

STATE BOARD OF EDUCATION

HEARING TYPE: X ACTION

DATE: March 27, 2008

SUBJECT: **FINAL DIRECTION FOR DRAFT THIRD CREDIT OF
MATHEMATICS AND IMPLEMENTATION ISSUES**

SERVICE UNIT: Ms. Edie Harding, Executive Director
State Board of Education

PRESENTER: Mr. Steve Floyd, Board Math Lead
Ms. Edie Harding, Executive Director
State Board of Education

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.

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 January guidance. At the March meeting the Board will take public comment, discuss the current proposed draft rule and implementation issues, and give staff direction to prepare the rule for a public hearing and adoption in July. The Board will need to wait until July due the need to complete the high school math standards because we believe that the Algebra II standards may take a bit longer than May to complete.

Attached you will find:

- A memo updating you on the third math credit and implementation issues
- A copy of the draft math rule
- A draft survey on implementation issues for the third math credit (we have also included science under this survey).

EXPECTED ACTION:

The Board will be asked, at the business meeting, to give staff any further direction on this draft of the rule.



Washington State
Board of Education



Working to Raise Student Achievement Dramatically

Update to the Board on the Draft Rule on the Third Mathematics Credit and Implementation Issues

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.

The Board directed staff at the January meeting to develop a draft rule for a third math credit based on its definition of a meaningful high school diploma and guidance.

Purpose of Meaningful High School Diploma

The Board approved the following language, which will serve as guidance to its review of the current high school graduation requirements.

The purpose of the diploma is to declare that a student is ready for success in postsecondary education, gainful employment, and citizenship, and is equipped with the skills to be a lifelong learner. The diploma represents a balance between the personalized education needs of each student and society's needs, and reflects at its core the state's basic education goals. The diploma is a compact among students, parents, local school districts, the state and whatever institution or employer the graduate moves on to—a compact that says the graduate has acquired a particular set of knowledge and skills. How the student demonstrates those skills may differ. Whether a student earns credit by participating in formal instruction or by demonstrating competency through established district policies is immaterial; they are equally acceptable.

January Board Direction for Math Credit Rule Adoption

After taking into consideration the consultant's research on third math credit options, including national studies on the topic, and public comment, the Board directed staff to draft rule language for review at the March State Board of Education meeting that requires all students to complete a third credit of math in an Algebra II course that aligns with the new math standards and meets the content standards to be approved by the Board. This course requirement can be completed through an approved career and technical education course of study that is comparable in course content but allows the student to earn more than one credit to complete. This will be in effect for the Class of

2013. This decision aligns with the Board's specified purpose of the high school diploma—to prepare all students for success in postsecondary education, gainful employment and citizenship.

Upon completion of a second credit of mathematics that meets the 9th and 10th grade level expectations, students may elect to pursue, or continue to pursue, an approved program of study that leads to a specific career goal. This election shall allow the student to replace the Algebra II requirement with a third math credit that furthers this approved program of study. The election shall require approval by a high school counselor or administrator, and shall include a counseling session with the student and family/guardian that at a minimum makes sure everyone understands the future opportunities that may be unavailable to the student by making this choice. It shall also encourage the student to take additional math courses during the remainder of their high school studies that assist them towards their career goals and maintain their math skills.

This work follows a yearlong study of the mathematics standards, research on issues relating to a third mathematics credit in terms of what students need for a strong math foundation after high school, as well as public feedback. For more details see the SBE Web site at: www.sbe.wa.gov/SBETHirdMathCredit.htm

The Proposed Draft Rule

Staff has prepared a draft rule for the Board to review. The following is a brief review of the math rule.

Change in current rule for describing the high school math credits

The draft amendments to WAC 180-51-061 increase the number of mathematics credits required for graduation from two to three. All credits must now be aligned with the high school mathematics standards as developed and revised by OSPI instead of the ninth and tenth grade GLE's. The draft rule is written to require that the three credits include: (1) Algebra I, Geometry, and Algebra II; (2) Integrated I, II, and III; or (3) at schools that offer both traditional and integrated mathematics curricula, A student may take any combination of the courses listed above so long as the courses are taken in a progressive sequence (e.g. Algebra, Integrated Mathematics II, Algebra II).

Conditions a student can substitute a Career and Technical Education (CTE) course

As provided in RCW 28A.230.097, a student may take a qualified CTE course in lieu of one of the courses indicated above so long as it meets the requirements set forth in RCW 28A.230.097, which include that the course be recorded on the student's transcript using the equivalent academic high school department designation and title.

