptions of Impact on Achievement

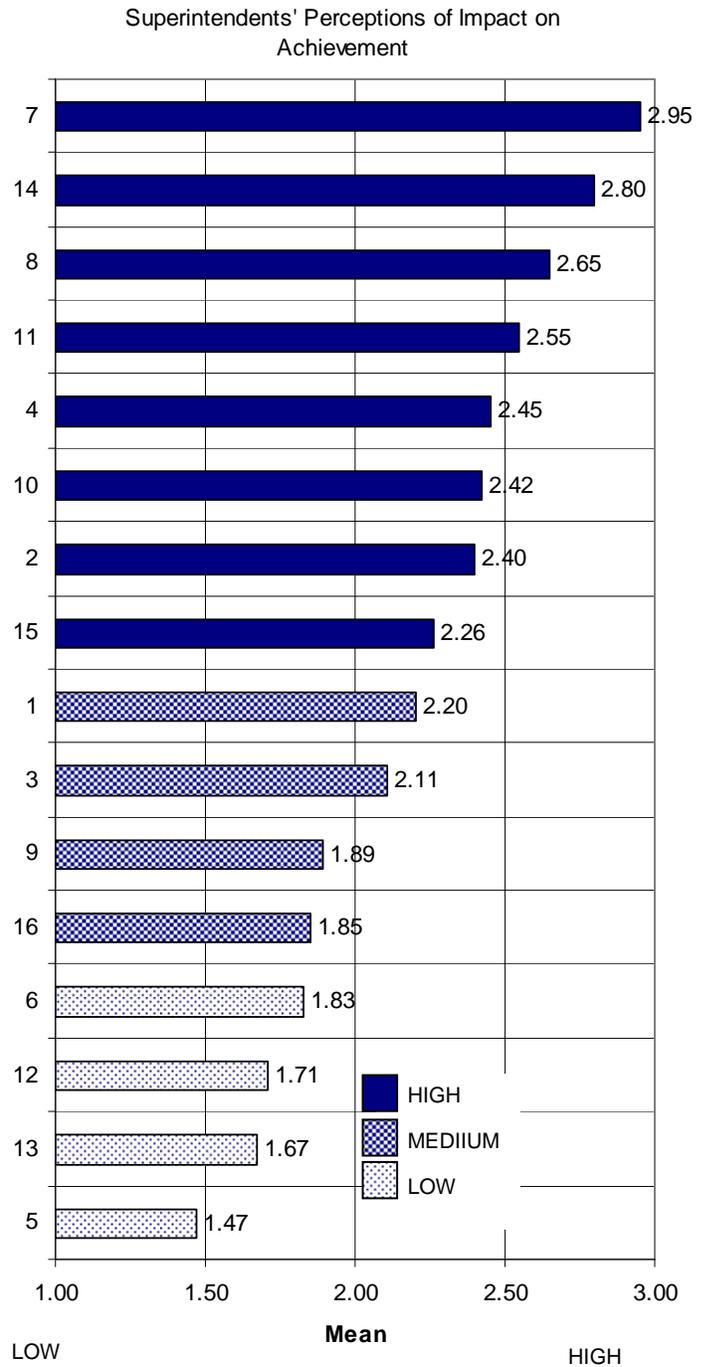


Teachers' Perceptions of the Level of Impact on Student Achievement if Barriers are Removed

**FIGURE 4**

Barriers:

- 7. School and district financial resources are insufficient to assure that all students achieve at grade-level.
- 14. Lack of time for professional development and teacher collaboration time.
- 8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
- 11. Inability to dismiss ineffective staff.
- 4. Lack of school staff with expertise in how to focus school improvement efforts.
- 10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
- 2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services.
- 15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
- 1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
- 3. Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
- 9. Lack of administrative capacity to effectively focus improvement efforts.
- 16. Classes are too large for teachers to be able to teach effectively.
- 6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction
- 12. Inability to enact differential pay for staff.
- 13. Lack of strategic alignment between professional development and school/district goals.
- 5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.



Superintendents' Perceptions of the Level of Impact on Student Achievement if Barriers are Removed

## Key Stakeholder Interviews

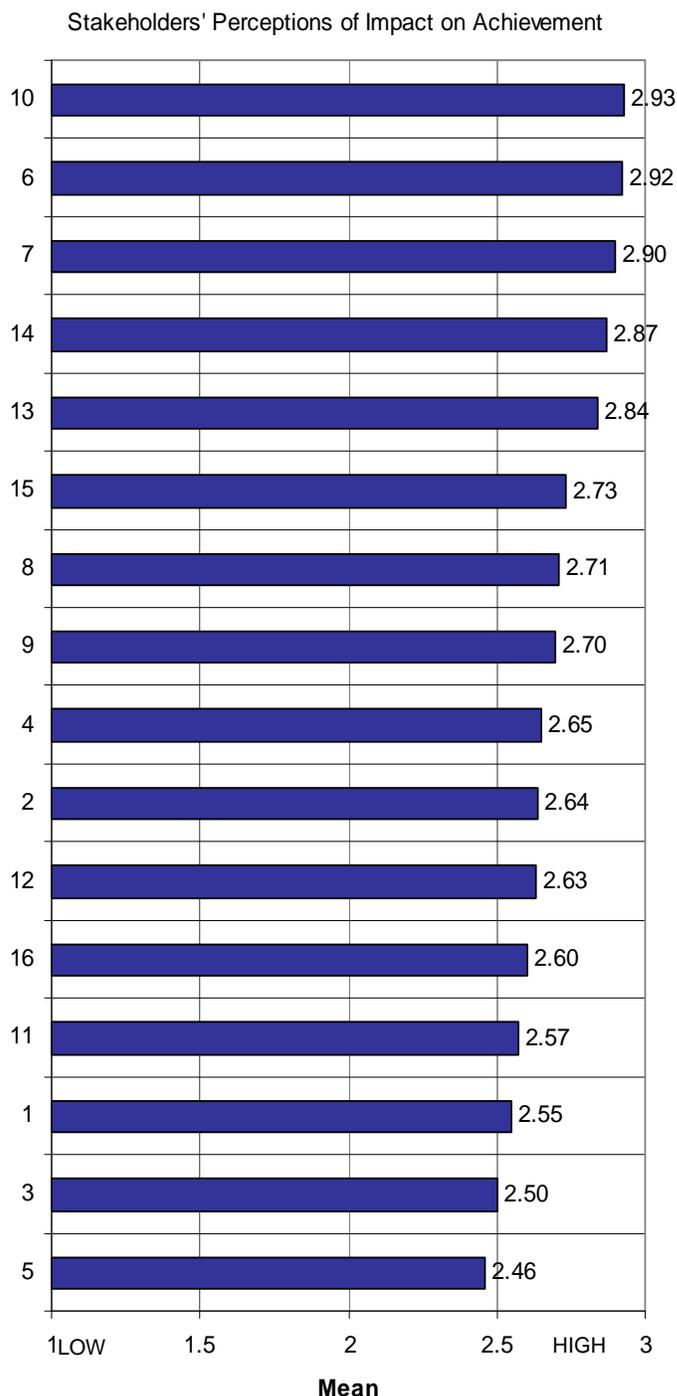
A total of 34 stakeholders were interviewed in April and May 2008. They were asked to rate the level of impact a policy has on student achievement, and the level of the state's ability to

reduce that barrier by changing current policy. (Barriers, ordered by highest to lowest mean average score, are shown in Figures 5 and 6.)

**FIGURE 5**

Barriers:

10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction
7. School and district financial resources are insufficient to assure that all students achieve at grade-level.
14. Lack of time for professional development and teacher collaboration time.
13. Lack of strategic alignment between professional development and school/district goals.
15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
9. Lack of administrative capacity to effectively focus improvement efforts.
4. Lack of school staff with expertise in how to focus school improvement efforts.
2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.
12. Inability to enact differential pay for staff.
16. Classes are too large for teachers to be able to teach effectively.
11. Inability to dismiss ineffective staff.
1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
3. Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.



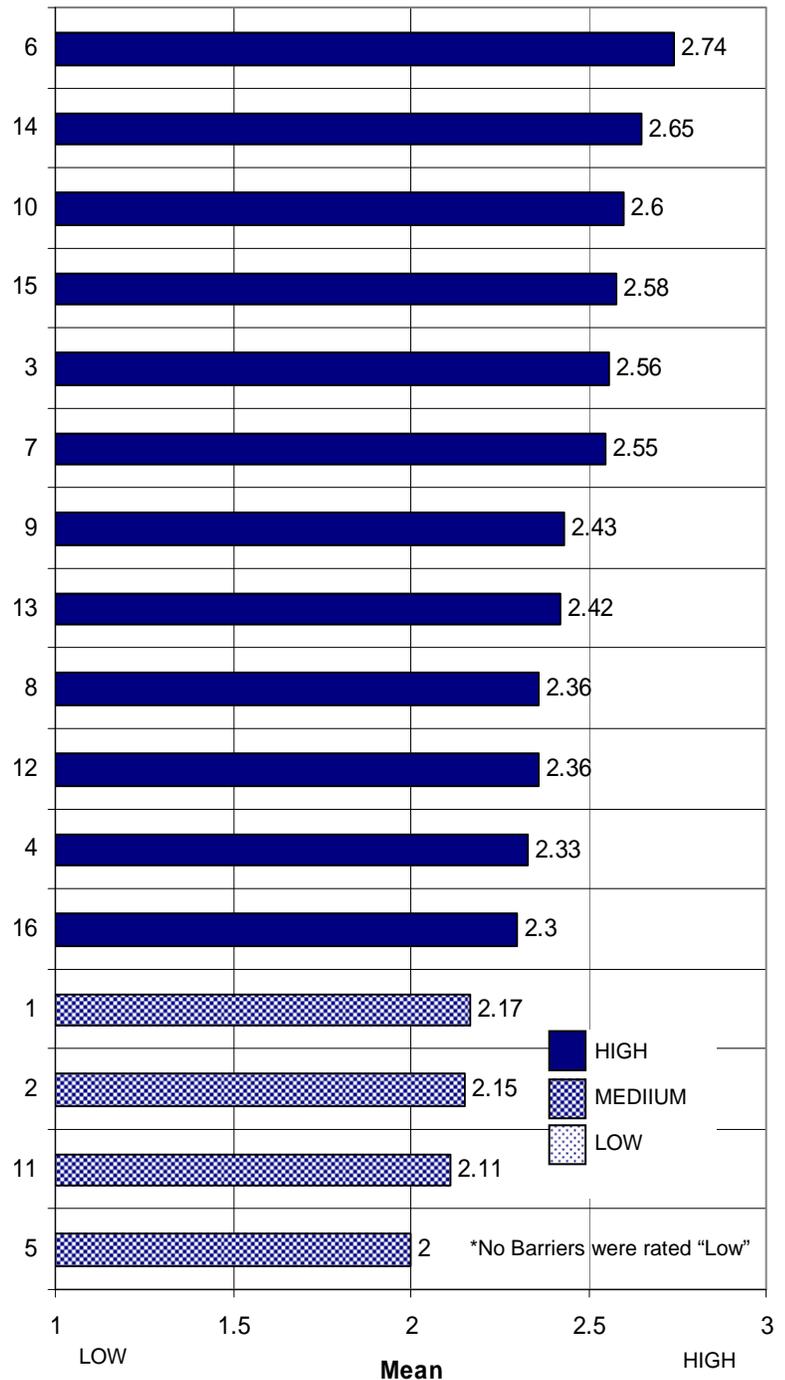
Key Stakeholders' Perceptions of the Level of Impact on Student Achievement if Barriers are Removed

**Figure 6**

**Barriers:**

- 6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction
- 14. Lack of time for professional development and teacher collaboration time.
- 10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
- 15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
- 3. Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
- 7. School and district financial resources are insufficient to assure that all students achieve at grade-level.
- 9. Lack of administrative capacity to effectively focus improvement efforts.
- 13. Lack of strategic alignment between professional development and school/district goals.
- 8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
- 12. Inability to enact differential pay for staff.
- 4. Lack of school staff with expertise in how to focus school improvement efforts.
- 16. Classes are too large for teachers to be able to teach effectively.
- 1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
- 2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.
- 11. Inability to dismiss ineffective staff.
- 5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.

**Stakeholders Perceptions of State/District Ability to Eliminate Barrier**



**Key Stakeholders' Perceptions of the Ability of States or Districts to Eliminate Barriers**

## Responsibility

The stakeholders were also asked who (state or district) should be responsible for each barrier. A majority of the respondents reported that the **state** should be responsible to remove the following barriers (Figure 7):

- Classes are too large for teachers to be able to teach effectively (88.2%).
- School and district financial resources are insufficient to assure that all students achieve at grade-level (83.3%).
- Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction (73.1%).
- Inadequate incentives for the best qualified staff to go to the highest-need schools (68.0%).
- Inability to enact differential pay for staff (65.2%).
- School and district financial resources are inflexible to target funding where highest needs are to improve student achievement (61.9%).
- Lack of flexibility in the 180-days and 1,000-hour school year requirements to design school days and the school year calendar in ways that would result in more effective (56%).
- Lack of time for professional development and teacher collaboration time (52.4%).
- Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change (51.7%).
- Lack of a coherent system for supporting the entry, development, and retention of quality staff (51.7%).

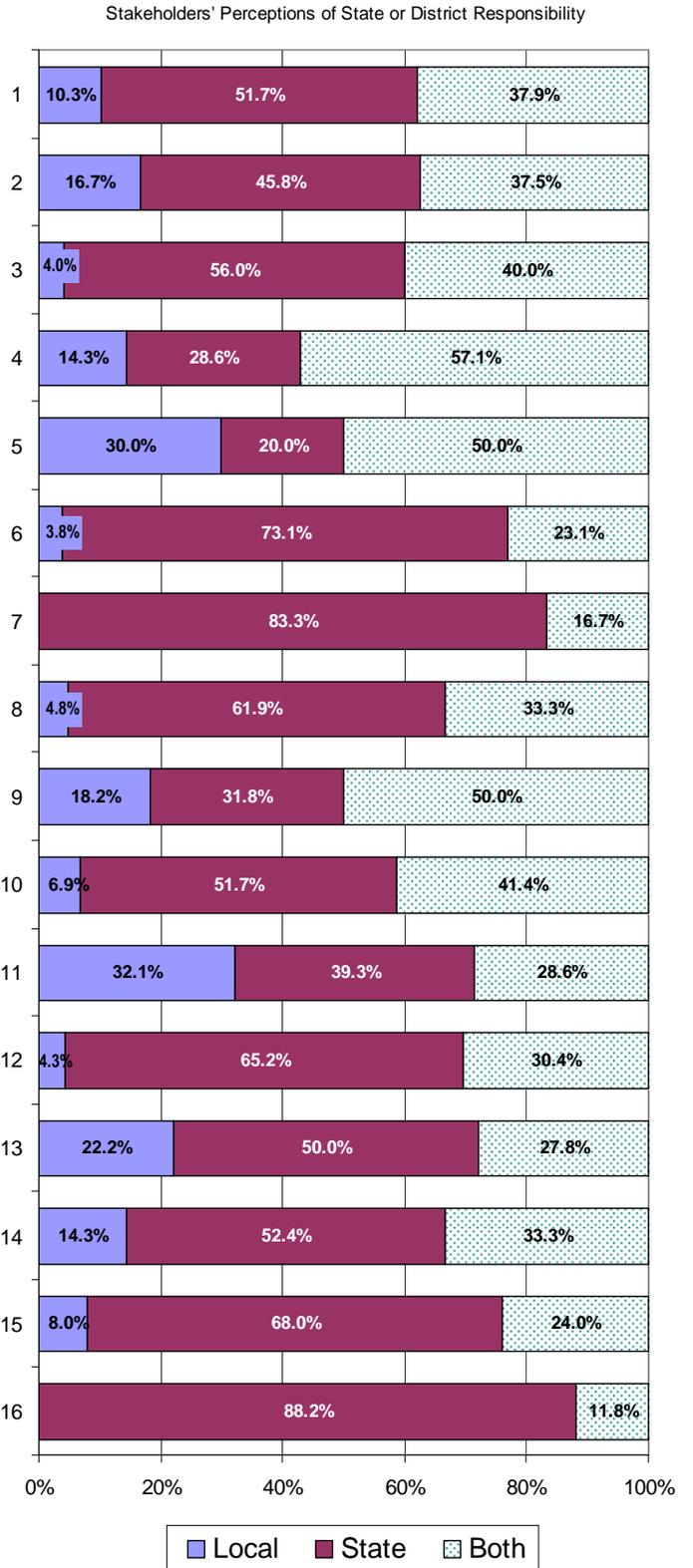
On the other hand, a majority of the respondents reported that both the **state and district** should be responsible to remove the barrier:

- Lack of school staff with expertise in how to focus school improvement efforts (57.1%).

FIGURE 7

Barrier:

1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.
3. Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
4. Lack of school staff with expertise in how to focus school improvement efforts.
5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.
6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction
7. School and district financial resources are insufficient to assure that all students achieve at grade-level.
8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
9. Lack of administrative capacity to effectively focus improvement efforts.
10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
11. Inability to dismiss ineffective staff.
12. Inability to enact differential pay for staff.
13. Lack of strategic alignment between professional development and school/district goals.
14. Lack of time for professional development and teacher collaboration time.
15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
16. Classes are too large for teachers to be able to teach effectively.



Stakeholders' Perceptions of the Who (State or District) is Responsible for the Barriers

### **Barrier Impact Prioritization Matrix**

Key stakeholder and school district ranking responses were integrated into a **Barrier Impact Prioritization Matrix** (Figure 8). The purpose of the matrix is to develop a prioritized list of policies that participants feel provide both the greatest opportunity for increasing student achievement and the highest likelihood for policy change. The matrix consists of six cells across two dimensions, the level of impact a policy has on student achievement, and the level of the state’s ability to reduce that barrier by changing current policy. Using a 3-point scale—low, medium, and high— school and district participants were asked to rate the

impact of each barrier on student achievement and key state policymakers were asked to rate the state’s ability to initiate policy changes to mitigate that barrier. Each barrier was located in the appropriate matrix cell based upon its rating coordinates (impact and changeability).

All barriers were placed in the appropriate matrix cell. The policies and practices that fall within the cell representing a high–high rating (shaded area) were highlighted for future policy considerations.

**FIGURE 8**

**Barriers:**

1. Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.
2. Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.
3. Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
4. Lack of school staff with expertise in how to focus school improvement efforts.
5. Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.
6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction.
7. Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.
8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
9. Lack of administrative capacity to effectively focus improvement efforts.
10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.
11. Inability to dismiss ineffective staff.
12. Inability to enact differential pay for staff.
13. Lack of strategic alignment between professional development and school/district goals.
14. Lack of time for professional development and teacher collaboration time.
15. Inadequate incentives for the best qualified staff to go to the highest-need schools.
16. Classes are too large for teachers to be able to teach effectively.

Stakeholders' Perception of State/District Ability to Remove Barrier

		High	Medium	Low
Teachers' Perception of Impact of Removal of Barrier on Achievement	High	7; 8; 10; 14; 16	2	
	Medium	4; 11; ,15,	1	
	Low	3; 6; 9; 12; 13	5	

Stakeholders' Perception of State/District Ability to Remove Barrier

		High	Medium	Low
Principals' Perception of Impact of Removal of Barrier on Achievement	High	3, 7, 14	11	
	Medium	4; 8, 10; 15	1,2	
	Low	6; 9; 12; 13; 16	5	

Stakeholders' Perception of State/District Ability to Remove Barrier

		High	Medium	Low
Superintendents' Perception of Impact of Removal of Barrier on Achievement	High	4, 7, 8; 10; 14; 15	2; 11	
	Medium	3; 9; 16	1	
	Low	6; 12, 13	5	

Stakeholders' Perception of State/District Ability to Remove Barrier

		High	Medium	Low
Stakeholders' Perception of Impact of Removal of Barrier on Achievement	High	3; 4, 6; 7, 8; 9; 10; 12; 13; 14; 15; 16		
	Medium	1; 2; 11; 5		
	Low			

**Barrier Impact Prioritization Matrix Reflecting the Perceptions of Each Respondent Group**

From a **teacher's** perspective, the following barriers were rated as high on the level of impact a policy has on student achievement, and a high on the level of the state's ability to reduce that barrier by changing current policy:

- School and district financial resources are insufficient to assure that all students achieve at grade-level.
- School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
- Lack of a coherent system for supporting the entry, development, and retention of quality staff.
- Lack of time for professional development and teacher collaboration time.
- Classes are too large for teachers to be able to teach effectively.

From a **principal's** perspective, the following barriers were rated as high on the level of impact a policy has on student achievement, and high on the level of the state's ability to reduce that barrier by changing current policy:

- Lack of flexibility in the 180-days and 1,000-hour school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
- School and district financial resources are insufficient to assure that all students achieve at grade-level.
- Lack of time for professional development and teacher collaboration time.

From a **superintendent's** perspective, the following barriers were rated as high on the level of impact a policy has on student achievement, and a high on the level of the state's ability to reduce that barrier by changing current policy:

- Lack of school staff with expertise in how to focus school improvement efforts.
- School and district financial resources are insufficient to assure that all students achieve at grade-level.
- School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
- Lack of a coherent system for supporting the entry, development, and retention of quality staff.
- Lack of time for professional development and teacher collaboration time.
- Inadequate incentives for the best qualified staff to go to the highest-need schools.

From a **key stakeholder's** perspective, the following barriers were rated as high on the level of impact a policy has on student achievement, and a high on the level of the state's ability to reduce that barrier by changing current policy:

- Lack of flexibility in the 180-days and 1,000-hour school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.
- Lack of school staff with expertise in how to focus school improvement efforts.

- Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction.
- School and district financial resources are insufficient to assure that all students achieve at grade-level.
- School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.
- Lack of administrative capacity to effectively focus improvement efforts.
- Lack of a coherent system for supporting the entry, development, and retention of quality staff.
- Inability to enact differential pay for staff.
- Lack of strategic alignment between professional development and school/district goals.
- Lack of time for professional development and teacher collaboration time.
- Inadequate incentives for the best qualified staff to go to the highest-need schools.
- Classes are too large for teachers to be able to teach effectively.

The policies and practices that fall within the cell representing a **high-high rating** across teachers, principals (high-medium), superintendents, and stakeholders are:

- School and district financial resources are insufficient to assure that all students achieve at grade-level.
- School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.

- Lack of a coherent system for supporting the entry, development, and retention of quality staff.
- Lack of time for professional development and teacher collaboration time.

## Summary of Findings from School District Staff Member, Principal, and Teacher Focus Groups

### Assistance for School and District Improvement

**School and district planning.** School district staff members and principals reported that schools are struggling with how to do a better job with school planning, and that currently it is a struggle for some schools to complete the School Improvement Plan. These respondents agreed that state level requirements help to get districts into compliance; but while, in some cases, a school could have different plans, generally there should only be one plan per building. Some respondents indicated that the School Improvement Plan needs to be on a template.

There was a universal agreement from principals that detailed School Improvement Plan guidelines from OSPI were sufficient, but they were not seen as user-friendly or aligned to district plans. There was a wide difference of opinion among principals whether there was an alignment between district and building plans. On the other hand, although district staff members agreed that OSPI guidelines were not always helpful, they felt that the articulation of district and building improvement plans was good. The extent of district participation in planning varies at the building level.

From the teachers' perspective, there was no complete agreement regarding the extent of involvement teachers had in developing school improvement plans, nor about the level of subsequent buy-in related to the

plan. In some districts, the initial efforts were seen as having building-wide, staff member participation, but many teachers perceived that updates were governed by only small groups of staff members. One district staff member reported that in the district, school plans were used on an ongoing basis, but only sparingly. Often new individuals joining the school staff didn't know of the existence of the plans. With very few exceptions, district administrators reported that schools didn't use the plans regularly.

**School improvement assistance program.**

There was a mixed report from district and school administrators regarding the quality and capability of School Improvement Facilitators (SIF) and the school improvement assistance program provided by OSPI. According to their response, the success of the program depends upon who the school improvement facilitator is. Some school principals felt that the state's effort is "one size fits all." Several principals agreed that when they have a well-qualified school improvement facilitator, they are satisfied with the quality of services that are provided. The less skilled the school improvement facilitator is, the less successful is service to the district. One school principal reported having a "terrible" experience with inflexibility on the part of one SIF.

**Program coordination.** In one school district, where there were multiple math grants, the district administrator report that it was difficult for its teachers to coordinate, and that the district was unable to do the training it needed for the proposed outcomes. Principals of schools that were moving to the later stages of "needing improvement" commented that although they liked the program in the earlier years of their grants, they now felt that they were being abandoned by the state. With the end of the grant, there would be no one

providing the resources, and the impact of the program would stop.

Principals reported that any request that could be handled by "a single touch" was handled well by the state or district. However, ongoing support or multifaceted problems were not addressed well by either the state or district.

District staff members also agreed that programs offered by state agencies needed to be articulated and coordinated. Two examples illustrating this issue were the new state math graduation requirements and the need for discussion regarding improvement in math achievement within the state. Districts perceived an intrinsic conflict between OSPI's focus on the NCLB mandate—that all students will graduate from high school—and the SBE's draft core of 24 credits for graduation initiative, which many feel could lower graduation rates.

Multiple stakeholders reported that schools were receiving mixed messages regarding the new revisions in math and science standards regarding timelines and curriculum, creating anxiety of how to plan for professional development and WASL preparation. One strategy put forth for addressing this problem was the implementation of a state taskforce, comprised of representatives from all of the state agencies (OSPI, SBE, etc.) to develop consistent statewide policies regarding training needs, resource requirements, and appropriate standards for students.

**Financial and Data Resources**

**School improvement budget.** There was a universal consensus from all participants that schools are not supplied with enough resources and funds from the legislature. There was an equal agreement about the need for more money, time, and for flexibility on how to spend the resources that were provided. There was consensus

by all district and school administrators that school improvement budgets are not determined based on individual school improvement needs. Most principals expressed a desire for, in their words, the “fulfillment of the state constitution’s requirement to fund basic education.” One superintendent said, “The state expects us to deliver a world-class education system with a sub-standard budget.” Another superintendent commented, “The state needs to redefine basic education to include all costs. There is a need for more funds for education from the state.”

**Financial resources.** One district administrator pointed out that Washington state ranks 47th in expenditure for education, right behind Mississippi and Idaho. Administrators commented that school districts are left to find their own funds for such things as transportation and special education. Administrators noted that most extra funding is “soft money,” which is temporary and has too many strings attached. Resources are provided for a short period of time, and then they are gone. Teachers observed, ironically, that once a school district shows that it is successful in implementing a program, the money is taken away, and the school district falls back again.

Two programs mentioned by participants that are illustrative of this barrier are OSPI’s School Improvement Facilitator (SIF) and Promoting Academic Success (PAS) Programs. A number of district and school staff mentioned that they were just beginning to make progress in improving student achievement when the grant period ended, putting a stop to the needed resources. One superintendent mentioned that when schools in his district had achieved student reading scores “a little above standard,” needed “funds were taken away.” In most cases the result of losing SIF funds was declining WASL scores, because the improvements could not be sustained without the additional resources.

The PAS Program was initiated by the legislature to allocate resources to schools to provide assistance to students who failed the 10th-grade WASL. However, a principal mentioned that after his district had geared up to provide students with assistance, the legislature shut down the PAS Program.

**Resource flexibility.** One school district reported that it has the operating flexibility it needs, but does not have sufficient resources. Another administrator cited a lack of flexibility in using funds. One principal said, “There seems to be extreme accountability at the state level that has caused the district to be more top down.” Another principal commented, “Educational policies are being made by legislatures who don’t know the student populations they serve and they think they are doing the right thing. It is not proper for the legislature to be making education policy. OSPI should be the agency where this gets done.” Another principal commented, “We are trying to be high tech schools and we are using the 1950s model of administration.” The principals would like to see funds given to schools based on needs, as defined by the needs and profile of students—special education, English language learners, socio-economic status. Some principals reported that the building-based, decision-making model in place in their districts, which requires staff member and parent input, was an impediment to administrative flexibility.

**Data resources.** There was a wide degree of opinion by principals about the effectiveness and usefulness of data systems that are in place. Many principals felt that they lacked time to review and use the data for school improvement. Most principals felt it would be helpful for the state to adopt and provide schools with a data system that met their needs. Comprehensiveness of data systems in place vary across buildings, and the multiple systems in place are often not compatible with each other. As a result, systems cannot communicate and work

together. Some district staff members were critical of the state data system, and had adopted their own data systems, which they used successfully to meet their needs. Finally, one principal reported that he had used the OSPI Web page for checking data and test items and found that the data in the Web page did not match current data in the district.

Teachers observed that the state has good data to offer, but the system around it is inadequate and does not provide information that can be used for ongoing assessment of student skills and improvement of teaching practices. There are gaps in assessing literacy. Teachers commented that the WASL is a very rich problem-solving test, but the state needs to identify testing companies that can provide problem-solving formative measures, so that schools and teachers can better judge if they are getting students to where they need to be.

Most principals and teachers stated that schools need to receive the WASL data sooner, and that it needs to be more predictive of student skills and more aligned to the curriculum. Most teachers are grateful that students are being identified as not meeting standards, but they agree that they need this information sooner in order to plan for the next school year. Teachers acknowledge that the schools are getting summative data, but they need help with formative data that is incremental. Some districts have chosen to use the Northwest Evaluation Association's Measure of Academic Progress (MAP), an assessment tool that teachers use to measure ongoing student progress more effectively.

## **People Issues**

**Recruitment of qualified teachers.** The perceptions of district administrators and principals about the ability to recruit quality teachers varied by location. From their

responses, there appears to be less of a problem at the elementary level than at secondary schools and in specialty areas. One school principal reported that because of a district practice, the school was unable to recruit early enough to be competitive with other schools for the best candidates. Many principals and superintendents indicated that identifying and recruiting highly qualified teachers in certain content areas is problematic; specifically, principals mentioned a need to do better job in recruiting math teachers. Principals also mentioned that districts are responsible for teacher placements and sometimes, because of certification, a placement is not what the building needs. Principals feel that this district practice needs to be changed.

There is a strong consensus from all respondents that the effectiveness of the teachers is the single most important educational determinant. Principals and district staff members agreed that recruitment and retention of educators in high-needs schools (rural, low-performing and high-poverty) and hard-to-staff subjects (math, science, and special education) is necessary in order to increase student performance and help close the achievement gap. Some principals and teachers suggested financial incentives, changes in collective-bargaining agreements, loan forgiveness programs, tuition reimbursement, signing bonuses, salary adjustments, induction programs, and mentoring opportunities, as effective strategies in teacher recruitment. They also agreed that such efforts aim not only to bring more people into the teaching profession, particularly in high-need subjects such as science and mathematics, but also to encourage more well-qualified teachers to teach in the most challenging schools. Both teachers and principals mentioned that compensation plays a key role in the recruitment and retention of teachers. However, this relationship is not a

simple one. Most teachers said that, in some cases, supportive working conditions may trump salary as a factor in teacher retention.

Principals mentioned that teacher attrition is most severe among beginning teachers, but that the likelihood of a teacher leaving declines significantly after he or she has been in the classroom for four to five years. District staff members reported that schools with greater administrative support and teacher autonomy have lower teacher attrition. Teachers indicated that providing them with adequate autonomy is another effective strategy for retention.

**Staffing system.** Some principals and district staff members mentioned that the district staffing system is not effective for “high needs” schools. Because of provisions within their collective bargaining agreements, teachers can request where they want to transfer, which results in more teachers going to high-end schools. In one school, 75 percent of the teaching staff had turned over in the last eight years.

However, despite these staffing issues, participating principals did not feel that there was a gap in quality between their staff and the staffs of other schools.

**Professional development.** Principals and district staff members clearly feel that funding for professional development is insufficient. Some feel that contract and bargaining issues interfere with what the schools and districts require in the delivery of professional development. Principals and school district staff members emphasized that professional development should be focused on teaching and learning. However, participation in professional development is a teacher’s option, and principals report that some members of their staffs are reluctant to participate or prefer to participate in training of their own choice. Principals saw this as a limitation in turning schools around. Principals feel that they do not have sufficient professional

development budgets. Even if they have a vision for where they want the building to go, they report lacking resources to do it. And, because teachers decide the content area of the professional development in which they choose to participate, principals also are not able to designate that funds be used in areas where they perceive improvement is needed. One principal mentioned that some teachers are motivated to get certification because of the higher salary it brings, but not to become better teachers.

**Dismissal of low-performing staff.**

Principals and district staff indicated that it is extremely difficult to dismiss ineffective staff members. It requires a tremendous amount of effort to remove teachers—sometimes taking more than one year to remove a low-performing teacher. Union intervention makes removing a teacher very difficult and slows the process. One principal said “we have the ability to remove ‘F’ teachers, but it is almost impossible to remove ‘C-’ teachers.”

**Differentiated compensation.** Principals and district staff members reported that there were relatively few instances where differentiated compensation had been provided to teachers; in those cases where differentiated compensation *had* taken place, it was dependent upon the availability of local funds. Some principals supported differentiated compensation, whereas *all* teachers rejected the idea.

**Collective bargaining agreement.** Almost universally, principals agreed that their present bargaining agreement was a barrier to school improvement. This was especially true regarding: 1) procedures for removing staff—making it difficult, but not impossible; 2) seniority provisions, which reduced administrative flexibility; and 3) the prescriptive evaluation model in the collective bargaining agreement.

District staff members and principals expressed the need for more flexibility in the policies governing how teachers are paid, hired, fired, or assigned. According to some principals, such flexibility is constrained by collective bargaining between teacher unions and school districts. Seniority is the primary basis for transfers, reductions, and reassignments; and some collective agreements require that teachers be paid extra for training that takes place outside the workday, including at conferences.

However, some district staff members and principals cautioned against placing blame on labor agreements for poor student achievement. Such a response distracts the school district from addressing the fundamental issues that these schools are dealing with, such as not having the infrastructure, learning materials, sufficient funding, and technology for the students in the school districts.

**Class size.** There is a universal agreement among teachers about the importance of reducing class sizes. In fact, the issues they cite as most important to school improvement are “class size, more money, and more time for teachers to collaborate.” Teachers were also in agreement that class size should be smaller in “high needs” schools.

### **Use of Time**

**School calendar.** The current calendar is viewed by most respondents, in all roles, as a barrier to student and teacher learning. Some teachers indicated that the use of time within the current calendar does not focus on school improvement; however, there was not consensus for a single solution for change. Some suggested a longer year, longer day, and a variety of block scheduling. Some principals and teachers suggested that the school calendar needed to go beyond 180 days. Many thought that

the school day was too short for struggling students.

Some district staff members and principals indicated that the conventional school calendar of nine months in school, followed by a three-month summer vacation, is an outdated school model. Teachers also said that the traditional school calendar doesn't correlate with children's learning patterns. The long summer break interferes with retention of material, particularly for younger children and for students whose families cannot afford summer enrichment activities. Most teachers suggested that the schools need to restructure the time teachers now spend in the classroom and focus on teacher training.

District staff members agreed that it is of little value to add days to the calendar without a concrete plan for using the time to enhance instruction. Adding more days to the school calendar is no guarantee that additional time will be used for better education. Moreover, principals and district staff indicated that changing the school calendar might generate controversy. Common challenges cited by the all respondents were funding for teacher salaries, supplies, transportation, child-care concerns, and scheduling facilities. Not every respondent agreed that extending the school day or year was the best way to improve education. District staff members and principals indicated that every hour and every day added to the school calendar incur a significant expense above and beyond existing budgets.

However, there was a widely held opinion across groups that the state should shift from focusing on instructional time based upon a Carnegie unit (seat time) to proficiency based outcomes.

**Collaboration time.** Some teachers reported that the lack of instruction time was not the most pressing problem, but rather the lack of collaboration time. There is agreement that there is not enough time for teachers to get together to plan and collaborate, and that more time for collaboration should be provided during the school day.

**Washington Administrative Code (WAC) 180-16-220 Modifications.** Two issues emerge regarding the Washington Administrative Code (WAC) 180-16-220 and the present school improvement process.

First, there was an agreement among many administrators that although the present *School Improvement Planning Process Guide* from OSPI was comprehensive, it was not seen as user friendly. At 170 pages, the present *School Improvement Planning Process Guide* contains a wealth of planning information and step-by-step planning aids. However, all school groups reported that they desired a more simplified process template, possibly some type of computerized template to use in developing their school improvement plan.

Second, many of the participants reported that once the plans were developed they were infrequently used on an ongoing basis. Presently, WAC 180-16-220 requires each school in a district to be approved annually by the school district board of directors. The specific language of this requirement in the administrative code is as follows:

*(a) Each school in the district shall be approved annually by the school district board of directors under an approval process determined by the district board of directors.*

*(b) At a minimum the annual approval shall require each school to have a school improvement plan that is data driven, promotes a positive impact on student learning, and includes a continuous improvement process that shall mean the*

*ongoing process used by a school to monitor, adjust, and update its school improvement plan.*

A number of districts have interpreted this language to mean that “there is no requirement that the school board approve each school’s plan. Instead, the requirement is only that the school board ensure that the plans are in existence.” This interpretation may contribute to lessening the importance of integrating the plan into the organizational life of the school. One strategy to address this issue would be to modify the WAC to require school boards to submit an annual report certifying and illustrating the use of SIP plans by schools and the progress made in accomplishing specified plan outcomes.

## **Context for Policy Findings**

Consistent with the emergent educational research literature, a framework for strategies with the greatest potential for dramatically improving student learning in underperforming schools includes the existence of strong visionary-building leadership, accompanied by a skilled, cohesive, and dedicated teaching force. The teachers and administration should work together as a team focused on improving student achievement. Systems should be designed to empower these building-level educators with adequate resources and the ability (freedom/authority) to act decisively in improving the quality of instruction and learning.

It is little wonder then that all four of the consensus barriers, where all groups felt the greatest improvement could occur and policymakers felt could be removed, aligned themselves directly to portions of this framework. For example, the recognition of the importance to remove the barrier of insufficient resources speaks directly to providing adequate resources to building staff members. The recognition that not having adequate time for building staff

members to meet, plan, and confer speaks to resources to fund this time, but also for leadership to insure the time is used wisely. The barrier posed by the lack of operating flexibility directly relates to building staff members being free to act decisively when needed. Finally, the barrier posed by a lack of systems to support the entry, development and retention of highly qualified staff members directly links to the existence of strong leadership and a skilled, cohesive, and dedicated teaching force.

This study can not answer all of the implementation questions that will arise as Washington state undertakes its effort to turn around historically underperforming schools. However, it can point the way. Based on the literature and the professional judgment of Washington educators and policy makers, it is clear that all of the barriers identified were currently inhibitors to some degree in Washington schools. It was the consensus that their removal would favorably improve student learning from a moderate to a high degree. It was also a consensus that the barriers with the greatest potential to improve learning were the ones seen as barriers to achieving this framework.

## **Primary Policy Findings**

### **Lack of Program Coherence**

Although participants were hard pressed to cite specific state policies that they could identify as barriers, they did agree that there existed a statewide lack of program coherence. While the estimated impact of removing barriers to program coherence was judged moderate to strong, the theme repeatedly emerged among all educator groups. In their view, it was common to receive multiple inputs from various educational policy-making bodies within the state, and that these could emanate from any of several sources, including the SBE, the Legislature, the Governor's Office, as well as OSPI. Each input came with a

different, and often incompatible, emphasis and set of requirements. In the respondents' words "the State needs to get its act together and decide who is in charge of program initiation, especially related to school improvement."

**Implications.** This barrier seems to rest clearly within the control of the state. It is recommended that clear roles, responsibilities, and expectations be established among the various educational policy-making bodies in Washington state, and that some mechanism be established to insure program consistency and congruence. In addition, some thought should be given to making the various programs not only compatible, but also to appear to work together when viewed from a district and building perspective, and to be clearly linked to student outcomes.

### **Perceived Funding and Program Impermanence**

This is not a category of barrier by itself, but rather a subset of the lack of program congruence described above. The effects of perceived funding impermanence are profound on the attitudes and actions of school personnel. From the perspective of Washington's schools and districts, funding streams are not only fragmented, but also transitory. In their words "We implement a funded program and in a couple of years, just about the time its impact is expected to be felt, the funding is removed and the program is lost." Such a perception constitutes a threat and barrier to any coordinated effort to improve underperforming schools. Moreover, to sustain progress made from a terminated funding source often forces district and school personnel to seek additional funding, which contributes to the level of incongruity. School improvement requires intensive and sustained effort by school personnel. It makes good sense to ensure

adequate funding and program support as a requisite to asking for this kind of effort.

**Implications.** When funding school improvement programs, the state should create a very stable funding stream. It is reasonable to expect that the time to convince school personnel that the funding and programs they support are not going to go away will take several years.

Conclusions and assumptions based on past history require demonstration that things will be different this time. Washington will only remove this barrier by demonstrating a commitment to maintain targeted resources and a willingness to stay the course in this effort. Talk will not suffice.

#### **Time for Professional Development and Teacher Collaboration**

The absence of such time was judged universally by all groups to be a barrier that, if removed, held the potential for highly impacting student achievement. This particular barrier was one that was mentioned time and time again at the end of the interview when individuals and groups were asked to articulate additional or particularly policies or practices that inhibited student learning.

The establishment and use of time for regular staff development and collaboration is both a resource and leadership issue. An appropriation of the current time for this purpose is not practical given the state's current annual minimum instructional time requirement. Additional time must be added to the day or the year in order to allow for these types of activities, which are so universally regarded as beneficial.

**Implications.** The state should allocate for additional staff time. The time provided should routinely be used to focus on student instructional needs and, as for building staff members to plan together how to address those needs. It would be wise to insure that

as part of their pre-service or in-service training, building principals demonstrate skill in group facilitation and display a commitment to help their staff members use this time wisely. This is important in order to maximize the benefit of any additional time allocated.

#### **Need for Operating Flexibility**

Unlike the consensus around the need for time to collaborate, the perceived need for operational flexibility differed by wide margins between groups of educators. Principals felt that many of the policies or practices currently in place inhibited them from taking action to improve student achievement. They cited provisions commonly contained in collective bargaining agreements, particularly in regard to personnel management (compensation, teacher assignment, dismissal and evaluation) and the use of time (school calendar). Teachers did not share this perception, and felt that increasing operational flexibility, especially if they impacted or removed the provisions of a collective bargaining agreement, would have low affects on student achievement.

It should be recognized that a dynamic tension exists around the value and usefulness of collective bargaining agreement provisions. On the one hand, principals are clearly calling for their removal in order to strengthen their hand to act decisively. However, decisive action is only one aspect of the framework that emerges from the literature. Equally important is the existence of a skilled, cohesive, and dedicated instructional work force. If adequate staff participation in deciding working conditions and levels of staff participation in building management is not maintained, it is not reasonable to expect there to be a skilled, cohesive, and dedicated teaching force working with the principal as a cohesive team. Systems to address historically underperforming

schools should address both requirements simultaneously.

**Implications.** It is important that efforts to improve historically underperforming schools consciously strike a balance by removing the provisions of the collective bargaining agreement in ways that maintain teacher support and team cohesiveness. This is clearly a difficult task and one whose details will need to be addressed in any plan adopted by the state focused on turning around historically underperforming schools.

### **Systems that Support the Entry, Development and Retention of Quality Staff Members**

This is a multifaceted barrier dealing with how Washington can initially attract and then retain high quality administrative and teaching personnel. In addition, it also addresses development of capacity and expertise of existing staff members. It is obvious that Washington schools would be well served by increasing their ability to attract and retain the best teachers in the nation. It is, however, necessary to recognize that all of the other states compete in the marketplace for the better teachers. Every state tries to increase its competitive position and improve its teaching and administrative work force. In this world of stiff competition Washington must renew its ongoing efforts and work smarter and harder if it is to attract the very best.

Once in place, adequate support for new teachers increases the chance they will remain in the profession and develop to their full potential. The development of teachers while on the job remains a challenging task. Creating appropriate learning experiences for adult learners and delivering them effectively in ways practicing teachers find practical and helpful, is key to development of the state's existing teaching staff.

**Implications.** Specialized professionals have worked productively with states, helping to attract and retain a strong teaching work force. Washington state is aware of, and has utilized, these strategies in its recruiting efforts. Washington might also consider reviewing its certification requirements to see if it is possible to streamline interstate transfer of experienced teachers. This might help attract teachers to the state and increase competitiveness nationwide. Increased funding and program development could also be undertaken around programs to mentor and support new and less experienced teachers.

## **Secondary Policy Findings**

### **All Barriers Judged Removable**

Stakeholders universally rated the state's and district's ability to remove barriers as modest or high. This is good news in that there does not seem to be some particular set of barriers that were judged intractable. When questioned, stakeholders tended to articulate a list of reasons why the removal of some barriers would be difficult or costly; but after they had done that, they ultimately judged that, given sufficient political will, effort, and persistence, all barriers could be removed.

**Implications.** Key policymakers in the state acknowledged that the state could do anything (remove any barrier), but it could not do *everything* (remove all of the barriers). Because of limits on time, money, and effort, it is important to develop a prioritized list to guide barrier removal. Finding a confluence of those with greatest potential impact along with Washington's ability to remove them is a useful strategy to guide this prioritization process.

## Discretion in Resource Allocation

Left to their own devices, many school districts display an inability or unwillingness to distribute discretionary funds in differential ways to address academic needs. The reasons and mechanisms for this behavior remain unclear at this point, but this fact is undeniable, given the universal practice of equal funding to buildings described by the educator groups. Given enough digging by the investigators, some schools were able to cite examples of schools in greater academic need receiving additional funds, but these were judged as small in magnitude and relatively inconsequential.

**Implications.** While school personnel consistently prefer funding practices that retain maximum building and district discretion on how resources are spent, it is important to establish a mechanism that helps them distribute at least a portion of state funds in a manner designed to address varying needs among buildings.

## Self-Sufficient Focus

Our sample of Washington educators, as a group, responded to the survey and questions in a manner that reflected an internal focus. In general, they expressed confidence that given adequate resources, they were up to the task of dramatically improving student achievement. This was documented by examining the list of barriers they judged would have higher impact if they were removed. Removal of these barriers would result in more resources, more flexibility to spend these resources, more time to collaborate with each other, and finally more time spent with each student in the form of smaller class size. Recognition of the need for outside help and needed increases in capacity resulting from more knowledge or capabilities—such as how to analyze and use data—were relegated to lower estimated impacts.

**Implications.** The orientation of Washington educators around self-sufficiency was unmistakable, and reflected confidence. However, the reality of this position remains uncertain. Is it true that, given enough resources, they will successfully turn around chronically underperforming schools? This remains to be demonstrated. In many ways, the current study is not designed to examine this issue or make this estimate. However, it remains for Washington state to make this determination. The strategy for school improvement should consciously be structured around a calculated estimate of the reality of this orientation.

## Significant Differences Existing Between Groups

Some areas of consensus did exist between all groups. These were especially centered on the four barriers whose impact of removal was uniformly judged to be high and simultaneously judged by the stakeholder group as having a high ability to be removed. However, on many of the other barriers, the groups differed sharply. Particularly striking were the differences in perception between teachers and the groups with more system-level responsibilities within districts (these included superintendents, central office personnel, and principals) around the issues of:

- (1) **Class size**—Teachers rated the potential impact of the removal of large class size as very high, while the other groups rated it below moderate.
- (2) **The use of differential pay** to entice teachers to choose to work with disadvantaged student populations or in underperforming schools—teachers were skeptical that this strategy would be effective, while principals and central office administrators were more optimistic.

- (3) The degree to which the **removal of provisions of the collective bargaining agreement** could affect student achievement—principals and central office administrators felt this would have a potentially greater positive affect than did teachers.

In most cases, one’s role in the educational enterprise determined how one gauged the potential impact the removal of the various barriers would have.

**Implications.** While there is no clear recommendation coming from this observation, it is advisable to acknowledge at the start that whatever model of school improvement is ultimately selected, it will be viewed differently by the various groups. No effort or priority list around removing barriers will satisfy all groups.

#### **Barrier Removal Recognized as a Joint Responsibility**

There was a recognition among stakeholders that the responsibility to remove most barriers rested primarily with the state. However, imbedded within the answers was the concept that districts and schools share some of the ability and responsibility to remove the barriers.

**Implications.** When the state determines to remove or reduce a barrier, it should systematically examine how its effort can be coordinated with districts and schools. A joint agreement articulating roles and responsibilities should be established as part of the planning.

#### **Different Opinions about National Board Certification**

As noted earlier, on almost all measures and opinions, the teacher group and the teacher union representatives groups concurred. The one principle difference was around the topic of National Board teacher certification.

The difference was so pronounced that it deserves mention here. Teachers in general were very positive and hopeful about the potential for increased skills and financial rewards associated with national certification. Many of the teachers selected to participate in the study were currently enrolled in, or finished with, National Board teacher certification.

Union representatives in general held a different opinion of National Board certification. They were skeptical about the quality of the certification process either producing or certifying truly improved teaching skills. They were also resentful of the financial reward available to teachers finishing the certification and not available to older, more experienced teachers who chose not to submit to the certification process.

Principals expressed a strong interest in National Board certification and were hopeful that the level of teaching expertise would rise as a result. They were also very hopeful that the \$5,000 stipend, available as an incentive to motivate nationally certified teachers to work in schools serving population in greater need or demonstrating lower academic achievement levels, would actually result in these schools receiving more experienced and better prepared teachers.

**Implications.** Washington state might monitor and document the effectiveness of nationally certified teachers, and determine if the financial incentive inherent with the certification process is sufficient to induce certified teachers to choose to work in lower SES or underperforming schools. If this proves to be true, and student achievement rises as a result, the state may wish to adopt similar incentives.



## APPENDICES

## APPENDIX A

### References

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## APPENDIX B

### PROTOCOLS

- Study Of State And Local Barriers Questionnaire
  - Focus Group Protocol



# STUDY OF STATE AND LOCAL BARRIERS TO RAISING ACHIEVEMENT DRAMATICALLY FOR ALL STUDENTS

## 4/17/2008

*My name is \_\_\_\_\_. I am with the Northwest Regional Educational Laboratory. We are conducting a study for the Washington State Board of Education on policies and procedures that impede schools and districts from increasing student achievement. A review of the current research literature has identified a number of potential barriers that are faced by that many schools and districts. While we are also talking to teachers, principals and central district office personnel about perceived barriers, we also wanted to get your opinion as a key leader interested in education issues. I would like to ask you about your opinions about these barriers as they relate particularly to Washington's schools. Are there any questions?*

**Research suggests that the following areas are major barriers to student achievement. We are defining student achievement as meeting or exceeding grade level expectations.**

### Structural Issues

1. **Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.**

- a. **Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	<b>Yes</b>	<input type="radio"/>	<b>No</b>
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**If No, go on to next question.**

- b. **Would you like to say more about this barrier?**

- c. **If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	<b>High</b>	<input type="radio"/>	<b>Medium</b>	<input type="radio"/>	<b>Low</b>
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- d. **Is this a state or local responsibility?**

- e. **How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	<b>High</b>	<input type="radio"/>	<b>Medium</b>	<input type="radio"/>	<b>Low</b>
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2. **Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.**

a. **Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	Yes	<input type="radio"/>	No
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**If No, go on to next question.**

b. **Would you like to say more about this barrier?**

c. **If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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d. **Is this a state or local responsibility?**

e. **How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

3. **Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instructional time.**

a. **Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	Yes	<input type="radio"/>	No
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**If No, go on to next question.**

b. **Would you like to say more about this barrier?**

c. **If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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d. **Is this a state or local responsibility?**

e. **How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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4. **Lack of school staff with expertise in how to focus school improvement efforts.**

a. **Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	<b>Yes</b>	<input type="radio"/>	<b>No</b>
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**If No, go on to next question.**

b. **Would you like to say more about this barrier?**

c. **If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	<b>High</b>	<input type="radio"/>	<b>Medium</b>	<input type="radio"/>	<b>Low</b>
-----------------------	-------------	-----------------------	---------------	-----------------------	------------

d. **Is this a state or local responsibility?**

e. **How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	<b>High</b>	<input type="radio"/>	<b>Medium</b>	<input type="radio"/>	<b>Low</b>
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5. **Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.**

a. **Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	<b>Yes</b>	<input type="radio"/>	<b>No</b>
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**If No, go on to next question.**

b. **Would you like to say more about this barrier?**

c. **If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	<b>High</b>	<input type="radio"/>	<b>Medium</b>	<input type="radio"/>	<b>Low</b>
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d. **Is this a state or local responsibility?**

e. **How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	<b>High</b>	<input type="radio"/>	<b>Medium</b>	<input type="radio"/>	<b>Low</b>
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6. Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction.

a. Do you agree that this is a problem in Washington schools and districts?

<input type="radio"/>	Yes	<input type="radio"/>	No
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If No, go on to question 8.

b. Would you like to say more about this barrier?

c. If this barrier could be removed, what would be the impact on increased student achievement?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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d. Is this a state or local responsibility?

e. How would you rate the (State's or District's) ability to eliminate this barrier?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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### Financial Resources

7. Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.

a. Do you agree that this is a problem in Washington schools and districts?

<input type="radio"/>	Yes	<input type="radio"/>	No
-----------------------	-----	-----------------------	----

If No, go on to question 6.

b. Would you like to say more about this barrier?

c. If this barrier could be removed, what would be the impact on increased student achievement?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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d. Is this a state or local responsibility?

e. How would you rate the (State's or District's) ability to eliminate this barrier?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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8. School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.

a. Do you agree that this is a problem in Washington schools and districts?

<input type="radio"/>	Yes	<input type="radio"/>	No
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If No, go on to next question .

b. Would you like to say more about this barrier?

c. If this barrier could be removed, what would be the impact on increased student achievement?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

d. Is this a state or local responsibility?

e. How would you rate the (State's or District's) ability to eliminate this barrier?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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**People Resources**

9. Lack of administrative capacity to effectively focus improvement efforts.

a. Do you agree that this is a problem in Washington schools and districts?

<input type="radio"/>	Yes	<input type="radio"/>	No
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If No, go on to next question

b. Would you like to say more about this barrier?

c. If this barrier could be removed, what would be the impact on increased student achievement?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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d. Is this a state or local responsibility?

e. How would you rate the (State's or District's) ability to eliminate this barrier?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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**10. Lack of a coherent system for supporting the entry, development, and retention of quality staff.**

**a. Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	Yes	<input type="radio"/>	No
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**If No, go on to next question**

**b. Would you like to say more about this barrier?**

**c. If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

**d. Is this a state or local responsibility?**

**e. How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

**11. Inability to dismiss ineffective staff.**

**a. Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	Yes	<input type="radio"/>	No
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**If No, go on to next question.**

**b. Would you like to say more about this barrier?**

**c. If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

**d. Is this a state or local responsibility?**

**e. How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

**12. Inability to enact differential pay for staff.**

**a. Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	Yes	<input type="radio"/>	No
-----------------------	-----	-----------------------	----

**If No, go on to next question.**

**b. Would you like to say more about this barrier?**

**c. If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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**d. Is this a state or local responsibility?**

**e. How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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**13. Lack of strategic alignment between professional development and school/district goals.**

**a. Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	Yes	<input type="radio"/>	No
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**If No, go on to next question.**

**b. Would you like to say more about this barrier?**

**c. If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

**d. Is this a state or local responsibility?**

**e. How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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**14. Lack of time for professional development and teacher collaboration time.**

**a. Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	Yes	<input type="radio"/>	No
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**If No, go on to next question.**

**b. Would you like to say more about this barrier?**

**c. If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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**d. Is this a state or local responsibility?**

**e. How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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**15. Inadequate incentives for the best qualified staff to go to the highest-need schools.**

**a. Do you agree that this is a problem in Washington schools and districts?**

<input type="radio"/>	Yes	<input type="radio"/>	No
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**If No, go on to next question.**

**b. Would you like to say more about this barrier?**

**c. If this barrier could be removed, what would be the impact on increased student achievement?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

**d. Is this a state or local responsibility?**

**e. How would you rate the (State's or District's) ability to eliminate this barrier?**

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

16. Classes are too large for teachers to be able to teach effectively.

a. Do you agree that this is a problem in Washington schools and districts?

<input type="radio"/>	Yes	<input type="radio"/>	No
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If No, go on to next question.

b. Would you like to say more about this barrier?

c. If this barrier could be removed, what would be the impact on increased student achievement?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
-----------------------	------	-----------------------	--------	-----------------------	-----

d. Is this a state or local responsibility?

e. How would you rate the (State's or District's) ability to eliminate this barrier?

<input type="radio"/>	High	<input type="radio"/>	Medium	<input type="radio"/>	Low
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*Thank you for participating in our study.*

# Teacher Focus Group Protocol

4/14/08

Thank you for agreeing to participate in this focus group to identify barriers to school/district improvement. As you probably already know, we are collecting information from teachers, principals and district staff members about the important work you are doing in your schools. Specifically, the State Board of Education has contracted with NWREL to conduct a study of barriers—policies and practices—that hinder efforts in districts and schools to substantially increase student achievement. While we recognize that there are numerous factors that may impact student achievement, we are charged with focusing on barriers that arise from local, state, and federal policies or lack thereof.

Before we get started, it's important to let you know that your identity will not be revealed and comments you make will not be directly attributed to you personally, though the input you provide will be used in a report to the state board of education. Any questions?

**1. How long have each of you been working as a teacher? How long have you been working as a teacher in this school, and what is your current role?**

**2. School Improvement Plan and Special Areas of Program Focus to Address Student Achievement**

- a. The state requires schools to develop a school improvement plan to address student achievement.
  - What was the process for developing your school's improvement plan?
  - Is your building plan as currently written, focused on changing things that you feel hold the potential to improve student achievement?

Possible probing questions

- Describe the process for getting 'buy-in' or consensus on the plan?
- How engaged are teachers/administrators in using the plan to guide teaching/learning or making important decisions?

- b. Think about the outside programs or assistance that your school is currently using (e.g. OSPI, a university, a consulting group, etc.) to help with your school improvement efforts.
- What are these programs or kinds of assistance that your school is using?

Possible probing questions

- Do partners appear to be working in a coherent way in support of your school improvement plan?
- How effective would you rate each of these efforts and why?
- Are there any curriculum-related barriers that keep you from increasing student achievement?
- How do you keep students engaged and motivated to learn? Which policies or programs currently support these efforts? Are there others you would suggest that are not in place?

**3. Financial, Data, and Assessment Resources**

- a. Think about the ways in which your school's budget is being spent.
- How does current spending support student learning? Create barriers to improving student learning?
  - Some educators feel that teachers teaching fewer students at a time can provide better help for students and more effective instruction. Are budgets sufficient to reduce class size to an effective student/teacher ratio? How would lower student-teacher ratios overall result in more effective classroom teaching and learning?
  - What data resources are available to you at the school and district level to evaluate gaps in student skills and knowledge? What systems are in place to actively monitor student learning?

Possible probing questions

- How has your school used such data in planning school improvement?
- Does your school use formative/diagnostic assessments in its classrooms to monitor student achievement? If yes, are these assessments routinely utilized in all classrooms in the school? All classrooms across the district? How have these assessments impacted classroom instruction and student achievement?
- What data would be useful, in addition to what you already have, in assisting you to meet the needs of all students?

#### **4. People**

- a. Please consider the leadership/management structure in your building.
  - Instructional leadership is an important ingredient in school improvement – how does it help or hinder efforts in your school/district?
  - What changes would you make in the leadership/management structure to facilitate school improvement and student learning? What authority or other tools are missing?
  - How does your school/district address teacher hiring and retention? How does teacher mobility affect your efforts to improve student learning?
  - What incentives would be effective to prevent teacher turnover?
  - In what ways have your personnel evaluations helped improve your teaching? If they have not, how could the evaluation or the process be improved?
  - Are there *incentives* that you believe would make working in a low-performing school worthwhile? (Additional pay; loan forgiveness; more responsibility; collaboration with other like-minded educators; involvement in new models of reform)

#### **5. Time**

- a. Think about your school's academic calendar and daily schedule.
  - How is the time in the school year and day determined?– by the principal, by the contract, by consensus reached through leadership or curricular teams?
  - What are some ways that time could be used differently or more effectively to increase student achievement in your school? For example, would changing the school day or calendar year help to improve student achievement in your school? What other ways of using time differently would you expect to have a positive impact on student learning?
  - How much time do teachers at your school have for meeting with the principal and other staff for planning, analyzing student work, and devising appropriate response and interventions for specific students or for underserved curricular areas? If you had more time to collaborate with other teachers, how would you suggest it be used to more effectively increase student achievement in your school?

#### **6. State or Local Policy Barriers to Student Achievement**

- a. Think about state and local policy barriers to student achievement
  - What is the one policy the state or district could change that would help you in your work to improve student achievement?

## APPENDIX C

### List of Key Stakeholders



## List of Key Stakeholder Representatives

	role
Glenn Anderson	Representative
John Aultman	OSPI, Asst Supt. Career and College Readiness
Don Barlow	Representative
Twyla Barnes	ESD 112
Bill Williams Laura Bay Kim Howard	WA State PTA
Terry Bergeson	OSPI, Superintendent
Ben Cabildo	AHANA
Laurie Dolan	Governor's Office, Policy Office Director
Dan Goldhaber	University of Washington
Jane Gutting	ESD 105
Kathy Haigh	Representative
Bob Harmon	OSPI, Special Programs
Judy Hartman	Governor's Office, Senior Policy
Ross Hunter	Representative
Bill Keim	ESD 113
Curtis King	Senator
Gary Kipp	Director, Wash School Principals (AWSP)
Frank Kline	WA Assn of Colleges for Teacher Ed (WACTE)
Chris Korsmo	League of Education Voters
Martharose Laffey Marilee Scarerough	WA State School Directors (WSSDA)
Mary Lindquist	WA Education Assoc (WEA)
Lisa Macfarlane	League of Education Voters
Rosemary McAuliffe	Senator
Rich McBride	ESD 171
Corrine McGuigan	OSPI Research and Ed Dev
Stephen Mullin	Washington Roundtable
Janell Newman	OSPI, District and School Improvement
Jennifer Priddy	OSPI, Financial Resources
Skip Priest	Representative
Dave Quall	Representative
Paul Rosier	WA State School Admin (WASA)
Rodney Tom	Senator
Kevin Washington	Tabor 100
Deborah Wilds	College Success Foundation



## APPENDIX D

### Study of Barriers Summary Statistics



Table D-1  
Teachers' Perception of Level of Impact on Student Achievement if Barrier is Removed

Item	Barrier	Low	Medium	High	Mean	Standard Deviation
16	Classes are too large for teachers to be able to teach effectively.	4.2% (2)	10.4% (5)	85.4% (41)	2.81	0.491
7	Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.	8.7% (4)	19.6% (9)	71.7% (33)	2.63	0.645
10	Lack of a coherent system for supporting the entry, development, and retention of quality staff.	10.6% (5)	29.8% (14)	59.6% (28)	2.49	0.688
14	Lack of time for professional development and teacher collaboration time.	16.7% (8)	25.0% (12)	58.3% (28)	2.42	0.767
2	Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.	19.1% (9)	25.5% (12)	55.3% (26)	2.36	0.792
8	School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.	22.2% (10)	20.0% (9)	57.8% (26)	2.36	0.830
1	Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.	12.5% (6)	50.0% (24)	37.5% (18)	2.25	0.668
4	Lack of school staff with expertise in how to focus school improvement efforts.	40.0% (18)	22.2% (10)	37.8% (17)	1.98	0.892
15	Inadequate incentives for the best qualified staff to go to the highest-need schools.	35.6% (16)	31.1% (14)	33.3% (15)	1.98	0.839
13	Lack of strategic alignment between professional development and school/district goals.	38.3% (18)	38.3% (18)	23.4% (11)	1.85	0.780
9	Lack of administrative capacity to effectively focus improvement efforts.	46.8% (22)	29.8% (14)	23.4% (11)	1.77	0.813
11	Inability to dismiss ineffective staff.	50.0% (24)	27.1% (13)	22.9% (11)	1.73	0.818
5	Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.	47.9% (23)	33.3% (16)	18.8% (9)	1.71	0.771
3	Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.	48.9% (23)	36.2% (17)	14.9% (7)	1.66	0.731
6	Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction	57.4% (27)	21.3% (10)	21.3% (10)	1.64	0.819
12	Inability to enact differential pay for staff.	91.3% (42)	4.3% (2)	4.3% (2)	1.13	0.453

Table D-2  
 Union Teacher Representatives' Perception of Level of Impact on Student Achievement if Barrier is Removed