Conditions a student can elect a course of study other than Algebra II

A student may elect to take a course other than Algebra II or Integrated Mathematics III if he/she meets the requirements set forth in the rule, which include the completion of two credits taken in a progressive sequence (ie. Algebra and Geometry; Integrated Mathematics I and II; or Algebra and Integrated II) and the mathematics course elected is based on the student's career oriented program of study identified in the student's high school and beyond plan that is currently being pursued by the student.

Role of parent/guardian and high school in process of student election of third math credit

The student's parents must determine that the course selection is more appropriate because it will better serve the student's education and career goals; A meeting is held with the student, his or her parent(s)/guardian(s); and a high school counselor or advisor for the purpose of discussing the students' plan and to advise of the mathematics requirements for credit bearing two and four year college level mathematics courses The parents must sign a written statement acknowledging that a meeting took place, that the information required was discussed, and that the course elected is more suitable than Algebra II or Integrated Mathematics III.

Implementation Issues

SBE staff and Steve Floyd met with some stakeholders to discuss an examination of implementation issues. We have data from the Professional Educators Standards Board on the number of teachers that would be needed to implement a third math credit, but we also need to explore some other issues with districts such as: how many students currently take a third math credit and in what subject area, availability of CTE equivalencies used for high school math credits, types of materials and professional development and estimated costs needed to implement the third credit. We may also ask some questions about a third science credit on this survey. We may use some of our education stakeholders to get this out, along with our proposed math rule. We have drafted a survey to send to districts, which is attached for your consideration.

Next Steps

Based on public comment and further Board direction, staff will prepare the rule to be filed with the code reviser. The Board will need to review the final math standards on the three high school math credits for Algebra I, Geometry and Algebra II. Once these standards are completed, the Board will take action on the rule for high school math graduation requirements. It is most likely that this will happen at the July Board meeting.





Washington State
Board of Education



Working to Raise Student Achievement Dramatically

RULE REVISION – 3RD MATHEMATICS CREDIT
March 14, 2008

WAC 180-51-061 [\(effective through June 30, 2009\)](#)
Minimum requirements for high school graduation.

(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, shall total 19 as listed below.

.....

(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 grade Washington assessment of student learning beginning 2008.

WAC 180-51-061 [\(effective July 1, 2009\)](#)
Minimum requirements for high school graduation.

(1) The statewide minimum subject areas and credits required for high school graduation, beginning July 1, 2004 [2009](#), for students who enter the ninth grade or begin the equivalent of a four-year high school program, shall total ~~19~~ [20](#) as listed below.

.....

(b) ~~Two~~ [Three](#) **mathematics** credits that at minimum align with mathematics grade level expectations for ninth and tenth grade, plus content that is determined by the district [the high school mathematic standards as developed and revised by the office of superintendent of public instruction and satisfy the requirements set forth below](#). ~~Assessment shall include the 10th grade Washington assessment of student learning beginning 2008.~~

[\(1\) Unless otherwise provided for in subsection \(3\) of this rule, the three mathematics credits required under this rule must include mathematics courses taken in the following progressive sequence:](#)

[\(a\) Algebra I, Geometry, and Algebra II;](#)

- (b) Integrated Mathematics I, Integrated Mathematics II, and Integrated Mathematics III; or
 - (c) Any combination of three mathematics courses set forth in (a) and (b) of this subsection but only if the courses are taken for credit in a progressive sequence (e.g. Algebra I, Integrated Mathematics II, Algebra II; Integrated Mathematics I, Geometry, Algebra II; Algebra I, Geometry, Integrated Mathematics III).
- (2) An equivalent career and technical education (CTE) mathematics course meeting the requirements set forth in RCW 28A.230.097 can be taken for credit instead of one of the mathematics courses set forth in subsection (1)(a) and (b) above if the CTE mathematics course is recorded on the student's transcript using the equivalent academic high school department designation and course title.
- (3) 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:
 - (1) Algebra I and Geometry;
 - (2) Integrated Mathematics I and Integrated Mathematics II; or
 - (3) Any combination of two mathematics courses set forth in (1) or (2) of this subsection taken in a progressive sequence (i.e., Algebra I and Integrated Mathematics II; Integrated Mathematics I and Geometry);
 - (b) the student's election 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) 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) of the student, and a high school counselor or advisor 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) sign a form acknowledging that the meeting with the school counselor or advisor has occurred, the information as required was discussed; and the parent(s)/guardian(s) agree that the third credit of mathematics elected is a more appropriate course selection given the student's education and career goals.