Item	Barrier	Low	Medium	High	Mean	Standard Deviation
16	Classes are too large for teachers to be able to teach effectively.	--	--	100(19)	3.00	.000
7	Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.	5.9%(1)	11.8%(2)	82.4%(14)	2.76	.562
10	Lack of a coherent system for supporting the entry, development, and retention of quality staff.	10.5%(2)	31.6%(6)	57.9%(11)	2.47	.697
2	Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.	21.1%(4)	21.1%(4)	57.9%(11)	2.37	.831
1	Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.	5.3%(1)	57.9%(11)	36.8%(7)	2.32	.582
8	School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.	31.6%(6)	15.8%(3)	2.6%(10)	2.21	.918
14	Lack of time for professional development and teacher collaboration time.	36.8%(7)	26.3%(5)	36.8%(7)	2.00	.882
13	Lack of strategic alignment between professional development and school/district goals.	42.1%(8)	42.1%(8)	15.8%(3)	1.74	.733
6	Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction	52.9%(9)	29.4%(5)	17.6%(3)	1.65	.786
5	Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.	52.6(10)	31.6%(6)	15.8%(3)	1.63	.761
3	Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.	52.6%(10)	36.8%(7)	10.5%(2)	1.58	.692
15	Inadequate incentives for the best qualified staff to go to the highest-need schools.	64.7%(11)	17.6%(3)	17.6%(3)	1.53	.800
9	Lack of administrative capacity to effectively focus improvement efforts.	72.2%(13)	5.6%(1)	22.2%(4)	1.50	.857
4	Lack of school staff with expertise in how to focus school improvement efforts.	76.5%(13)	11.8%(2)	11.85(2)	1.35	.702
11	Inability to dismiss ineffective staff.	78.9%(15)	15.8%(3)	5.3%(1)	1.26	.562
12	Inability to enact differential pay for staff.	88.9%(16)	--	11.1%(2)	1.22	.647

Table D-3  
Principals' Perception of Level of Impact on Student Achievement if Barrier is Removed

Item	Barrier	Low	Medium	High	Mean	Standard Deviation
14	Lack of time for professional development and teacher collaboration time.	10.8% (4)	8.1% (3)	81.1% (30)	2.70	0.661
11	Inability to dismiss ineffective staff.	10.8% (4)	29.7% (11)	59.5% (22)	2.49	0.692
7	Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.	13.5% (5)	24.3% (9)	62.2% (23)	2.49	0.731
3	Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.	22.2% (8)	27.8% (10)	50.0% (18)	2.28	0.815
15	Inadequate incentives for the best qualified staff to go to the highest-need schools.	27.0% (10)	27.0% (10)	45.9% (17)	2.19	0.845
2	Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.	30.6% (11)	22.2% (8)	47.2% (17)	2.17	0.878
8	School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.	37.1% (13)	20.0% (7)	42.9% (15)	2.06	0.906
1	Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.	29.7% (11)	43.2% (16)	27.0% (10)	1.97	0.763
6	Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction	47.4% (18)	18.4% (7)	34.2% (13)	1.87	0.906
10	Lack of a coherent system for supporting the entry, development, and retention of quality staff.	48.6% (18)	16.2% (6)	35.1% (13)	1.86	0.918
4	Lack of school staff with expertise in how to focus school improvement efforts.	48.6% (18)	21.6% (8)	29.7% (11)	1.81	0.877
9	Lack of administrative capacity to effectively focus improvement efforts.	51.4% (19)	24.3% (9)	24.3% (9)	1.73	0.838
13	Lack of strategic alignment between professional development and school/district goals.	52.6% (20)	23.7% (9)	23.7% (9)	1.71	0.835
16	Classes are too large for teachers to be able to teach effectively.	52.6% (20)	23.7% (9)	23.7% (9)	1.71	0.835
12	Inability to enact differential pay for staff.	54.1% (20)	29.7% (11)	16.2% (6)	1.62	0.758
5	Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.	56.8% (21)	32.4% (12)	10.8% (4)	1.54	0.691

Table D-4  
 Superintendents' Perception of Level of Impact on Student Achievement if Barrier is Removed

Item	Barrier	Low	Medium	High	Mean	Standard Deviation
7	Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.	0.0% (0)	5.0% (1)	95.0% (19)	2.95	0.224
14	Lack of time for professional development and teacher collaboration time.	10.0% (2)	0.0% (0)	90.0% (18)	2.80	0.616
8	School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.	15.0% (3)	5.0% (1)	80.0% (16)	2.65	0.745
11	Inability to dismiss ineffective staff.	15.0% (3)	15.0% (3)	70.0% (14)	2.55	0.759
4	Lack of school staff with expertise in how to focus school improvement efforts.	20.0% (4)	15.0% (3)	65.0% (13)	2.45	0.826
10	Lack of a coherent system for supporting the entry, development, and retention of quality staff.	21.1% (4)	15.8% (3)	63.2% (12)	2.42	0.838
2	Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.	20.0% (4)	20.0% (4)	60.0% (12)	2.40	0.821
15	Inadequate incentives for the best qualified staff to go to the highest-need schools.	36.8% (7)	0.0% (0)	63.2% (12)	2.26	0.991
1	Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.	25.0% (5)	30.0% (6)	45.0% (9)	2.20	0.834
3	Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.	36.8% (7)	15.8% (3)	47.4% (9)	2.11	0.937
9	Lack of administrative capacity to effectively focus improvement efforts.	47.4% (9)	15.8% (3)	36.8% (7)	1.89	0.937
16	Classes are too large for teachers to be able to teach effectively.	55.0% (11)	5.0% (1)	40.0% (8)	1.85	0.988
6	Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction	50.0% (9)	16.7% (3)	33.3% (6)	1.83	0.924
12	Inability to enact differential pay for staff.	52.4% (11)	23.8% (5)	23.8% (5)	1.71	0.845
13	Lack of strategic alignment between professional development and school/district goals.	61.1% (11)	11.1% (2)	27.8% (5)	1.67	0.907
5	Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.	68.4% (13)	15.8% (3)	15.8% (3)	1.47	0.772

Table D-5  
Stakeholders' Perception of Whether the Barrier is a Problem in Washington Schools and Districts

Item	Barrier	Yes	No	Not Applicable
1	Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.	88.2% (30)	11.8% (4)	--
2	Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.	88.2% (30)	11.8% (4)	--
3	Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.	73.5% (25)	26.5% (9)	--
4	Lack of school staff with expertise in how to focus school improvement efforts.	66.7% (22)	33.3% (11)	--
5	Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.	41.2% (14)	55.9% (19)	--
6	Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction	79.4% (27)	20.6% (7)	--
7	Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.	91.2% (31)	8.8% (3)	--
8	School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.	64.7% (22)	29.4% (10)	5.9% (1)
9	Lack of administrative capacity to effectively focus improvement efforts.	73.5% (25)	23.5% (8)	2.9% (1)
10	Lack of a coherent system for supporting the entry, development, and retention of quality staff.	94.1% (32)	5.9% (2)	--
11	Inability to dismiss ineffective staff.	87.9% (29)	9.1% (3)	3.0% (1)
12	Inability to enact differential pay for staff.	72.7% (24)	21.2% (7)	6.1% (2)
13	Lack of strategic alignment between professional development and school/district goals.	57.6% (19)	33.3% (11)	9.1% (3)
14	Lack of time for professional development and teacher collaboration time.	67.6% (23)	26.5% (9)	5.9% (2)
15	Inadequate incentives for the best qualified staff to go to the highest-need schools.	84.8% (28)	12.1% (4)	3.0% (1)
16	Classes are too large for teachers to be able to teach effectively.	60.6% (20)	39.4% (13)	--

Table D-6  
Stakeholders' Perception of Impact on Student Achievement if the Barrier is Removed

Item	Barrier	Low	Medium	High	Mean	Standard Deviation
10	Lack of a coherent system for supporting the entry, development, and retention of quality staff.	0.0% (0)	6.7% (2)	93.3% (28)	2.93	0.254
6	Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction	0.0% (0)	7.7% (2)	92.3% (24)	2.92	0.272
7	Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.	0.0% (0)	10.0% (3)	90.0% (27)	2.90	0.305
14	Lack of time for professional development and teacher collaboration time.	0.0% (0)	13.0% (3)	87.0% (20)	2.87	0.344
13	Lack of strategic alignment between professional development and school/district goals.	0.0% (0)	15.8% (3)	84.2% (16)	2.84	0.375
15	Inadequate incentives for the best qualified staff to go to the highest-need schools.	3.8% (1)	19.2% (5)	76.9% (20)	2.73	0.533
8	School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.	0.0% (0)	28.6% (6)	71.4% (15)	2.71	0.463
9	Lack of administrative capacity to effectively focus improvement efforts.	0.0% (0)	30.4% (7)	69.6% (16)	2.70	0.470
4	Lack of school staff with expertise in how to focus school improvement efforts.	39.1% (9)	56.5% (13)	4.3% (1)	2.65	0.573
2	Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.	3.6% (1)	28.6% (8)	69.7% (19)	2.64	0.559
12	Inability to enact differential pay for staff.	8.3% (2)	20.8% (5)	70.8% (17)	2.63	0.647
16	Classes are too large for teachers to be able to teach effectively.	10.0% (2)	30.0% (6)	60.0% (12)	2.60	0.688
11	Inability to dismiss ineffective staff.	10.7% (3)	21.4% (6)	67.9% (19)	2.57	0.690
1	Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.	6.9% (2)	31.0% (2)	62.1% (3)	2.55	0.632
3	Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.	8.3% (2)	33.3% (8)	58.3% (14)	2.50	0.659
5	Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.	15.4% (2)	23.1% (3)	61.5% (8)	2.46	0.776

Table D-7  
Stakeholders' Perception of Whether the Barrier is a State or Local Responsibility

Item	Barrier	Local	State	Both
1	Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.	10.3% (3)	51.7% (15)	37.9% (11)
2	Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.	16.7% (4)	45.8% (11)	37.5% (9)
3	Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.	4.0% (1)	56.0% (14)	40.0% (10)
4	Lack of school staff with expertise in how to focus school improvement efforts.	14.3% (3)	28.6% (6)	57.1% (12)
5	Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.	30.0% (3)	20.0% (2)	50.0% (5)
6	Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction	3.8% (1)	73.1% (19)	23.1% (6)
7	Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.	0.0% (0)	83.3% (25)	16.7% (5)
8	School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.	4.8% (1)	61.9% (13)	33.3% (7)
9	Lack of administrative capacity to effectively focus improvement efforts.	18.2% (4)	31.8% (7)	50.0% (11)
10	Lack of a coherent system for supporting the entry, development, and retention of quality staff.	6.9% (2)	51.7% (15)	41.4% (12)
11	Inability to dismiss ineffective staff.	32.1% (9)	39.3% (11)	28.6% (8)
12	Inability to enact differential pay for staff.	4.3% (1)	65.2% (15)	30.4% (7)
13	Lack of strategic alignment between professional development and school/district goals.	22.2% (4)	50.0% (9)	27.8% (5)
14	Lack of time for professional development and teacher collaboration time.	14.3% (3)	52.4% (11)	33.3% (7)
15	Inadequate incentives for the best qualified staff to go to the highest-need schools.	8.0% (2)	68.0% (17)	24.0% (6)
16	Classes are too large for teachers to be able to teach effectively.	0.0% (0)	88.2% (15)	11.8% (2)

Table D-8  
Stakeholders' Perception of the Ability of the State or District to Eliminate the Barrier

Item	Barrier	Low	Medium	High	Mean	Standard Deviation
6	Schools do not have sufficient data or sufficient capacity to access and analyze data on individual student performance to improve instruction	3.7% (1)	18.5% (5)	77.8% (21)	2.74	0.526
14	Lack of time for professional development and teacher collaboration time.	8.7% (2)	17.4% (4)	73.9% (17)	2.65	0.647
10	Lack of a coherent system for supporting the entry, development, and retention of quality staff.	10.0% (3)	20.0% (6)	70.0% (21)	2.60	0.675
15	Inadequate incentives for the best qualified staff to go to the highest-need schools.	3.8% (1)	34.6% (9)	61.5% (16)	2.58	0.578
3	Lack of flexibility in the 180-days and 1,000 hours school year requirements to design school days and the school year calendar in ways that would result in more effective instruction time.	8.0% (2)	28.0% (7)	64.0% (16)	2.56	0.651
7	Schools and districts financial resources are insufficient to assure that all students achieve at grade-level.	12.9% (4)	19.4% (6)	67.7% (*21)	2.55	0.723
9	Lack of administrative capacity to effectively focus improvement efforts.	17.4% (4)	21.7% (5)	60.9% (14)	2.43	0.788
13	Lack of strategic alignment between professional development and school/district goals.	10.5% (2)	36.8% (7)0	52.6% (10)	2.42	0.692
8	School and district financial resources are inflexible to target funding where highest needs are to improve student achievement.	22.7% (5)	18.2% (4)	59.1% (13)	2.36	0.848
12	Inability to enact differential pay for staff.	22.7% (5)	18.2% (4)	59.1% (13)	2.36	0.848
4	Lack of school staff with expertise in how to focus school improvement efforts.	23.8% (5)	19.0% (4)	57.1% (12)	2.33	0.856
16	Classes are too large for teachers to be able to teach effectively.	15.0% (3)	40.0% (8)	45.0% (9)	2.30	0.733
1	Lack of coherence across multiple initiatives or programs to sustain an orderly, organized strategy for school change.	27.6% (8)	27.6% (8)	44.8% (13)	2.17	0.848
2	Student support systems, such as counseling, academic remediation, and dropout prevention and intervention services, are fragmented and conducted on an ad hoc basis.	29.6% (8)	25.9% (7)	44.4% (12)	2.15	0.864
11	Inability to dismiss ineffective staff.	29.6% (8)	29.6% (8)	40.7% (11)	2.11	0.847
5	Lack of enough knowledgeable and willing partners from outside the school district to work with schools in their school improvement efforts on a regular and on-going basis.	30.8% (4)	38.5% (5)	30.8% (4)	2.00	0.816

# Serving Every Child Well: Washington State's Commitment to Help Challenged Schools Succeed

Draft Recommendations for the State Board of Education: July 2008

Submitted by *Mass Insight Education & Research Institute* and *Education First Consulting*

## Overview

Washington, like all other states, has a group of schools with students that persistently fail to make progress meeting the state's standards and are reaching the final steps in accountability defined by the federal government under No Child Left Behind. The state has no required intervention mechanism in place to address the schools and districts that do not volunteer to participate in the OSPI school and district improvement programs. The Legislature has asked the State Board of Education to identify the schools that are in the greatest need of assistance (as well as to recognize those that are successful), and to develop a statewide strategy to help the challenged schools improve.

The team selected by the SBE to develop draft recommendations for school turnaround has spent the last several months hearing from stakeholders in Washington about what can be done for the highest-priority schools (those in Tier 4, to be called Priority Schools), as identified by the SBE. There are many viewpoints to consider, as well as national research on what enables schools to become high-performing, even if they are serving high-poverty, high-challenge students. There *are* schools that are serving these students effectively, nationally: proof-points that it can be done.

**With these materials and at the July 24 State Board meeting, we are presenting what we have learned so far and a draft proposal for creating a state-driven approach that can significantly improve highly challenged schools at the district and local level. Our proposal is designed to achieve *transformative change*. These schools and these students need and deserve nothing less.**

Our proposal is a state and local partnership to turn around the Priority Schools, with several key guiding principles. It is solely focused on **student success**, it is **collective** but with absolute **clarity on roles and responsibilities**, there is **reciprocal accountability** and there are **reciprocal consequences** among all stakeholders, it **addresses common barriers** to reform identified by research undertaken this year in Washington State, and there is a **sustained commitment** (financial and otherwise) to this mission. We propose a model we have tentatively called the Innovation Zone, where Priority Schools apply to participate and receive resources and other supports in exchange for meeting specific criteria and benchmarks. While we propose that participation is voluntary initially, there is a point where choosing not to participate is no longer an option and consequences ensue.

We outline the proposal beginning with a diagram on page 8, and continuing with a detailed explanation of the steps of the model on pages 9-15. Since many of the concepts in the model require further explanation, we begin a discussion of the rationale on page 16, including detail on the proposed roles and responsibilities for each state and local entity involved. We then finish with a proposed timeline and

scenarios starting on page 21. We have also included our earlier report, *Draft Findings and Concepts for the State Board of Education: June 2008*, as an attachment.

## **Background and Context for the Project**

In 2006, the Washington State Legislature charged the Washington State Board of Education (SBE) with developing a statewide accountability system that identifies “schools and districts which are successful, in need of assistance, and those where students persistently fail (and)...improvement measures and appropriate strategies as needed.”<sup>1</sup> The Board is developing criteria for an accountability index that will identify schools and districts for both awards and assistance. Over the past few months, the Board’s partners have been working to develop draft strategies and recommendations to assist schools that are not improving.

The goal for this project is for SBE members, staff, consultants and education partners to prepare recommendations and proposals for the 2009 legislative session, as well as for the Joint Basic Education Finance Task Force. While the recommendations will specifically focus on strategies to help the state’s most deeply challenged schools, they will link with the state’s larger accountability system and assistance plans for all schools.

Boston-based Mass Insight Education & Research Institute and Seattle-based Education First Consulting were chosen to assist the Board in developing a draft plan for state and local partnerships to help Washington’s lowest-performing schools improve. The identification of these schools will be based on the accountability index the Board is developing. Our task is not to determine which schools need assistance, but to propose what to do once those Priority Schools have been identified. Mass Insight brings a deep awareness of what’s happening nationally on school intervention strategies, as well as firsthand field experience in school and district improvement efforts in Massachusetts. Education First Consulting brings extensive knowledge of education policy and strategy nationwide, as well as deep engagement in public education in Washington.

**Phase 1 – Outreach and Preliminary Development Work:** Since March, 2008, we have engaged with a broad array of stakeholders in thinking through the nature and the feasibility of various partnership strategies. Along with the findings of a companion study on policy barriers to student achievement completed by the Northwest Regional Education Laboratories, that engagement is coming through surveys of hundreds of Washington educators, interviews with dozens of education and community leaders, union leaders, and a Design Team composed of Washington educators with a deep commitment to helping turn around low-performing schools.

The Design Team members include current superintendents, community and foundation leaders, a National Board Certified Teacher, union leaders, representatives from the business community, and leaders from the professional associations of principals, superintendents, and school board members. We are thrilled that such distinguished (and busy) educators and education supporters have committed to meet at least twice

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<sup>1</sup> RCW 28A.305.130 (4)

to be part of this important work and to help develop concepts and proposals. (See attachment for detail.) Our goal: Ensure that the draft plans reflect both the ideas of those who know Washington's public education and policy landscapes the best and the national research into promising practices in school turnaround. To signal the importance of these proposals being developed by and for Washington, we have titled the project *Serving Every Child Well: Washington State's Commitment to Help Challenged Schools Succeed*.

This report presents a specific set of draft strategies, developed with continuous feedback from the contacts built through the outreach in earlier phases of the project, for the Board to consider at its July meeting. The final phase will use Board feedback to develop a final set of strategies for presentation in September.

### **What do we mean by school turnaround?**

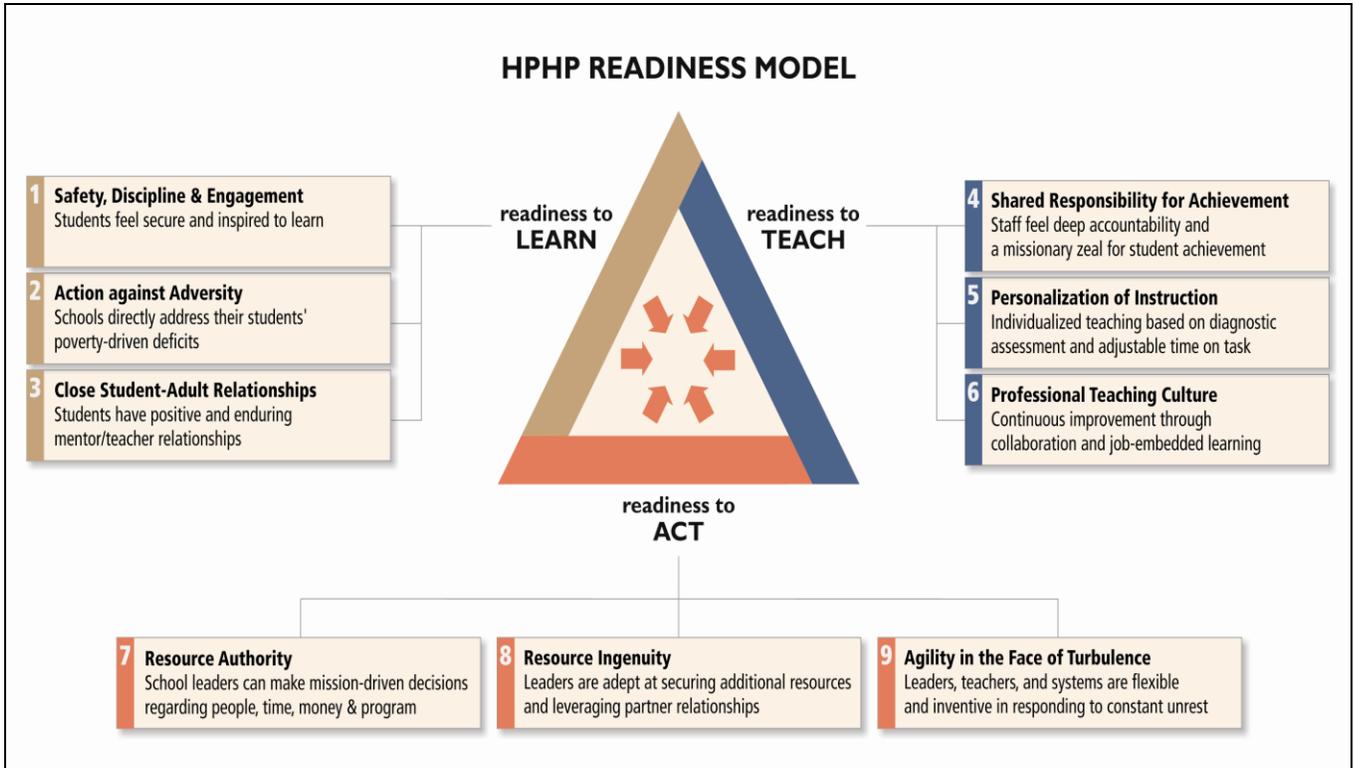
**A common refrain in talking about school turnaround, in Washington State and nationally, is the lack of clarity around what it is, and what defines a *successful* turnaround.** Mass Insight defines school turnaround in our report, *The Turnaround Challenge*, as a dramatic and comprehensive intervention in a low-performing school that produces significant gains in student achievement within two academic years, and that readies the school for the longer process of transformation into a high-performing organization.

While there may be debate as to the length of time turnaround takes, there is no question that we are talking about transformative, not marginal or incremental, change. Most school improvement efforts so far have been about marginal change, and so have led to marginal results.<sup>2</sup>

Because there have been so few successful turnaround efforts nationally to date (and none at scale), our research for *The Turnaround Challenge* focused on a small but growing number of high-performing, high-poverty (HHP) schools and what other research has indicated are the commonalities across those schools. What we found is that schools tend to operate differently from traditional models, whether by original design or by virtue of having a leader who has been able to transform the school by seizing decision-making power. These schools focus on strategies that enable the schools to acknowledge and foster students' *Readiness to Learn*, enhance and focus staff's *Readiness to Teach*, and expand teachers' and administrators' *Readiness to Act*, as seen in the chart below. When we think about what changes need to be made to turn around consistently low-performing schools, we should learn from what has enabled these HHP schools to bring highly challenged populations to high achievement.

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<sup>2</sup> See Mass Insight's 2007 report, *The Turnaround Challenge*, for exhaustive research on this point.



Schools that reflect the elements in the Readiness Model, above, are a compelling blend of traditional ideas in education – good teachers, high expectations, strong curriculum, monitoring of student progress – and new ideas about what it takes to engage and serve today’s disadvantaged students effectively. The question is how schools serving high-challenge, high-poverty student enrollments can move in this direction – what the strategies look like at the school level, and what’s required in terms of capacity and operating conditions that will allow this transformation to happen.

What types of resources, operating conditions and flexibility are required to allow a school to undergo comprehensive, transformative turnaround, rather than another round of incremental improvement? The questions on the following chart provide a short set of what we believe are the most important indicators. They seem simple on one level: of course, any manager given responsibility to undertake the turnaround of an unsuccessful organization should be able to shape his or team and exercise some authority over program and budget. But in the world of public policy and public education, a concerted effort by the rest of the players in the system – the district, the state, the school board, the union, the community – is necessary to create the operating conditions and the capacity for turnaround to be possible.

## What makes it “turnaround” instead of “improvement”?

Benchmark Indicator at the School Level	Priority Schools	
	Ability	Reality
<b>Necessary School-Level Operating Conditions</b>		
<b>People</b>		
Can the turnaround leadership team staff the school as needed? (Hiring/removal/placement, roles)		
<b>Money</b>		
Does the school receive sufficient additional resources to achieve the turnaround plan? (Depending on school size and level: \$250K-\$1M per year, sustained for 3 years, new or reallocated funding)		
Is extra compensation provided to pay staff for extra time, responsibilities, and leadership roles?		
Does the turnaround leadership team have flexibility over how resources are spent?		
<b>Time</b>		
Is the day and year significantly extended to allow for more time for learning and collaborating?		
Does the turnaround leadership have the ability to adjust the school schedule as needed?		
<b>Program</b>		
Does the school enhance students’ readiness to learn by providing significant social supports, such as advisories, counselors, after-school programs, targeted remediation, home outreach, etc?		
Does the leadership team have authority to adjust programming to support the turnaround plan, and to make choices and respond to crises with a minimum of compliance-driven oversight?		
<b>Necessary School-Level Capacity</b>		
Do the school’s principal and turnaround leadership team have the skills necessary for success?		
Is a lead partner organization deeply embedded with school/district leadership to plan and execute turnaround design, make best use of the operating conditions, and align other partners? Is that lead partner present in the school on an intensive basis, and is it contractually accountable for student performance?		

### Guiding Principles for Turnaround in Washington State

Through the extensive conversations we have had with various stakeholders, including the State Board of Education and the Design Team, we have developed general consensus around a set of guiding principles for turnaround in Washington State, which drive the proposals we lay out next.

1. **The initiative is driven by *one* mission: student success.** Whatever the reason, most students are not succeeding in Priority Schools. This initiative is our chance to show that they can – and *how* they can, so that other schools can follow.
2. **The solution we develop is collective.** Every stakeholder may not agree with every strategy; aspects of the solution may call for new thinking and new roles for all participants. But this challenge requires proactive involvement from all of us.

3. **There is *reciprocal accountability* among all stakeholders.** This challenge needs a comprehensive solution that distributes accountability across the key stakeholders: the state, districts, professional associations, schools, and community leaders.
4. **To have meaning, reciprocal accountability is backed by reciprocal consequences.** Everyone lives up to their end of the agreement – or consequences ensue.
5. **The solution directly addresses the barriers to reform.** As identified by Washington State stakeholders, these include inadequate resources; inflexible operating conditions; insufficient capacity; and not enough time.
6. **The solution requires a sustained commitment.** Three years is the minimum commitment to establish benchmarks for improvement and standards for implementation.
7. **The solution requires absolute clarity on roles** – for the state and all of its branches, districts, schools, and partners. From day one.

With these guiding principles in mind, we set out to create a model of a state and local partnership to significantly raise student achievement in the Priority Schools. In this report, we give the initiative the working title of “Innovation Zone.” The data are clear that kids in these schools are not being served well enough. Something different needs to happen: deeper, more innovative reform. This is a mutual state and local responsibility. In the proposed model we outline here (which we will describe in more detail in the next section), the state has a plan that provides support to districts to immediately implement deeper reform: the districts and their partners – and of course the schools themselves – actually implement and deliver the reform, but must meet state criteria. The state offers districts a choice: volunteer and meet the criteria and get the supports, or opt out and meet performance goals on their own. **In some ways, the Innovation Zone provides Washington State with the opportunity to practice a new, deeper level of standards-based reform than has been in place here thus far: more extensive resources, assistance, and latitude for implementation, in exchange for clearer accountability for results and real consequences if goals are not met.** (It has been interesting, and gratifying, to see how well this point has been received by various stakeholders.) Legislators and State Board members have welcomed the clearer lines of accountability and expressed a willingness to consider greater investment as the quid pro quo; practitioners and local board members have welcomed the additional supports and operating flexibilities and have expressed a willingness to accept greater accountability in exchange.

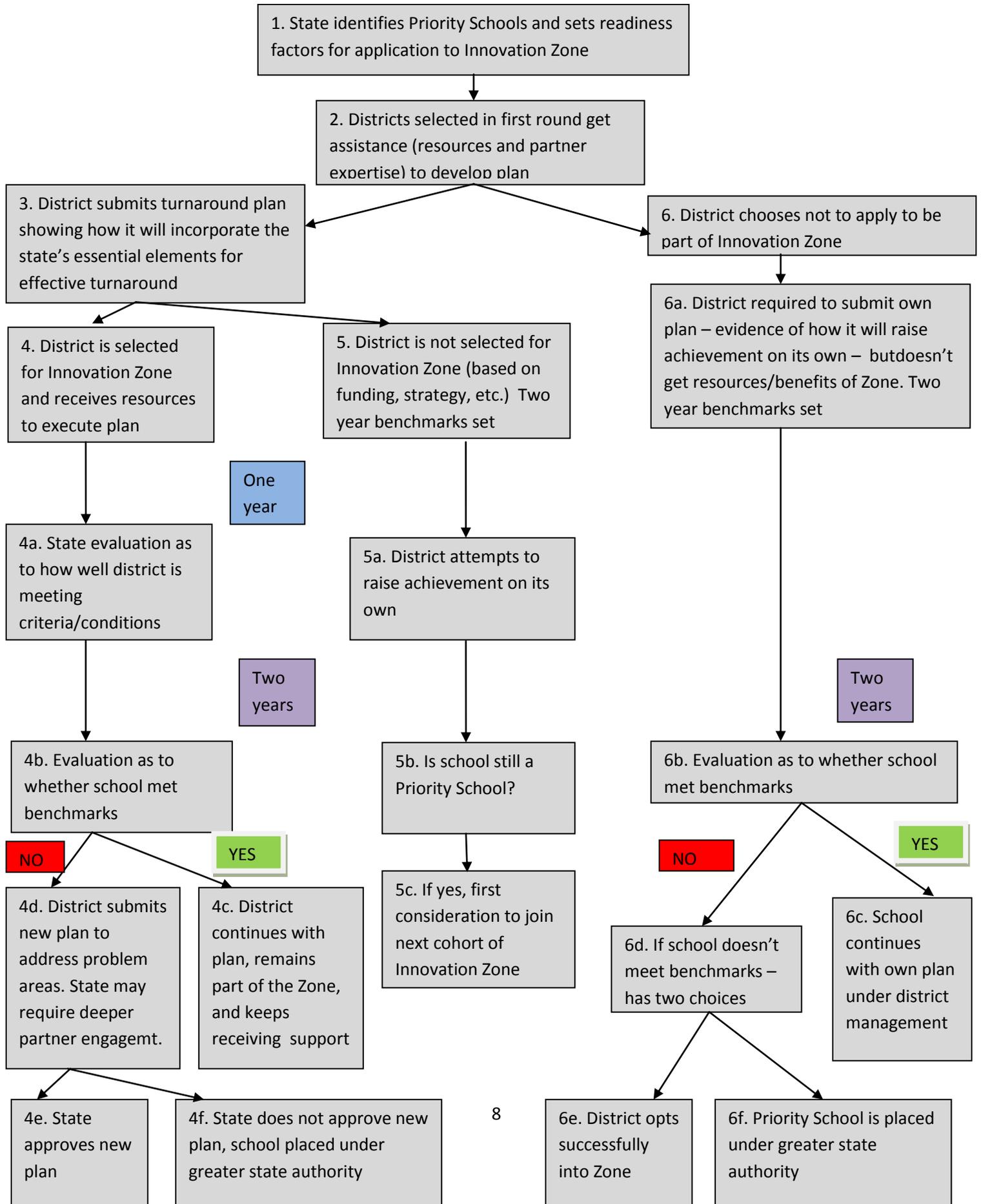
Along with the Guiding Principles, we kept the barriers identified by the Northwest Regional Education Laboratory study in mind when creating this model. This study asked the people closest to the work – teachers, principals, union leaders, district administrators, and other key stakeholders – what keeps them from increasing student achievement. The solutions to the barriers that all groups ranked as high in the impact there would be on student achievement if they were removed and high in the state’s ability to remove them include sufficient funding, operating flexibility, a coherent system for supporting the entry, development, and retention of quality staff, and time for professional development and teacher collaboration.

This would be a new kind of standards-based partnership arrangement for Washington State. Accordingly, we believe (and so do most stakeholders we've talked to) that the initiative should be introduced on an opt-in basis – that is, districts should be given a choice at the outset of this new state initiative. All schools would be held to performance goals after the first two full years of implementation; after all, they have all had substantial time (at least five years) to identify their areas of challenge and address them successfully. But districts could decide whether to embrace the deeper level of standards- and accountability-based partnership with the state in order to meet those goals, or to continue to try to meet them on their own. After two years of implementation (which may amount to three years from the establishment of the new policy and after including sufficient time for planning and recruitment), the following would take place:

- Those who are in the Zone who meet benchmarks keep going and continue to receive support
- Those who are in the Zone who don't meet benchmarks submit a new plan that addresses areas of concern. The state can either approve the new plan and allow the school to continue in the zone, or not approve it and place the school under greater state authority.
- Those who chose not to participate in the beginning and who continue to be a Priority School face a mandated choice: either opt into the zone (which allows for shared management with the state) or cede some authority to the state (for example, have the school placed in a state turnaround district)
- Those who volunteered originally and met the criteria but weren't chosen to be part of the first cohort get first consideration to join the Zone on the same basis as before – the district still manages the Priority School(s) meeting state criteria, just like first cohort of Innovation Zone schools

This model, we believe, offers an appropriate mix of local options, within a framework of genuine accountability and consequences, to spur a proactive response from districts on behalf of their most underperforming schools. It will only work, however, if the state provides sufficient resources and facilitates the flexible operating conditions required to enable educators at the ground level to do their best work. In the absence of those supports, the field will lump this initiative with their perception of the first round of standards-based reform in Washington State, which to practitioners has seemed long on higher standards and assessment and short on additional support.

## Proposed model for state/local partnership



## **Step by Step through the Innovation Zone**

The flowchart above illustrates the proposed plan for a state and local partnership to turn around Washington's Priority Schools, with decision point and alternate paths along the way. We envision this as a compact, or contract, between state and local entities, with agreed-upon roles, responsibilities, metrics for success, and consequences. We will now go through each step and the reasoning behind it, and then lay out a timeline and some possible scenarios. The numbers here correspond to the numbers on the chart.

- 1. State identifies Priority Schools and sets readiness factors for application to Innovation Zone.** The first step is the state identification of the Priority Schools. As stated previously, we will not play a role in the identification process. Our advice, however, is that the Priority Schools need to meet a common-sense test: most reasonable people should look at the criteria and their corresponding performance data and conclude that this group of schools clearly and absolutely needs to be helped in very significant ways.

The next part of this initial step is setting readiness factors for participation in the Innovation Zone – that is, what needs to be in place at the district level for the district to apply. This will help define the work to ensure that the Priority Schools opting into the state's Innovation Zone are ready to undertake turnaround on a transformative, comprehensive basis. This is a vital role that the State Board needs to play. It is not intended as a compliance burden for districts, but as a constructive set of preconditions that ensures that the districts selected move forward more quickly, more easily, and more successfully in their planning for turnaround. We will continue to discuss what the right elements are; what follows is an initial set of possibilities.

### **Readiness factors for application to Innovation Zone**

- The district is implementing curricula that are aligned with state frameworks.
- Local stakeholders (school board, superintendent, principal, union leader) are in alignment about working together to turn around the school(s) and have a track record of collaboration.
- The local leadership, particularly the principal(s), can demonstrate a clear understanding of the issues and the need to implement transformative changes.
- There is some existing outside capacity at the local level (including partners that may already be working in the district and community groups) that can play a role in turning around the school.
- The district has systems in place for staff and leadership development, including mentoring new teachers and supporting school leadership teams.

- The district has a system for using interim assessments and data analysis of assessment results to inform instruction.<sup>3</sup>

### **Benefits of participation in Innovation Zone**

- The Innovation Zone fulfills the Guiding Principles, including that the solution is collective and focused tightly on student achievement – the core mission of schools.
- Participating schools receive significant additional financial resources to implement turnaround plan (exact amount to be determined) – and a multi-year state commitment to fund at adequate levels.
- Participating schools receive other resources, such as technical assistance in developing a turnaround plan and additional state intervention supports.
- Multi-year state commitment to supporting and creating the necessary conditions for success in Priority Schools that address the primary barriers within these schools. The Innovation Zone is a “protected space.”
- Reduced compliance and regulatory burdens to allow school leaders to focus on achievement.
- Access to turnaround partner organizations whose capacities are being supported and expanded by the state.
- Contract with reciprocal accountability and reciprocal consequences to instill confidence in the commitment of all stakeholders.

Once the Priority Schools have been identified, districts with at least one Priority School are eligible to submit an outline of a plan that meets the readiness factors. This is a decision point for districts with Priority School(s) – they can either choose to submit a plan to participate in the Innovation Zone or not. First, we will describe what happens if they do submit a plan, and later we will describe what will happen if they choose not to participate (#6).

**Districts may submit preliminary plans on behalf of either only their Priority School(s) or a group of schools containing the Priority School(s) so that reform can be more systemic.** This idea arose from our Design Group discussions, where there was strong counsel from superintendents and others that turnaround not be confined to reform strategies at single schools. For example, if a district has one middle school identified as a Priority School, it may decide to submit the outline of a plan for only that school, or for that school and the two elementary schools that feed into it, or for all three of its middle schools. In addition, a group of districts in a region (likely small districts with single Priority schools) may respond in a regional cluster, organized around a particular level or

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<sup>3</sup> Whether this is required could depend on the state taking a role in implementing the necessary data and assessment systems, either just in the Priority Schools or across the state.

strategy. (For example: a new-model high school with career-academy approach.) The outline shows how the district meets the state’s readiness factors and how it plans to use additional resources to meet its achievement goals.

During this phase of setting up the Priority Schools initiative, the State Board should take a proactive leadership role with OSPI in building and informing the resource base of turnaround partner organizations actively working in the state. Washington has many local organizations (and individuals, including improvement specialists consulting with OSPI) that currently work with schools in various capacities. This fragmented resource base could become, with training and structured support from the state, a much deeper source of “bench strength” for districts and schools entering into the Innovation Zone. That resource could (and should) be supplemented by more intensive involvement in Washington State by national organizations working successfully in other states – New Leaders for New Schools, the New Teacher Project, First Things First, the Institute for Student Achievement, and others. These organizations are not active in the state because there has been little demand for them. One or more of them could be recruited to serve, along with OSPI and/or local educators and reform experts, as the “trainer of trainers” – the consortium responsible for helping to build Washington State’s turnaround partner capacity. OSPI has done some initial work in this area with the RFPs it put out for organizations to work with districts in its DCIA program, which have already brought some noteworthy national organizations (such as WestEd) into the state.

- 2. Districts selected in first round get assistance (resources and expertise) to develop a comprehensive turnaround plan.** Once the eligible districts have submitted an outline, the State Board (with OSPI) will select those that meet the required elements to move forward to the next step, which is receiving funding and resources to support the development of a full plan. The full plan should address specific issues driven by data and the diagnostic process that schools went through before being identified as a Priority School. It should also demonstrate how the local entities (superintendent, school board, principal, union leader) are in alignment and plan to work together to implement the plan. Resources at this point could include OSPI help in further diagnostic work, assistance with data analysis and determining data-driven solutions, and planning support from a partner organization.

Turnaround plans need to show how the district will address the following elements of turnaround:

- The school’s principal and leadership team have the authority to select, assign, and dismiss staff as needed in order to implement the school’s turnaround plan.
- The school’s principal and leadership team have the authority to allocate financial resources in accordance with the turnaround plan, including the ability to pay staff for additional time and responsibilities.
- The school schedule provides adequate time for student learning and support, particularly for at-risk students, and the school’s principal and leadership team have the ability to adjust

the schedule as needed to support the turnaround plan. This will almost certainly mean extending the school day and/or school year.

- The school schedule and calendar provide adequate time for regular faculty planning, collaboration and professional development aligned with the school turnaround plan.
- The school turnaround plan includes a lead partner organization that brings critical capacities to turnaround planning and implementation, and helps to integrate the work of all other partners, subcontractors, agencies, and state support. (This could be a requirement if districts are not able to show they have capacity to develop or implement a turnaround plan on their own or once a district reaches one of the mandatory stages of participation).

There are two ways for the state, districts, and other stakeholders to approach establishing the conditions necessary to meet the criteria, especially where they overlap with practices governed by collective bargaining agreements. One is that the state can leave it up to local districts to collaborate on any necessary changes for these schools with the local union, and those that can't come to agreement won't be able to participate. (The state's role could be to collect and provide examples and model template language from existing contracts in Washington or from other states.) The other approach is for the state to mandate condition changes for this specific group of schools through legal and regulatory means, or to negotiate language for use statewide with relevant organizations, including the WEA (which has been an active participant in this design process.) There are examples of collaboratively produced language in some local contracts already, such as Seattle's, and these could provide at least a partial basis for templates to be used by Priority School districts across the state.

**3. Districts submit complete turnaround plan for approval by the State Board.** Once the plans are submitted, they are evaluated and decisions made about who will be part of the initial cohort of the Innovation Zone. OSPI should manage the review process, and make recommendations to the Board. The Board will make its selections based on a series of considerations, including:

- Strength of the proposal and degree to which it specifically fulfills the Board's turnaround criteria
- Funding availability (number of schools state is able to fund and at what level)
- Strategy around regions/locations, school levels, district capacity, partner support, likelihood of success

Our advice to the Board in making these selections is straightforward: *maximize the chances for success*. That may mean, for example, limiting the number of turnaround clusters that can be served in the initial pilot for this initiative, in order to avoid the "peanut butter" effect of spreading resources too thinly across too many schools to have much impact. It might also mean choosing some clusters over others with equal or greater needs, simply because in the judgment of OSPI and the Board, the former are readier to fully embrace the changes reflected in the state turnaround

criteria. *The point is that the state's highest priority in this initial implementation of this initiative is not to serve every district, community, school, and child who needs help.* The highest priority is to create a set of exemplars. Educators throughout the state and policymakers alike need to see these exemplars in order to justify funding and supporting their expansion in the years to come.

- 4. District is selected for Innovation Zone and receives resources to execute plan.** Once the districts and schools are chosen, the state board enters into a contract with the local school board. The deep involvement and support of the superintendent and the local union are very desirable, in fact necessary, for a successful plan; however, they are not legal signers of the contract.

The contract is designed to represent the “reciprocal accountability” understanding that provides the basis for this new partnership between the state and the districts. Among other things, it will set goals and interim benchmarks. While the overall goal of turnaround is to close the poverty achievement gap within five years (e.g., to have the Priority Schools meet the state non-poverty achievement average), there are points along the way to determine if the school is moving in the right direction and if not, what to do about it. Those interim indicators include achievement on WASL, but should not be limited to that measurement alone.

Once the contract is signed, the district receives the agreed-upon resources and benefits and moves ahead with implementation.

**4a. After one year, the state evaluates how well the districts are fulfilling the criteria and the terms of their turnaround plan.** While major changes in student achievement could not be expected within one year, the state obviously has a strong interest in monitoring whether districts and schools are on the right track at that point. The state will look at some leading indicators after one full year of implementation (such as student attendance and changes in school climate), as well as tracking how well the districts have been able to implement the “inputs” – the elements of the turnaround plan. The state may look at what changes in staffing have been made or whether the school day or year has been extended to promising effect. If districts have not been able to make such changes in the Priority Schools, the state reserves the right in the contract to require a deeper examination of the plan and the district’s implementation, and to provide additional support to the district as needed to enable the plan to move forward.