Washington State
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Proposed Draft Survey Questions for the 3rd Math and Science Credits

In 2007, the legislature requested that The State Board of Education adopt a third credit of mathematics for high school graduation. The Board has done an extensive review of other states, examined research on what students need to be successful in the world after high school, and listened to a variety of education stakeholders. The Board plans to adopt a rule, after a public hearing in July that will implement a third mathematics credit. The Board will consider in July whether to add a third science credit and/or second lab, as part of a package of new graduation requirements.

The Board wants to understand the implementation issues for school districts on the third credit of math and potentially a third credit in science and/or second lab, so that it can effectively advocate for resources and assistance for districts with the Joint Basic Education Finance Task Force and the Legislature.

(Please complete this survey --Date and time to be determined)

MATHEMATICS THIRD CREDIT

1. How many mathematics credits does your district currently require for high school graduation for the class of 2008?
 - a. 2
 - b. 3
 - c. 4
 - d. Other ____

2. What is the total enrollment (as of October 1, 2007) number of students in your district's high schools? (include those in alternative high schools) _____

3. Prior to their high school enrollment, what percent of your incoming 2007-08 freshman have completed one or more high school math credits?
 - a. Less than 5 percent
 - b. 5-9 percent
 - c. 10-19 percent
 - d. 20 or more percent

4. How many high school students (include alternative schools) in your district are currently taking a third math credit?
 - a. Total number of students taking third math credit.

5. How many students are taking the third math credit in:
 - a. Algebra II _____
 - b. Integrated III _____
 - c. Applied Math _____
 - d. WASL remediation course _____
 - e. CTE math equivalency course _____
 - f. Other _____ (describe)

6. Does your district have current math credit equivalencies for CTE courses?
 - a. Yes
 - b. No
 - c. If yes, please list the names of the equivalent courses _____

7. What will you need to do to implement the third credit of mathematics? (Select all that apply)
 - a. Purchase more curriculum materials
 - b. Purchase different curriculum materials
 - c. Revise counseling/advising sessions on high school and beyond plan
 - d. Provide professional development
 - e. Redeploy current teaching staff
 - f. Hire additional math teachers
 - g. Other _____

8. Based on your answers to the above question, what is your best estimate of the total costs (e.g. cost of additional teachers or support for students in terms of materials or extended time) for a third credit of math?
 - a. Less than \$100,000
 - b. 100,000-\$199,000
 - c. \$200,000-\$299,000
 - d. \$300,000-\$399,000
 - e. \$400,000-\$499,000
 - f. More than \$499,000
 - g. \$500,000 or more

Third Science Credit and/or a Second Lab Credit

9. How many science credits does your district currently require for high school graduation for the class of 2008?
- 2
 - 3
 - Other ____
10. How many high school students (include alternative schools) in your district are currently taking a third science credit?
- Total number of students taking third science credit: _____
11. Does your district have current science credit equivalencies for CTE courses?
- Yes
 - No
 - If yes, please list the names of the equivalent courses _____
12. What would you need to do to implement a third credit of science? (Select all that apply)
- Purchase more curriculum materials
 - Purchase different curriculum materials
 - Revise counseling/advising sessions on high school and beyond plan
 - Provide professional development
 - Redeploy current teaching staff
 - Hire additional science teachers
 - Create more CTE science course equivalencies
 - Other _____
13. If students were required to take two lab science credits, rather than the current one lab science credit, what would you need to do?
- Purchase more curriculum materials
 - Purchase different curriculum materials
 - Redeploy current teaching staff
 - Hire additional science teachers
 - Build new facilities
 - Reconfigure current space
 - Consider online possibilities
 - Contract to use lab facilities at local colleges
 - Use the local environment for lab work
 - Other _____

14. Based on your answers to the above question, what is your best estimate of the total costs (e.g. cost of additional teachers or support for students in terms of materials or extended time) for a third credit of science?
- a. Less than \$100,000
 - b. 100,000-\$199,000
 - c. \$200,000-\$299,000
 - d. \$300,000-\$399,000
 - e. \$400,000-\$499,000
 - f. More than \$499,000
15. Based on your answers to the above question, what is your best estimate of the total costs (e.g. cost of additional teachers or support for students in terms of materials or extended time) to require two credits of lab science?
- a. Less than \$100,000
 - b. 100,000-\$199,000
 - c. \$200,000-\$299,000
 - d. \$300,000-\$399,000
 - e. \$400,000-\$499,000
 - f. More than \$499,000