**4b. After two full implementation years, the state evaluates whether the Priority Schools have met the benchmarks agreed to in the contract.**

**4c. If YES: The district continues with the original plan, remains part of the Innovation Zone, and continues to receive support.** If the Priority School meets the benchmarks in the contract after two years, it continues to implement its turnaround plan with continued resources and support. There will be further benchmarks specified for at the four or five year points.

**4d. If NO: The district revises and resubmits its turnaround plan to address problem areas identified in the first two years. The state may require the district to engage more deeply with an outside partner.** If the Priority School does not meet benchmarks after two years, this is

another decision point. While we don't believe that missing benchmarks should trigger automatic and absolute consequences, changes need to be made. The district will submit a revised plan explaining how it will address the issues that have prevented it from meeting achievement goals in its turnaround cluster and making the case for why it should be allowed to continue as part of the Innovation Zone. The state has a couple of options:

**4e. The state approves the new plan and allows the district to continue managing the Priority School(s).** If the Board decides that the revised plan shows promise in enabling the district to meet the next set of benchmarks, it can allow the district to continue receiving the benefits of being part of the Zone and continue local control and management of the Priority School(s).

**4f. The state does not approve the revised plan and the Priority School is placed under greater state authority.** If the Board does not think that the district's revised plan will support significantly increased achievement in the Priority School, then it can place it under greater state authority. Exactly what this looks like we will discuss further, but it would include the state taking a greater role in designing and managing the turnaround plan or requiring the use of a lead turnaround partner with significant authority to manage the school. It could also involve mandating operating conditions changes and choosing curricula from a State-designated short list.

**5. District applies to be part of Innovation Zone on behalf of at least one Priority School and meets criteria, but is not selected.** Because of limited resources and other factors, it is possible that a district may choose to be part of the Innovation Zone but not be selected for the initial cohort. The state should try to limit this as much as possible and set expectations about the number of schools that can participate and the availability of funding. Districts will understandably be frustrated if they spend a lot of time and energy on their turnaround plan and then aren't able to participate – but, given the *maximizing success* priority of the state, there may well be some districts in this category.

**5a. The district attempts to raise achievement on its own, without the resources of the Innovation Zone.** While these districts will not receive the resources or benefits of being part of the Zone, the process of creating a turnaround plan would presumably have given them some insight into what challenges they need to address to raise achievement. They cannot be held to the same benchmarks as those who are receiving the benefits of the Zone, but their achievement still is monitored closely.

**5b. After two years, is the school still a Priority School?** Based on the state accountability index, the state would determine whether the schools in the districts that volunteered but weren't selected are still in the Priority School category.

**5c. If yes, first consideration would be given to these schools to join the next cohort of the Innovation Zone.** These districts are given first consideration for entry into the next cohort of the Innovation Zone (when that next cohort begins will be decided based on funding and outcomes from

the first cohort, but after two years is a likely possibility). Their plan would need to address and integrate each of the state's essential elements for turnaround, as was the case for the first cohort.

- 6. District chooses not to apply to be part of the Innovation Zone.** There may be districts that have Priority School(s) that, for a variety of possible reasons, decide not to apply to participate in the Innovation Zone. They may feel that their existing plans for raising student achievement are getting the job done, or they may not trust that the resources and benefits of the Zone will really come through. They may also not be willing or able to meet the criteria that the state sets out for participation. Regardless of the reasons, if a district chooses not to apply, the consequences of that decision are clear up front.

**6a. District is required to submit its own plan for raising achievement in its Priority School(s).**

Districts that choose not to volunteer for the Innovation Zone will still be required to submit evidence of how they plan to address the Priority Schools – as a state-required expansion of the existing school improvement plans. Their plans will be required to address the operating conditions and reform elements raised in the Board's turnaround criteria. They will not receive the resources and benefits of the Zone. Two year benchmarks will be set for these schools.

**6b. After two years, the state will evaluate whether these non-participating Priority Schools (and their districts) were able to meet the benchmarks set out for them.**

**6c. If YES: The district and school(s) continue with their own plan under district management.** If these schools and districts are able to meet benchmarks on their own (and possibly exit Priority School status), then they will be allowed to continue on their own under district management.

**6d. If NO: If the schools don't meet the benchmarks, then there are two options for the district and the state:**

**6e. The district opts into the Innovation Zone and develops a turnaround plan that meets state criteria. This is no longer voluntary at this point – it is now mandatory.**

This is the point where the district no longer gets to decide not to participate – it has had a chance to enter the Zone voluntarily or show that it could raise achievement on its own, and neither happened. The district must meet all the criteria that the state has set for participation in the Zone.

**6f. The Priority School is placed under greater state authority.** If the district either cannot or will not meet state criteria and enter the Innovation Zone on behalf of their Priority School(s), then the state will take greater control of the school. Again, exactly what that looks like will be clarified – and might necessitate some changes in Washington State's legal framework for school governance – but the district will no longer have total control of the school.

## **Rationale and Explanation for Proposed Innovation Zone Model**

As we discussed options for the state/local partnership with stakeholders, several themes kept coming up. One was that while the state is identifying individual schools as Priority Schools, those schools exist within a system and the district must be part of the solution. Another was that the roles, responsibilities, expectations, and consequences for each state and local party need to be explicit from the beginning. The need to build capacity, both inside and outside the system, was also raised numerous times, as was the difficulty in creating the necessary conditions for change when they conflict with local collective bargaining agreements.

We have attempted to address those concerns in the design of the proposed model. Since it is a preliminary design concept, we expect there will be discussion and changes around some of the elements, but there are some that we believe are critical to the success of the effort.

### **School vs. district as the unit of change**

The question of whether the school or district should be the unit of change is a complex one. Schools are where instruction actually happens, but so much of what happens in schools is dictated or controlled by the district. To only focus on individual Priority Schools does not take into account the full context in which those schools function. Districts are reticent to put substantial changes in place for single schools, particularly when there is significant internal student mobility between schools. Single-school reform places a strong focus on an individual school, but it carries significant inefficiencies and it may not provide a systemic solution – i.e., one that is scalable across a larger set of schools. Installing one tremendously gifted principal in one school is not comprehensive turnaround. It may help that school (at least temporarily), and capable leadership is a requirement of any reform effort. But it does not address the larger, systemic challenges that underperforming schools typically face. To paraphrase urban reformer Geoffrey Canada: that kind of approach may help some kids beat the odds – but fails to change the odds.

OSPI is moving in this direction with its new DCIA program, which focuses on districts rather than schools, where it had been mainly focused in the past. In fact, district participants in the DCIA program would be encouraged to fully integrate their turnaround proposals for Priority Schools with their work on the DCIA initiative. Design Team participants likened this to two levels of linked “family health care”: one that involved a fairly intensive wellness campaign (DCIA) and another that focused a deeper level of intervention and care on individual family members (Priority School cohorts) that needed the extra attention. The important thing is to ensure that the two levels of care mesh with each other and do not conflict at the level of the individual patient.

In the Innovation Zone, we propose that districts with at least one Priority School (whether or not they are DCIA districts) apply to be part of the Zone on behalf of at least one school, but that proposals would be considered where the district planned to create a cluster of at least one Priority School with associated schools either at the same level or in the same feeder pattern. This would help address the need to make the reforms more systemic. For small districts, it would also be possible to partner with

other districts that might have a similar need. Clusters of schools that can support and learn from each other are more effective than a plan that focuses solely on the level of the individual school.

**Roles, responsibilities, and consequences**

The concept of reciprocal accountability and reciprocal consequences emerged as a high priority among Design Team members. It arises, in part, from the perception by Washington State practitioners that accountability is something that has been done *to* them, without the state taking on equal accountability to provide the resources necessary to meet higher standards for all students. In practical terms, what this means for the model we have put forth is that in addition to there being consequences for districts that don’t raise achievement in their Priority Schools, if any of the state entities don’t live up to their responsibilities, then the “clock” for consequences at the school level stops.

The exact roles for each state and local entity are something to be discussed further. We envision that the State Board will have a planning and oversight role for the Innovation Zone, and that the day-to-day implementation will be done by a new office of OSPI dedicated to that purpose or increased staff capacity for a new section in the OSPI school and district improvement program. OSPI has deep experience in program implementation and monitoring, and this will help ensure that the interventions for the Priority Schools are connected to other OSPI intervention efforts. The table that follows presents some possibilities:

	<b>Role/Responsibility</b>	<b>Consequences/Accountability</b>
<b>State Board</b>	<ul style="list-style-type: none"> <li>• Set initial factors for participation in Innovation Zone and essential elements required of all turnaround plans for Priority Schools</li> <li>• Selection, approval of plans for Innovation Zone (with OSPI input)</li> <li>• Decision-making authority for Priority Schools that don’t participate – whether they need to be under greater state control</li> <li>• Catalyst in developing deeper role for and marketplace of partner organizations</li> <li>• Determination of what greater state authority looks like</li> </ul>	<ul style="list-style-type: none"> <li>• If requested resources and/or any required state code reforms do not materialize, consequences for Priority Schools (i.e., deeper state authority) must be amended or eliminated, as districts will not have been granted the resources necessary to fulfill the goals.</li> <li>• Consequences: electability or appointment to Board positions if the Board is unable to initiate a program capable of meeting the challenge</li> </ul>

<b>State Legislature</b>	<ul style="list-style-type: none"> <li>• Sustained, adequate funding</li> <li>• Necessary changes to WAC/RCW, as required, to support operating conditions change</li> </ul>	<ul style="list-style-type: none"> <li>• Electability</li> <li>• Public notification that turnaround contracts had to be terminated because of the state’s failure to fulfill its commitments</li> </ul>
<b>OSPI</b>	<ul style="list-style-type: none"> <li>• Diagnostic role and assistance in developing and implementing plans</li> <li>• On-going management of the Zone initiative, in general (led by a new office within OSPI charged with that responsibility)</li> <li>• Recommendations to Board on approval of plans and greater state interventions</li> <li>• Integration of Innovation Zone with other district reform efforts where possible</li> <li>• Assistance on expansion of lead turnaround partner capacity in the state</li> </ul>	<ul style="list-style-type: none"> <li>• Electability (state superintendent)</li> <li>• Performance of OSPI will be part of the Board’s review of turnaround progress in Priority Schools at the two-year mark</li> </ul>
<b>Local school board (with assistance from statewide organization)</b>	<ul style="list-style-type: none"> <li>• Coordinate local efforts to develop turnaround plan with superintendent, principal(s), unions, community</li> <li>• Negotiate as necessary any changes to the bargaining agreement with union locals</li> <li>• Local signatory</li> </ul>	<ul style="list-style-type: none"> <li>• Electability and the local positioning of the school board. (The incentives and accountabilities are similar to those faced by local unions, below.)</li> </ul>

<p><b>Local and statewide teachers union</b></p>	<ul style="list-style-type: none"> <li>• Collaborate with state and local school boards on required contractual changes in order to fulfill state turnaround criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Failure to collaborate successfully will result in weaker turnaround proposals, which may prevent districts from being able to join the Zone and accrue its resources and benefits – not a position any union or association wants to be in. Moreover: the Zone represents the last, best chance for successful, locally-controlled reform. It will be in all local stakeholders’ best interests to collaborate effectively, avoiding the track towards deeper state involvement in the management of Priority schools.</li> </ul>
<p><b>Lead turnaround partner organizations</b></p>	<ul style="list-style-type: none"> <li>• Assist district in developing turnaround plans that meet the state’s essential elements</li> <li>• Work in close conjunction with districts and schools to implement the turnaround plans and lead turnaround effectively (and build on it to help schools become high-performing organizations)</li> <li>• Specifically, work with school/district leadership to coordinate and integrate the work of all subcontracting school partners to ensure coherence with the turnaround plan</li> </ul>	<ul style="list-style-type: none"> <li>• Partners will share accountability for school results. Failure to achieve goals after two years of implementation will result in the termination of the partner’s contract, unless it can clearly be shown that the responsibility for the failure lies elsewhere.</li> </ul>

Determining what a greater state role, taken when districts fail to improve schools enough on their own, should look like is an important part of the next phase of work. This consequence should be serious enough that it motivates districts to volunteer when they have the opportunity. In some ways, this is its primary function, to provide that extra incentive. However, it will need to be genuine in order to be compelling; that is, the state needs to be ready and able to carry it out, when and if schools do reach

that status. At the very least there will be some loss of control by the local district – for example, a requirement by the state (if curriculum choices are seen as part of the problem) that the district adopt curricula from a short-list of materials carrying state approval. There might also be an increased role for a lead turnaround partner organization. This “final consequence” status may require adjustment in some state regulations and codes, but it is a reasonable outcome given the district’s inability to show improvement even with substantial new resources and operating latitude.

### **Role of lead turnaround partner organizations**

Many of the schools that will be Priority Schools (and the districts in which they are located) lack the capacity internally to successfully raise student achievement. This may be for a variety of reasons. Regardless of the reason, capacity needs to be added from outside to accomplish the turnaround, while simultaneously building capacity inside. A lead turnaround partner organization can add that capacity. Currently, Washington State (like virtually all states) lacks a substantial resource base of lead turnaround partners – organizations that are ready to work effectively with schools and districts on turnaround plans that incorporate the essential elements defined earlier in this report.

As discussed above on page 11, the State Board and OSPI should collectively play a catalyst role in developing the marketplace of partner organizations to work with schools in the Innovation Zone. One way to do this is to develop a consortium of organizations that are already working in the state to work with the initial cohort of the Zone, and to actively invite national organizations to enter the state. OSPI might engage a single organization, or a couple working together, to take on the role of building capacity among the state’s existing resource base of school intervention groups and individuals (including OSPI’s school and district improvement specialists and the regional district service centers). The role of the partner should be well defined before the organization begins working with the district and school (and this will be spelled out more fully in the final versions of these materials).

### **Why accomplishing more latitude in operating conditions is so critical**

There are exemplars of schools that serve high poverty, challenging populations well and have strong records of student achievement. The HPHP research we reviewed for *The Turnaround Challenge* indicates that what many of them have in common is they have managed to achieve more flexible *operating conditions* and are able to make the decisions that matter most with their mission and students at the forefront – rather than with other time-bound or organizational priorities in mind. In many schools, far too many decisions are made with the interests of *adults* in mind. These operating conditions include control over resources (fiscal and other), the length and scheduling of school time, school staffing, and programmatic decisions. The leadership team at the school needs to be able to identify and remove the obstacles that are preventing the school from meeting students’ needs.

The schools that have flexible operating conditions have attained them through different means. For some, it’s by virtue of their status as a pilot school (as in Boston) or something similar; for others the flexibilities have been negotiated with the local union (as in Chicago, Miami, and New York City, among other districts); and in some cases an enterprising principal has just insisted on them, despite the

constraints of the system in which he or she is working. The Innovation Zone represents the best opportunity for Priority schools and their districts to institute this operating latitude – a final opportunity, before the state begins to assert more active control in the wake of continuing underperformance. These operating conditions must be set up as essential elements for districts and schools to participate in the initiative, but the greatest chance for successful implementation will be if their development happens locally in a collaborative way involving all stakeholders, at least for the voluntary stages.

## **Timeline**

What follows is a possible timeline for implementing the model have presented here in distilled form. We understand the desire to begin turning around these schools as soon as possible, but we’re also sensitive to the need for adequate planning time to increase the chances for success – a very strong note struck by members of the Design Team. We’re open to any ideas on how to adjust the timeline to meet both of those needs.

Fall 2008	State Board of Education approves proposed direction for Priority Schools and drafts legislative proposals  Accountability index (which will be used to identify Priority Schools) is created
Spring 2009 (May)	Legislative action on Board’s proposals for fiscal year 2009-2010 – authorization, funding, and any necessary changes to WAC/RCW
Summer 2009	First step of recruiting/vetting process for participating districts: Districts with at least one Priority School express initial interest in participating in the Innovation Zone with an outline of a plan that will meet state’s readiness factors  Capacity-building begins among turnaround partner resource base and at OSPI to manage the initiative
Fall 2009	Second step: Districts selected from Step 1 are provided with assistance (resources, expertise in the form of a turnaround partner organization) to create a turnaround plan for participation in the Innovation Zone
Late Fall/Winter 2009	Districts submit turnaround plans; State Board (with OSPI input) selects initial cohort and approves plans  Districts with at least one Priority School who choose not to participate in the Innovation Zone or are not chosen for the initial cohort submit alternate

	<p>plans</p> <p>State sets two year improvement goals for ALL Priority Schools</p>
Jan 2010 – Sept 2010	Districts and schools selected for Innovation Zone, together with their partners, plan for implementation and conditions change
Sept 2010 – Aug 2011	<p>Year 1 of implementation</p> <p>At end of Year 1 of implementation, OSPI evaluates how well districts in Zone are meeting the criteria and conditions; reports to State Board</p>
Sept 2011 – Aug 2012	<p>Year 2 of implementation</p> <p>At end of Year 2 of implementation, evaluation as to whether ALL Priority Schools (and schools that are part of a Priority Schools cluster) have met benchmarks</p> <p>Innovation Zone districts/schools that do not meet benchmarks submit revised plan – State determines whether plan is approved and district continues as part of Zone or not approved and Priority School is placed under greater state authority. New benchmarks set.</p> <p>Non-participating Priority Schools that meet benchmarks continue on their own. Those that do not meet benchmarks either opt into Zone or are placed under greater state authority.</p> <p>Entire program is reviewed and adjusted as needed. If the initiative has produced promising results, State Board considers returning to the Legislature for new dollars to begin a more sizable second cohort.</p>
Sept 2012– Aug 2013	Year 3 of implementation
Sept 2013 – Aug 2014	Year 4 of implementation
Sept 2014 – Aug 2015	<p>Year 5 of implementation</p> <p>Evaluation of benchmarks; whether Priority Schools match average state non-poverty achievement.</p>

## **Scenarios**

**Scenario #1** – School A is identified as a Priority School. School A is a middle school in a mid-sized district with one high school, three middle schools, and 7 elementary schools. The other two middle schools are in Tier 3. The district is eligible to apply to be part of the Innovation Zone on behalf of that one school, or a cluster containing that one school. The district recognizes that all of its middle schools are struggling, and that it would like to address those issues systemically and not just in one school. The district applies to be part of the Innovation Zone with all three of the middle schools and submits a turnaround plan for state approval. Key elements of the turnaround plan include extending the school day by one hour at the three schools and engaging an outside partner to lead the turnaround effort. The State approves the plan, and the State Board and the local school board enter into a contract that sets goals and benchmarks and details the resources and benefits the district will receive. The district implements the plan, and after one year is able to show that it is meeting the criteria that the state set forth. After two years, the district meets the benchmarks in the contract. The district continues to receive support in years three through five, with checkpoints at any additional benchmarks set in the contract.

**Scenario #2** – School B is identified as a Priority School. School B is a high school in a large district with 15 elementary schools, six middle schools, and three high schools. The district recognizes that many of the issues at the high school level originate in earlier grades, so it decides to apply to be part of the Innovation Zone with a cluster of School B and the two middle schools that feed into it and submits a turnaround plan for approval. Key elements of the plan include aligning curriculum in all the schools and creating a cross-functional leadership team for the cluster. The State approves the plan, and the State Board and the local school board enter into a contract that sets goals and benchmarks and details the resources the district will receive. The district attempts to implement the plan, but at the two year point it has not met the benchmarks. The state requires the district to submit a revised plan that addresses the problem areas. The state reviews the plan and decides that the plan is inadequate and the district is not going to be able to raise student achievement, even with the revised plan. The Priority School is put under greater state control – it is no longer under total control of the local school board.

**Scenario #3** - School C is identified as a Priority School. School C is an elementary school in a mid-sized district. The district decides not to apply to participate in the Innovation Zone, as it feels that its existing plan to improve the school will raise achievement and it doesn't want to enter into a contract with the state. This district is required to submit its own plan for turning around the Priority School, but it doesn't get any of the new resources or benefits of Zone participation. Benchmarks are still set, and the school is evaluated after two years on those benchmarks. School C does not meet the benchmarks, and so has two choices. It can either opt into the Zone and create a turnaround plan that meets state criteria or it can be placed under greater state authority. In this case, the district decides to participate and develops a turnaround plan that the state approves and begins implementation. This approval is not automatic – if the plan doesn't meet state requirements then the school will be placed under greater state authority.

## **Serving *Every Child Well*: Washington State's Commitment to Help Challenged Schools Succeed**

**Preliminary Findings and Concepts for the State Board of Education: June 2008  
Submitted by *Mass Insight Education & Research Institute* and *Education First Consulting***

NOTE: This preliminary report, summarizing our initial findings from a broad range of stakeholder outreach, was presented to a working session of the State Board of Education in June, 2008. It is provided here as additional background for the preceding set of draft recommendations. The closing pages of this preliminary report provide details on the composition of the project's Design Team and on our surveys and interviews with education stakeholders.

### **I. WHY do we need a specific strategy for our lowest-performing schools?**

**What we have heard from the stakeholders thus far: There is some understanding that schools that have been persistently failing their students over a long period of time are not going to improve without assistance.**

The level of urgency for providing assistance is high among teachers and principals. (Nearly 88% of respondents to the first survey we conducted of principals and teachers reported feeling "a sense of urgency about the need for Washington to improve schools in which high percentages of students have not met standards in several years."). But it is not consistently as high among those not working directly in schools. Nor is there consensus that something different needs to be done for those schools.

Awareness must be built that students are spending years in schools where student achievement is well below state averages. There are wide achievement gaps even among schools serving similar demographic populations, and so students are receiving an inferior education both by circumstance and luck, not just zip code. OSPI has worked with several cohorts of schools through its voluntary School Improvement Assistance Program, but there have not been enough resources for it to work with all struggling schools, and gains made in individual schools are sometimes not sustained due to lack of commitment at the school or district level.

### **Defining success: What does it mean to successfully turn around a school, and how long should it take?**

**A common refrain in talking about school turnaround, in Washington State and nationally, is the lack of clarity around what a successful turnaround is.** We have heard from numerous stakeholders that the WASL should not be the only measure used to judge schools, but any additional measures need to be measurable, quantifiable and include progress indicators. More discussion is needed around what the

additional metrics might be. In addition, the Design Team agreed that the timeline for success could be the emerging standard in other districts' work nationally: five years for underperforming schools to match the non-poverty state performance averages (i.e., erase the poverty achievement gap), and two years to begin to show significant progress towards that goal and meeting benchmarks in subsequent years.

## **What are the major questions that stakeholders have raised?**

**A key question that has emerged from many of our conversations is whether the Board should be focusing on schools as the unit of intervention rather than districts.** OSPI is moving toward working with districts, recognizing that schools exist within systems, and if the systems are broken, then changes and improvements at individual schools will likely be temporary. Other concerns include sustainability over time as the number of schools identified as low-performing increases, the potential conflicts that could be caused by state/school relationships that exclude the district, school turnaround strategies that may differ from district-wide reform and instructional strategies, and lack of capacity in some regions.

The Legislature charged SBE with making recommendations on the overall accountability plan, and we heard from stakeholders that discussions about improving Tier 4/Priority Schools need to be couched as part of the broader SBE recommendations. Mass Insight and Education First have been charged with focusing on Tier 4 schools. We will help place the discussion about Tier 4 schools within the Board's broader charge. A deliberate effort needs to be made throughout this process to connect recommendations at the school level with district level accountability and involvement by having SBE's plans for the Tier 4/Priority Schools align with OSPI's plans for Tiers 1-3 in a coordinated system.

**The other key question emerging is whether the Board should be focusing on a small group of schools when so many schools need assistance – shouldn't the Board be thinking about how to improve all schools?** We will discuss this further, but the focus of the discussion should be around thinking about Washington's Tier 4 Priority schools *not as simply a new layer of accountability and a burden for districts and the state, but as an opportunity to try new strategies that could have an impact well beyond the Tier 4 schools.* Instead of thinking about how schools will get out of Tier 4, we should think about how to bring strategies that significantly improve student achievement in those schools out to a broader group of schools. That is the larger, systemic value of the Board's (and state's) focus on this cohort of chronically underperforming schools.

## **How to make it different this time: How can the state make sure that a new accountability plan is successful?**

**In our conversations, both with the Design Team and others, we have acknowledged that many stakeholders have been down this road before with the A+ Commission and Commission on Student Learning, and the state needs to figure out how to make it different this time.** A timeline of education accountability in Washington State provoked a discussion with the Design Team about the reasons why the education stakeholders in the state have not yet reached a workable solution on accountability. Many expressed concern that past accountability efforts have been about "fixing" teachers, principals

and staff—and that belief cannot seep into this work. Overall, there was strong support for the need for the education community to own the problem of lack of clear accountability, to make recommendations on how to improve it, and stand up for those recommendations. The need for existing resources to be used differently and for new resources to support effective reforms was emphasized. Strong support also was expressed for rebuilding trust and transparency among policymakers, educators and community members – and for expanding accountability, potentially, to include community members (including school directors) and parents. One Design Team member suggested that four things need to happen in order for this effort to be different than past efforts:

1. **Distill and articulate a clear sense of what we are trying to accomplish;**
2. **Deal with the crisis of confidence and trust among stakeholders;**
3. **Establish clarity of both incentives and metrics around what we value as progress; and**
4. **Define clear roles and responsibilities for each stakeholder.**

## **II. WHAT is required for turnaround strategies to succeed?**

However the Priority Schools are identified, much of our focus going forward has to be around how to create the conditions under which schools can successfully turn around. Stakeholders are clear here that what is needed is not additional *labeling*, but *enabling*, to help these schools raise student achievement. Mass Insight’s national research into schools that are both high-performing and high-poverty (HPHP) shows that these schools have created or been granted more flexible operating conditions that show up in the ways they make decisions concerning people, time, money, and program, and in additional flexibility they have around regulatory and compliance burdens. While we will know more about the specific barriers in Washington from the NWREL study, and much more discussion is needed on the topic of conditions before producing specific proposals, some key themes have emerged.

### **1. People (HR) – How can the people working in Washington’s Priority Schools be empowered to do their best work, and how can the leaders in these schools have the flexibility they need to build a staff capable of carrying out an ambitious turnaround plan?**

- This is an area where input from the Barriers study will be key. We need clarity from the field on what the everyday, practical obstacles are to hiring and retaining the best teachers and principals, whether the pipeline for attracting and retaining effective educators within Washington State is adequate, and the degree to which educators in Washington’s public schools feel they are free to do their best work.
- National research indicates teachers’ strong motivation to work in schools where they are highly valued members of a professional teaching culture, to which they contribute in a range of ways. Priority Schools must be places where very capable educators *want* to work in order to join a noteworthy and personally fulfilling turnaround effort. This project must work with Washington’s stakeholder groups (including teacher unions and principals) on ways to build this kind of culture in the Priority Schools, how to attract principals and

- teachers who will invest themselves in a turnaround effort, and how to fairly reassign teachers who do not want to be part of the change.
- The leadership of a successful school is usually distributed among the principal and key teacher leaders. That must be a focus of any school's turnaround plan.

**2. Money – What factors influence how decisions about spending are made?**

- Successful schools serving disadvantaged students appear to have the ability to make mission-driven decisions about some resources at the school level, such as whether to spend funds on additional staff members, extended day activities, training, technology, community outreach programs, or other options – depending on which of them most directly support the school's central mission and school improvement plan.
- Educators in Washington (and nationally) express frustration over funding channels that create project "silos" and prevent them from supporting a coherent plan in an integrated way. They also decry the instability of public funding levels. Our initial assumption, to be tested in the next phase of this project, is that funding in the Priority Schools must be sustained and free of the restrictions attached to most funding sources, such as categorical or grant funds. One superintendent suggested that a possibility for the Priority Schools is that the state agrees to suspend restrictions on targeted funds (such as LAP) for one year at a time to allow the district and/or school to apply those funds strategically under the condition that the school makes a certain amount of progress. Funding flexibility is one of the reforms that would encourage proactive response from the field, not pushback.

**3. Time – What are the important decisions to be made about how time is funded and used?**

Time has come up again and again in different contexts in these discussions. Some of the key points are:

- Time is needed for collaboration and mission/strategy-setting, as well as for the professional development to support the mission and goals. There are different opinions on exactly what the barriers are to implementing these kind of work effectively, and it is unclear to what extent the issue in Washington tends to be the need for more time or the need for more flexible use of existing time.
- *There is strong suggestion from the national research that additional time for adult collaboration and capacity-building and for student learning is a necessity to serve high-poverty student enrollments effectively.* Washington educators generally agree that extended time can be important, provided it is used well (not just an extension of the same activities, but as an opportunity to re-engineer the school day) and is supported by funding to pay staff for the additional time. Educators point to extended time as the opportunity to insert art, music, career and technical education, and other enrichment opportunities back into the school day.

**4. Program – How can Priority Schools be enabled to create, within the context of their district and community, the most effective program of instruction and student services possible?**

- This is in some ways the crux of the school-vs.-district issue. High-performing, high-challenge schools tend to be fairly entrepreneurial about the programs they put in place. But Priority Schools tend to be located in districts with fairly high student mobility, where consistency of approach across different schools carries a high value. One answer may lie in Priority Schools being considered to be the most extreme form of implementation of selected district strategies – i.e., the places where school leadership teams may need to work with the districtwide math curriculum, but can use extra time and resources to provide significant coaching to their teachers on its use.

**5. Regulatory flexibility – Are there regulatory requirements that are making it harder for schools to improve student achievement?**

- Many members of the Design Team talked about the amount of time they spend on issues related to compliance and regulation that takes away from their time to focus on the matters that are more important for student achievement. They would like to see more streamlined regulatory/compliance standards to reduce the burden on schools and districts and to free them up to do the work they need to do. Priority Schools offer an opportunity for the state to let some compliance requirements – say, on determining policy on the sale of Coke and other soda drinks – go.
- In our first survey, when principals and teachers were asked for suggestions of any regulatory or legal changes they believe are necessary to allow schools flexibility to improve, teachers emphasized the need to fund any regulatory changes such as an extended school day or year, while principals asked for greater flexibility from their collective bargaining agreements.
- This is also an area where the Barriers study will be very useful, as it may have been able to pinpoint some of the key regulatory issues.

**6. Collective bargaining – What role do local contract provisions play in implementing changes in Priority Schools?**

- Reformers often point to bargaining requirements as obstacles to reform. There was discussion at the design team meeting on this point – that unions tend to be targeted as obstructions to reform and operating flexibility. One union leader cautioned not to treat unions as a barrier to improvement as a starting point or the discussions will, he predicted, fail to produce a good result. Unions can play an active role in leading reform; he described the Seattle contract provisions in the Flight Initiative schools around teacher placements and supports for low-performing schools. The organizing partners on the project are in full agreement with him on these points, and particularly on the critical importance of teachers, the WEA, and collective bargaining to any successful outcome for the project – and we said so, at the design team meeting. There are a number of examples in other states of union/district collaboration and it will be important for this initiative to draw on both in-state and out-of-state models to demonstrate that operating flexibility in a union context is not only possible, but is being actively pursued around the country.

- The Priority Schools represent an opportunity to leverage these models in a statewide initiative. The key will be making sure that the state and the unions work together to create these elements of the initiative.

The “benchmark indicators” table below presents the set of school supports that is emerging from Mass Insight’s national research on turnaround, currently underway. These are the hallmarks, we believe, of a school change strategy that has moved from “improvement” into “turnaround.” As we continue to collaborate with Washington stakeholders, the Design Team, and the Board to create a Priority Schools strategy that is appropriate – and achievable – within the Washington State reform context, we will all want to keep these indicators in mind as reminders of what the national research suggests is important in turning around chronically underperforming schools.

## What makes it “turnaround” instead of “improvement”?

Benchmark Indicator at the School Level	Priority Schools	
	Ability	Reality
<b>Necessary School-Level Operating Conditions</b>		
<b>People</b>		
Can the turnaround leadership team staff the school as needed? (Hiring/removal/placement, roles)		
<b>Money</b>		
Does the school receive sufficient additional resources to achieve the turnaround plan? (Depending on school size and level: \$250K-\$1M per year, sustained for 3 years, new or reallocated funding)		
Is extra compensation provided to pay staff for extra time, responsibilities, and leadership roles?		
Does the turnaround leadership team have flexibility over how resources are spent?		
<b>Time</b>		
Is the day and year significantly extended to allow for more time for learning and collaborating?		
Does the turnaround leadership have the ability to adjust the school schedule as needed?		
<b>Program</b>		
Does the school enhance students’ readiness to learn by providing significant social supports, such as advisories, counselors, after-school programs, targeted remediation, home outreach, etc?		
Does the leadership team have authority to adjust programming to support the turnaround plan, and to make choices and respond to crises with a minimum of compliance-driven oversight?		
<b>Necessary School-Level Capacity</b>		
Do the school’s principal and turnaround leadership team have the skills necessary for success?		
Is a lead partner organization deeply embedded with school/district leadership to plan and execute turnaround design, make best use of the operating conditions, and align other partners? Is that lead partner present in the school on an intensive basis, and is it contractually accountable for student performance?		

## Diagnosing what’s needed: How can the state assess what individual Priority Schools need to succeed?

The Priority Schools provide a unique opportunity and entry point for reform strategies, where exemplars can be created so that successful strategies can be replicated in a wider group of schools. While we are not charged with identifying the schools or creating the procedures that do so, it is clear that this is a fairly highly charged issue for educators. The first reaction among educators in Washington (and elsewhere) to the advent of a “tier 4” list of schools is to inspect and discuss the criteria used to create the list. This is a residue of the “labeling, not enabling” syndrome that many states have found themselves caught in as they have proceeded with school accountability formulas without providing corollary resources and support. It is our strongly held view that if this syndrome is not addressed, and the Priority Schools initiative generates mostly continued discussion of the identification and labeling (rather than the opportunity for significant change), then it has little chance of success. The schools identified as Priority Schools should be those that meet the common-sense test: most reasonable people, looking at the achievement data over several years, would agree that something different needs to begin to happen in those schools. But the focus of this initiative should be on the *support* side. That is the way to galvanize a proactive, positive response from the field, which is the only way that the initiative will succeed.

Moreover: there is strong agreement among the stakeholders we interviewed (and the Design Team) that the local context in which struggling schools exist is critical and must be taken into account when creating a strategy for turnaround. Numbers alone do not tell the whole story. SBE’s plan to do more in-depth analysis of Tier 3 schools before identifying them as Tier 4 schools is important. There was general consensus that OSPI’s newest diagnostic tool could be a useful model in this regard.

### **III. WHO will lead and conduct this work effectively?**

The Design Team spent a significant amount of time discussing the question of capacity – what defines it, where it is lacking, and what can be done to increase it in the deficit areas. It was agreed that interventions will not be successful and sustainable if they do not address capacity building in a serious way.

This is an area that highlights, once again, that the solution will not be the same for all Priority Schools, as Design Team members agreed that some schools/districts have the internal capacity to improve if they are given enough operating flexibility and resources (and some outside support) to do so, while there are others (particularly small districts) that may not have the capacity or the wherewithal on their own and will need a larger role from the regional/state level.

### **Attributes of effective schools: What are the capacities and operating habits that Priority Schools need to develop?**

The Design Team came up with the following list of elements of capacity based on their professional experience. Essentially, this list can be regarded as their brain-stormed set of characteristics of effective schools:

- *Collaboration (within and across grade levels)*
- *Time to discuss the strategy and mission*
- *Problem-solving*
- *Access to data and strategic use of these data*
- *Professional skill*
- *Leadership*
- *Effective instructional strategies*
- *Positive labor relations*
- *Safe and healthy work environment (including “safety” from overly restrictive or unfunded mandates and the distractions of overly burdensome compliance minutiae)*
- *Resources and support from the central office*
- *Strong relationships between adults and kids*
- *Adequate class size*
- *Sustained commitment (to strategies and funding)*
- *Differentiated approaches based on diagnosis of the need*
- *High-quality supervision practices between principals and teachers*
- *Ability to deal effectively with social-emotional conditions of kids*

What is the state’s primary role in ensuring that Priority Schools gain these capacities and attributes? Along with making possible the supportive operating context outlined in the table on page 9, it must be to ensure (together with school districts) that Priority Schools are led by principals and turnaround leadership teams that have the skills and characteristics necessary to carry out the turnaround plan effectively. Fulfilling that responsibility raises complex questions of authority and evaluation, questions that have not yet been solved for Washington State and this initiative. But it is clear from the national research that ensuring high-quality leadership – along with equipping it with a supportive operating context – may be the most important contribution that states can make to the turnaround of underperforming schools.

### **Data/assessments: How do we ensure that we have all of the information we need about where capacity needs to be built?**

A growing body of evidence nationally points to the strategic use of performance data (to improve curricula and teaching strategies and to target extra-help programs for at-risk students) as an essential element in successful reform. We have consequently highlighted this aspect of capacity-building for this project. Our understanding is that some districts in Washington State have developed the data systems necessary to capture the relevant information and to track individual students, but many districts have not, and the state as a whole has not, although it is moving in that direction. Some other relevant considerations in this area:

- *The need to track data on the level of the student, so that a growth model can be used.* While absolute levels of proficiency and AYP will continue to be important indicators, measuring improvement by students longitudinally would allow Washington to determine how far a school has moved its students forward, no matter where they fall on the achievement spectrum. This is particularly important in the Priority Schools, where students are starting from such a deficit.
- *The capacity of data systems to track additional measures.* What those measures might be and how to quantify them needs further exploration, but in thinking about capturing data this capability should be considered. Other measures might include outcomes such as graduation rates, SAT scores, and GPA; inputs such as course-load, attendance, disciplinary incidents; and school indicators such as teacher participation in common planning time and parent performance on school/home “contracts.”
- *Formative/diagnostic assessments.* Right now the WASL does not give timely or sufficient information to tailor instruction for individual students (nor is that specifically its purpose). Periodic formative assessments and the data systems to capture and distill that information would give teachers the information needed to differentiate instruction. These assessment systems can be expensive (\$8 to \$12 per student per year) if contracted out, and enormously time-consuming to develop in-house, as some districts have done in other states. Washington could consider piloting the use of a formative/diagnostic system as part of its cohort of Priority Schools.

## **Resources: Are there sufficient resources in the system to support this work, or are significant new resources needed?**

**There is general consensus among most education stakeholders that education has been underfunded for years in Washington.** There is resentment among those working in the schools that accountability was perceived to have been implemented without the resources to go along with it, and that educators have been struggling with the new mandates as a result. While others in the legislative and business community might not agree with that characterization, that perception must be taken into consideration when framing questions about resources. At the same time, some members indicated that while money does matter, it is not the only issue here. Other key points:

- Given the current economic circumstances and the realities of the state budget, taxpayers (and the Legislature) will be reluctant to increase funding without increasing accountability.
- Reallocation of existing resources needs to be considered along with new resources, but acknowledgement needs to be made that the chance for successful turnaround of the Priority Schools will be severely limited without additional resources.
- There was discussion as to whether it was fair to target resources at a small group of schools when all schools need additional money. One of the local union heads made the point that

equitable does not have to mean equal, and these schools that have the most severe achievement gaps and most challenged student populations should receive more funds.

- The WEA stated that it will not be able to support any recommendations that require additional work without additional funding. Several others had similar concerns, including WASA.

#### **IV. HOW can the state best orchestrate effective turnaround?**

**How can the state most effectively organize itself to support the work in Priority Schools? What are the roles for state agencies to play?** There was crystal clear agreement on the importance of defining roles, responsibilities, and accountability for each player in the system – much of it rooted in the sense of confusion that many educators feel over the overlapping and sometimes competing roles being played by the Legislature, SBE, and OSPI in implementing school reform. The Design Team started to have the discussion regarding who should play which role in serving the Priority Schools, but there is much more to discuss on this topic before Mass Insight can provide recommendations to SBE.

- The discussion produced a range of differing responses about the extent of OSPI's role in delivering capacity-building. Some Design Team members felt that, given OSPI's experience in school intervention, it is the right agency to lead this work. Others argued for a strong role for ESDs (perhaps in conjunction with OSPI) because as regional centers they represent a plausible source of intensive, on-the-ground, in-school assistance. Others felt that OSPI needs to better align its own operations across all its divisions before it could effectively manage the kind of whole-school assistance effort the Priority Schools require.
- The same was true about the ESDs. The Design Team felt that they varied in quality, but that they are the logical place to look when thinking about building capacity, particularly in small districts. Other stakeholders we interviewed who are part of the public education landscape in Washington are comfortable with the ESD system and think it is logical that they would play a major role in providing assistance to Priority Schools.
- Most stakeholders were uncertain about the role the SBE could play in catalyzing and (more so) organizing the work. SBE is viewed as a potential policy change-agent, but not as an implementer.
- The idea of using other partners to build capacity needs further framing and discussion. In an increasing number of major districts nationally, outside partners are being used to help schools turn around and in some cases to lead those efforts with full accountability and authority, but that model has not been prevalent at all in Washington. Reform organizations, such as Greg Lobbell's Center for Educational Effectiveness, evaluators such as Jeff Fouts and Duane Baker, and OSPI's school improvement facilitators have advised and helped many schools to improve in discrete areas such as better use of data or moving from 1<sup>st</sup> order to 2<sup>nd</sup> order change. Higher

education and workforce development agencies, foundation-funded projects, and local schools foundations, to name a few other examples, also engage with Washington schools and districts to support reform. In fact, more than three-quarters of teacher and principal survey respondents reported working with partners (e.g., universities, nonprofits, ESDs, others) in their schools to improve student achievement. Similarly, almost three-quarters of survey respondents who had experience working with partners indicated support for expanding partnerships in Washington State to help more schools.

- However, only 18.3% reported having *strong* partnerships in their schools, and there are very few examples in Washington of school turnaround partners working in the way that we have seen in other districts and states, where such partners help the school leadership team (sometimes even in lieu of district central office involvement) on nearly every important aspect of school improvement. (High Tech High in Highline School District is such an example.) Many of the stakeholders we talked to did not view this as relevant, possibly because of a lack of context for the idea and a greater experience-base across the state. There was generally enthusiastic support for expanding the partnerships that do exist, but within the current framework of authority, governance, and accountability.

### **Voluntary vs. mandatory: Should Priority Schools be given the option whether to participate in interventions?**

This is a complicated question for every state. Participation in school improvement assistance offered by OSPI (SIAP) has been voluntary since its inception in 2001. There are different opinions as to whether intervention should remain voluntary, particularly in Priority Schools. Some people feel that the voluntary component is important and must be maintained, while others feel that it shouldn't be an option for a school to continue to struggle without getting mandated assistance.

- Participants on the Design Team also said that they couldn't decide one way or another without the steps being laid out, and that it could be voluntary to a point, but then become mandatory if schools continue to struggle after being given a last, best opportunity to improve. It is too early in the process to make a formal recommendation on this issue, but it will be important to continue to discuss and come up with specific options that people can react to. Our instinct for Washington State lies along the lines of this hybrid model discussed briefly by the Design Team: an opt-in category of reform that carries with it some criteria aimed at ensuring a deeper level of change (along with sufficient resources and supports to allow the reform to succeed), with a consequence for schools that continue their track record of failure even after this intensive effort.
- In our first survey of teachers and principals, principals were more likely than teachers to support making state intervention mandatory for schools in need. (See the summary of the survey responses, attached separately.)

## **Incentives for participation: What will motivate Priority Schools and their districts to embrace this initiative?**

If participation is voluntary (and possibly if it is mandatory as well), there need to be incentives for schools/districts to participate in order for the initiative is to be perceived as something that is done *with* schools and districts and not *to* them. If the operating conditions are set up correctly and the incentives aligned, school and district leaders will want to be part of this group because they will see a clear path in it for improvement. The Design Team needs to further discuss specific ideas around incentives, but some possibilities are:

- Additional funding and greater control over how to spend it
- Freedom from certain regulatory/compliance burdens
- Assistance in instituting extra time for teacher collaboration and student learning (and on how to use the time most effectively)
- More flexibility on staff hiring, allocation, compensation, and distributed leadership roles
- Assistance in establishing greater capacity, services, and community partnerships that support the school's efforts to enhance their students' readiness to learn
- Significant partner support on developing a coherent turnaround plan and on implementing that plan

## **Consequences: Should there be consequences for schools that continue to fail their students?**

We discussed with the Design Team whether there should be consequences for schools that continue to fail. While a few people thought this was too punitive, most thought that at some point there needed to be a consequence, especially if participation is voluntary and schools opt not to participate. Otherwise, students can spend years in schools that are not helping them achieve. Consequences can also be important as motivation for schools/districts to participate in the options to assist improvement available to them if the consequence is sufficiently undesirable. The question is what options are available under current Washington law (which prohibits the state from taking over schools, an option in other states), and what new strategies, if any, would need to be authorized by the Legislature. The state takeover strategy, whereby the state education agency takes on management of a failing school, has not produced a good track record of success elsewhere and is not a recommendation we would make here.

## **V. An emerging strategy: A “compact” between all responsible parties**

Based on its first discussion, the Design Team ended its day with an emerging idea for a Priority Schools partnership: a “compact” between all parties with shared responsibility and accountability for improving those schools and well-defined roles and responsibilities.

Under this idea, if a district has Priority Schools, the state (including SBE, OSPI, Legislature) and district (including teachers, principals, district administration, school board, and the community) would develop a “partnership contract” for five years with annual progress goals to turn around the Priority Schools. The contract, which would be developed off of a statewide template, would specify capacities that need to be built; required operating conditions; resources that need to be aligned, reallocated or allocated; and accountabilities for each of the contract partners. If the school does not meet annual or five year goals outlined in the contract, then consequences would occur and would be shared by all parties.

The group brainstormed possibilities for the state roles in this option:

#### Legislature

- Authorize a framework of interventions, flexibility, options and consequences to guide SBE’s and OSPI’s work to create local/state partnership contracts
- Delegate appropriate authority to SBE, OSPI and others (this was seen as important: getting away from too much legislative micro-managing)
- Provide new resources and enable allocation of new dollars

#### OFM/Governor

- Enable OSPI to allow school districts to blend funding streams

#### OSPI

- Implementation of legislative direction and establishment of the compact template (with SBE)
- Agency-wide collaboration (within OSPI) across, for example, budgeting, program and school improvement to allow for greater coherence in the implementation strategies in the schools
- Functional expertise on turnaround design, including developing diagnostic assessment tools to analyze Priority Schools’ needs
- The discussion produced a range of differing responses about the extent of OSPI’s role in delivering capacity-building (in connection with the ESDs and, potentially, other partner organizations)

#### SBE

- Create the initiative to frame the compact template (already underway, in effect)
- Approve the contracts
- Monitor progress against goals

#### Required Signers of the Contracts

- OSPI

- Local school board
- Superintendent
- Local bargaining associations (teachers and principals)
- ESD (perhaps, or other partner/support organization)
- Community CEO (perhaps; this is our addition to the Design Team's list)

#### Developers Involved in Creating the Contract

- The signers
- Community members (parents, civic, business, higher education, etc.)
- Partners (school reform support organizations, etc.)
- State (in the form of support provided by a designated entity)

#### Approvers

- SBE (authorized by Legislature to approve the contracts)
- Legislature (de facto by approving funding)

This is simply a starting point for discussion at this point, with many details to be worked out. But it was an important step forward for the Design Team to take. What seems especially crucial to the Design Team members (and to other stakeholders we interviewed) is that accountability and responsibility be shared among all stakeholders and that the roles, responsibilities, and consequences are well defined and well known.

# Serving *Every* Child Well:

## Washington State's Commitment to Help Challenged Schools Succeed

### Appendix

#### Stakeholder outreach completed

##### In person interviews:

Janell Newman and team, OSPI

Rep. Glenn Anderson

Mary Lindquist, WEA

Gary Kipp, AWSP

Martharose Lafferty, Ted Thomas and Dan Steele, WSSDA

Paul Rosier, WASA

Dr. Terry Bergeson, OSPI

Rep. Pat Sullivan

Sen. Rosemary McAuliffe

Sen. Rodney Tom

##### Phone interviews:

Ellen Abellera (Commission on Asian American Affairs)

Rep. Don Barlow

Twyla Barnes (Vancouver ESD)

Jane Gutting (Yakima ESD)

Paul Hill (Center on Reinventing Public Education, UW)

Rep. Fred Jarrett

James Kelley & Amina Jones (Urban League of Metropolitan Seattle)

Sen. Curtis King

Terry Munther (Spokane ESD)

Eleni Papadakis (Workforce Training and Education Board)

Maria Ramirez (Campana Quetzal, Seattle)

Mike Sotelo (Hispanic Chamber of Commerce)

Pat Wasley (UW College of Education)

#### Other elements of stakeholder outreach:

- Teacher/principal surveys

- The plan is to survey about 130 teachers and principals 3 times (May, June, August).
- We have completed the first survey, which asked for thoughts on broad ideas related to helping schools improve. The next two surveys will ask for reactions to specific ideas on how to help.
- Jeanne Harmon (CSTP) and Gary Kipp (AWSP) assisted with identifying participants from their networks. We are open to further distribution of the survey instrument to education stakeholders across the state.
- Highlights from the first survey
  - **Almost three-quarters** of survey respondents **recognized the need for school improvement**, agreeing with the statement “there are schools in Washington State in which the majority of students have consistently not met standards or made much improvement, and are sending very unprepared kids off to the next level of schooling.” Respondents also reported feeling a **sense of urgency** about the issue.
  - **Three-quarters** of survey respondents also were **confident that OSPI or the State Board of Education could successfully identify the state’s most challenged schools** based on available data.
  - For the most part, the **majority of survey respondents** indicated that **the most challenged schools face operating conditions that prevent them from carrying out critical elements of teaching and learning** (e.g., providing enough time for teachers to collaborate and plan, allowing principals and teachers to do their best work to help students succeed, organizing school resources around specific intervention strategies).
  - When asked to identify challenges facing schools that are behind, survey respondents most frequently cited **poverty/home issues, funding, time for planning and collaborations, and teachers unions**.
  - When asked for suggestions of any **regulatory or legal changes** they believe are necessary to allow schools flexibility to improve, **teachers** emphasized the **need to fund any regulatory changes** such as an extended school day or year, and **principals** recommended **greater flexibility around collective bargaining**.
  - Participants were asked what they believed was the **biggest need** in terms of school resources. By far, respondents focused on the issues of **time for professional development, planning and collaboration**. Several teachers mentioned the need for **reduced class sizes**.
  - **More than three-quarters** of survey respondents reported **working with partners** (e.g., universities, nonprofits, ESDs, others) in their schools to improve student achievement. However, only **18.3%** (23) reported having **strong partnerships** in their schools.
  - **Almost three-quarters** of survey respondents who had experience working with partners indicated **support for expanding partnerships in Washington State to help more schools**.
  - **Principals** tended to support **making state intervention mandatory** for schools in need, while **teachers** tended to strongly support **keeping intervention voluntary**.
  - Respondents identified **“more resources”** and **“more flexible operating conditions”** as the benefits most likely to make schools and districts opt in to state assistance.
- Union focus group
  - We held a focus group with 6 WEA local leaders and WEA policy staff in late May. Seattle, Clover Park, Grandview, Yakima, Highline, and Quincy were represented.

- Design team
  - One of our most important strategies has been to convene a Design Team of Washington educators and leaders with deep expertise in helping turn around low-performing schools. The Design Team is helping our project team:
    - Distill the most relevant aspects of the research base on low-performing schools;
    - Craft relevant policy options and respond to initial proposals;
    - Identify options with the greatest likelihood of improving schools in Washington;
    - Address issues of implementation or policy design that the field has experienced in Washington’s school reform effort to date;
    - Suggest ways for the state to increase resources for low-performing schools and maximize the use of existing resources;
    - Engage with colleagues, additional stakeholders and the State Board in explaining and building support for the resulting policy proposals.
  - We will convene the Design Team 2-3 times between May and August for half- to full-day working sessions in the Sea-Tac area. We met on May 29<sup>th</sup>, and are planning to meet again June 20. We also plan to be in contact with individual Design Team members on various aspects of the work.
  - Design Team members include:
    - Brian Benzel (Whitworth University)
    - Jane Broom (Microsoft)
    - Karen Davis (WEA)
    - Larry Ehl (Partnership for Learning)
    - Mary Alice Heuschel (Renton School District)
    - Gary Kipp (AWSP)
    - Laura Kohn (New School Foundation)
    - Ruth Massinga (The Finance Project)
    - Tom Murphy (Federal Way School District)
    - Janell Newman (OSPI)
    - Sandra Pasiero-Davis (Mabton School District)
    - Steve Pulkkinen (SEA)
    - Charles Rolland (Communities & Parents for Public Schools of Seattle)
    - Paul Rosier (WASA)
    - Ted Thomas (WSSDA)
    - Craig Dawson (Retail Lockbox, Inc.; could not attend first meeting)
    - Jeanne Harmon (Center for Strengthening the Teaching Profession; could not attend first meeting)
    - Jane Gutting (ESD 105; could not attend first meeting)
    - Beth McGibbon (Teacher – Spokane Public Schools; could not attend first meeting)



# WASHINGTON STATE BOARD OF EDUCATION

OLD CAPITOL BUILDING • ROOM 253 • P.O. Box 47206 • 600 S.E. WASHINGTON • OLYMPIA, WA 98504-7206

## REQUEST FOR WAIVER FROM THE 180-DAY SCHOOL YEAR REQUIREMENT

### SUMMARY OF POLICY ISSUE/STATE BOARD OF EDUCATION (SBE) STRATEGIC PLAN GOAL:

#### BACKGROUND

Based on legislative authority (Chapter 208, Laws of 1995), the SBE adopted Chapter 180-18 WAC Waivers for Restructuring Purposes. Section 180-18-040 of this chapter allows school districts to apply for waivers from the minimum 180-day school year requirement with the assurance that they meet the annual minimum instructional hours offering requirements in such grades as are conducted by the school district, as prescribed in RCW 28A.150.220.

The decision to recommend approvals or non-approvals is based on the assessment of each request by a team of reviewers. While full applications will not be in the Board agenda, Board members who want to have the full applications should contact Brad Burnham at 360-725-6029 or [brad.burnham@k12.wa.us](mailto:brad.burnham@k12.wa.us).

#### EXPECTED ACTION

Staff recommends that the State Board of Education (SBE) approve the waiver requests from the minimum 180-day school year for the following school districts:

School District	#Days	#Years
Columbia (Walla Walla)	3	1
Everett	3	3
Garfield and Palouse	3	3
Granite Falls	3	1
Grapeview	2	2
Loon Lake	2	1
Naches Valley	2	3
Nespelem	6	1
Othello	6	3
Pe Ell	2	1

Pomeroy	3	1
Riverside	2	1
Sunnyside	7	3
Tacoma	4	1
Wahkiakum	4	3
Waitsburg	2	3
Wellpinit	3	3
Zillah	3	3

Staff recommends that the State Board of Education (SBE) not approve the waiver request from the minimum 180-day school year for the Lyle School District:

School District	#Days	#Years
Lyle	36	1

The Lyle School District is requesting a waiver from the minimum 180-day school year for multiple reasons, some of which are consistent with the purposes for a waiver as outlined in RCW and WAC<sup>i</sup> and some of which are not consistent with the purpose. Lyle School District is asking for four learning improvement days to offer teacher in-service time that the District could not have offered in any other way. This part of the request is consistent with the purpose of a waiver. The District is also requesting 32 days in order to go to a four-day school week to save on costs such as diesel fuel, utilities and substitutes and to promote sound environmental practice by reducing mileage, pollution and thus savings for the District, schools, patrons and staff. This latter part of the request is not consistent with the purpose of a waiver as outlined in RCW and WAC, therefore, staff recommends that the Board not approve Lyle School District's request for a waiver from the minimum 180-day school year.

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<sup>i</sup> RCW 28A.305.140, RCW 28A.655.180, WAC 180-18-010, WAC 180-18-040, and WAC 180-18-050

**AMENDMENT #1**

Modification of Contract between the State Board of Education, State of Washington (hereinafter referred to as Board)

and

David Heil & Associates, Inc.  
(hereinafter referred to as Contractor)  
4614 SW Kelly Avenue, Suite 100  
Portland, OR 97239  
Federal Identification #93-122-8752  
Unified Business Identifier #602-769-328

Which commenced the 1st day of November 2007, and terminates the 31st day of December 2008 and is numbered 20080438.

For and in consideration of the mutual promises contained in this modification of contract, the Superintendent and Contractor do mutually agree to modify the contract identified above as follows:

**Section I, DUTIES OF CONTRACTOR** shall be amended to read as follows:

- B. In order to accomplish the general objective(s) of this contract, Contractor shall perform the following specific duties to the satisfaction of the Board's designee, Kathe Taylor:

**Contractor shall review** Washington State science standards, prepare ~~of~~ reports and recommendations, and present findings and recommendations at Board meetings and public outreach focus groups in accordance with Attachment C, Contractor's Proposal, and Attachment C1, Proposal Amendment.

**Estimated Project Milestones**

November 1, 2007 – April 2008	Review standards and meet repeatedly with Washington science panel
December 18, 2007	Conduct meeting of Science Advisory Panel
January 9, 2008	Submit and present preliminary report to the Board
March 14, 2008	Submit interim report to the Board
March 26-27, 2008	Submit and present interim report to the Board at the March Board meeting

**Schedule of Payments**

<b>Deliverable Date</b>	<b>Deliverable</b>	<b>Amount</b>
December 18, 2007	Conduct meeting of Science Advisory Panel	\$37,725
January 10, 2008	Present preliminary report to Board	\$50,000
March 27, 2008	Present interim report to Board	\$50,000
May 7, 2008	Present final report to Board	\$50,000
June 30, 2008	<del>Interim payment</del> Prepare for two-day workshop	<del>\$40,000</del> \$20,000
July 31, 2008	<del>Interim payment</del> Present two-day workshop	<del>\$40,000</del> \$25,000
<u>October 31, 2008</u>	<u>Review first draft of standards revision, submit report and facilitate advisory panel</u>	<u>\$15,000</u>
<u>November 30, 2008</u>	<u>Review second draft of standards revision and submit report</u>	<u>\$10,000</u>
Upon contract completion	<u>Facilitate advisory panel, submit summary of discussions from the advisory panel, final findings report and final follow-up activities (see project milestones)</u>	<del>\$7,996</del> <u>\$13,496</u>

- C. The Board staff shall be responsible for all arrangements for the Washington Panel meetings including, but not limited to, provisions for travel, accommodations and food for participants as they see fit.

ALL OTHER TERMS AND CONDITIONS OF THIS AGREEMENT AND PREVIOUS AMENDMENTS REMAIN IN FULL FORCE AND EFFECT.



Washington State  
Board of Education



*Working to Raise Student Achievement Dramatically*

**REQUEST FOR PROPOSALS  
RFP #SBE – 07  
Math Curriculum Review**

**INTRODUCTION**

**1.1. PURPOSE AND BACKGROUND**

The Washington State Board of Education hereafter called "SBE," is initiating this Request for Proposals (RFP) to solicit proposals from Consultants interested in assisting the SBE and its Math Panel to review the Office of the Superintendent of Public Instructions' (OSPI's) proposed instructional materials menus to meet the new K-12 mathematics standards. Additional information is as follows:

Washington has a standards-based system of accountability, instructional leadership, and support that has evolved over more than a decade. The continuity and consistency of this system over time represents major investments in funding, teaching, and learning in the K–12 system. Due to concerns that only fifty eight percent (58%) of the students who took the 10<sup>th</sup> grade mathematics Washington Assessment of Student Learning (WASL) in 2006 met the standards needed for high school graduation, the SBE, OSPI, and Professional Educator Standards Board (PESB) created a Joint Mathematics Action Plan to address ways to examine and improve the educational system for our mathematics students.

In 2007, the SBE hired a national consultant to work with its Math Panel to conduct the independent review of the current K-12 mathematics standards, with recommendations to OSPI for changes in rigor, specificity, clarity, etc. See the Board's Web site for information from that report and other reports on the standards review at [www.sbe.wa.gov](http://www.sbe.wa.gov). Based on that report, OSPI conducted a revision of the mathematics standards with Washington educators and a national consultant group.

In the spring of 2008, the legislature charged the SBE with finalizing those recommendations on the new mathematics standards. OSPI plans to adopt those standards this spring and summer and then begin a review of instructional materials that meet the standards. By law, OSPI is required to adopt three "curricular menus" for elementary, middle, and high school grade spans, six months after the mathematics standards are adopted.

The SBE is charged with providing recommendations to the Superintendent on the proposed instructional material menus within two months after OSPI completes its work

## **1.2. OBJECTIVE**

The purpose of this proposal is to review the recommendations of OSPI on instructional materials for the K-12 mathematics standards with the SBE Math Panel, to ensure that these materials conform to the newly adopted Washington mathematics standards. The ultimate goal is to ensure that school districts will have access to quality instructional materials to facilitate student learning. The SBE will also consider in which cases to require or incentivize school districts to use these instructional materials.

## **TECHNICAL PROPOSAL (SCORED/MANDATORY)**

**Scope of Work.** The Consultant(s) shall review the OSPI instructional materials of “three curricular menus per elementary, middle, and high school grade spans to determine their conformity with the new K-12 mathematics standards. The final product will be a report on the conformity and whether there are other instructional materials not considered that conform to Washington’s K-12 mathematics standards.

In formulating the standards review recommendations, the Consultant(s) shall work with the SBE Math Panel, The purpose of the panel is to: 1) analyze issues arising from the instructional materials review; and 2) assist the Consultant(s) and the SBE in developing a meaningful process for public input. The Consultant(s) and panel shall be supported by appropriate OSPI and SBE staff. The panel will meet approximately three (3) or four (4) times over the course of the work.

### **Project Estimated Milestones (this schedule may be changed for the high school instructional materials)**

Early August 2008 – Begin work on OSPI proposed elementary and middle school instructional materials review and meet with Washington math panel.

August 30, 2008 – Submit progress report to the SBE on OSPI proposed elementary and middle instructional materials review.

September 15, 2008 – Submit draft report and meet with Washington Math

September 24-25, 2008 – Present to SBE at its meeting in Pasco, Washington

September 30, 2008 – Submit final report, with recommendations, to SBE on OSPI proposed elementary and middle school instructional materials.

Early December 2008 – Begin work on high school instructional materials (if OSPI work is completed) and meet with math panel.

December 20, 2008 - Submit progress report to the SBE on OSPI proposed high school instructional materials review.

January 9, 2009 - Draft report to SBE.

January 14-15, 2009 - Present to SBE at its meeting in Olympia, Washington

January 31, 2009- Submit final report, with recommendations, to SBE on OSPI proposed high school instructional materials.



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## Washington State Board of Education Proposed Meeting Dates for 2009

- January 15-16
- March 19-20
- May 21-22
- July 16-17
- August 10-11
- September 17-18
- November 19-20

# State Board of Education

## State Funds

<b>Board Members</b>	<b>FY 2009</b>
Sal/wages/Benefits	\$ 21,802.00
Goods/Services	\$ 6,000.00
Travel	\$ 62,600.00
<b>Total</b>	<b>\$ 90,402.00</b>

<b>SBE Staff and Operations</b>	<b>FY 2009</b>
Salaries/Wages/Benefits	\$ 522,503.00
Goods/Services	\$ 36,000.00
Travel	\$ 25,000.00
Equipment	\$ 10,000.00
Carry-over Equipment Fund	\$ 18,126.00
Indirects	\$ 40,000.00
DOP Payroll	\$ 800.00
Unallocated	\$ 72,169.00
<b>Total</b>	<b>\$ 815,000.00</b>

	<b>FY 2009</b>
<b>Annual Total</b>	
Legislation Approp for SBE	\$ 815,000.00
<b>Total Available</b>	<b>\$ 815,000.00</b>

<b>Miscellaneous</b>	<b>FY09</b>
Math and Science	\$50,000.00
Math Curriculum	\$150,000.00
Carry-over Equipment Fund	\$18,126.00
<b>Total</b>	<b>\$218,126.00</b>

<b>Gates</b>	
February 2008-February 2009	\$850,000.00



# WASHINGTON STATE BOARD OF EDUCATION

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## APPROVAL OF PRIVATE SCHOOLS FOR 2008-09 SCHOOL YEAR

### SUMMARY OF POLICY ISSUE/STATE BOARD OF EDUCATION (SBE) STRATEGIC PLAN GOAL:

#### BACKGROUND

Each private school seeking State Board of Education approval is required to submit an application to the Office of Superintendent of Public Instruction. The application materials include a State Standards Certificate of Compliance and documents verifying that the school meets the criteria for approval established by statute and regulations. A more complete description is attached for reference.

Enrollment figures, including extension student enrollment, are estimates provided by the applicants. Actual student enrollment, number of teachers, and the teacher preparation characteristics will be reported to OSPI in October. This report generates the teacher/student ratio for both the school and extension programs. Pre-school enrollment is collected for information purposes only.

Private schools may provide a service to the home school community through an extension program subject to the provisions of RCW 28A.200. These students are counted for state purposes as private school students.

#### EXPECTED ACTION

The schools herein listed, having met the requirements of RCW 28A.195 and are consistent with the State Board of Education rules and regulations in chapter 180-90 WAC, be approved as private schools for the 2008–09 school year.