



# THE WASHINGTON STATE BOARD OF EDUCATION

Governance | Accountability | Achievement | Oversight | Career & College Readiness

<b>Title:</b>	<b><u>Biology Collection of Evidence Standard Setting Process and Revisiting the Standard Setting for Math Year 1 Collection of Evidence</u></b>	
<b>As Related To:</b>	<input type="checkbox"/> Goal One: Effective and accountable P-13 governance. <input type="checkbox"/> Goal Two: Comprehensive statewide K-12 accountability. <input type="checkbox"/> Goal Three: Closing achievement gap.	<input type="checkbox"/> Goal Four: Strategic oversight of the K-12 system. <input checked="" type="checkbox"/> Goal Five: Career and college readiness for all students. <input type="checkbox"/> Other
<b>Relevant To Board Roles:</b>	<input type="checkbox"/> Policy Leadership <input checked="" type="checkbox"/> System Oversight <input checked="" type="checkbox"/> Advocacy	<input type="checkbox"/> Communication <input type="checkbox"/> Convening and Facilitating
<b>Policy Considerations / Key Questions:</b>	<p>State Board of Education (SBE) is asked to consider approval of the process for setting standards for the Biology Collection of Evidence (COE), a legislatively-approved alternative assessment to the Biology End of Course Exam, and approval for the process of revisiting the standard for the Math Year 1 Collection of Evidence. The Biology End of Course Exam was administered for the first time in Spring 2012, and will be required for graduation beginning with the Class of 2015. The Math Year 1 End of Course Exam was first administered in Spring 2011, and the SBE set the cut score for meeting standard in the Math Year 1 COE in March, 2013. Sufficient revisions have been done on the Math Year 1 COE that The Office of the Superintendent of Public Instruction now recommends revisiting standard setting for the Math Year 1 COE assessment. The Board will have the opportunity to ask questions and engage in a discussion about the standard-setting process and about COEs.</p>	
<b>Possible Board Action:</b>	<input type="checkbox"/> Review <input type="checkbox"/> Adopt <input checked="" type="checkbox"/> Approve <input type="checkbox"/> Other	
<b>Materials Included in Packet:</b>	<input checked="" type="checkbox"/> Memo <input type="checkbox"/> Graphs / Graphics <input checked="" type="checkbox"/> Third-Party Materials <input checked="" type="checkbox"/> PowerPoint	
<b>Synopsis:</b>	<p>The SBE is required, under RCW 28A.305.130(4)(b), to identify the scores high school students must achieve to meet standard in statewide student assessment and obtain a certificate of academic achievement. The SBE sets performance standards and levels in consultation with the Superintendent of Public Instruction. The Office of the Superintendent of Public Instruction will present on and recommend to the board the process for standard setting for the Biology COE and the process for revisiting the Math Year 1 COE. In August 2014, the SBE will be asked to approve cut scores based on the process approved in March 2014.</p>	



## **BIOLOGY COLLECTION OF EVIDENCE STANDARD-SETTING PROCESS** **AND REVISITING THE STANDARD SETTING FOR MATH YEAR 1** **COLLECTION OF EVIDENCE**

### **Policy Consideration**

At the March 2014 State Board of Education (SBE) meeting, the SBE will be asked to consider approval of the process for developing a recommended cut score for the Biology Collection of Evidence assessment. In addition, the Board will be asked to consider approval of the process for revisiting the cut score for the Math Year 1 Collection of Evidence.

The Office of the Superintendent of Public Instruction (OSPI) will present the process for developing recommended cut scores. The Board will have an opportunity to ask questions and engage in a discussion about the standard-setting process and about Collections of Evidence.

Key questions may include:

- When starting up an assessment such as the biology Collection of Evidence what is done to make sure the process will be as fair for the initial students as for students in future years?
- What changes to the Math Year 1 Collection of Evidence assessment has led to the need to revisit the cut scores?
- How do alternative assessments such as Collections of Evidence fit into the assessment system and the state accountability system?

### **Background**

Under RCW 28A.305.130(4)(b), the SBE is responsible for identifying the scores high school students must achieve to meet standard in statewide student assessments that are required for graduation (exit exams). The requirement for the SBE to approve scores and work with OSPI on the state academic assessment system is described in statute:

RCW 28A.305.130 requires the SBE to “identify the scores students must achieve in order to meet the standard on the statewide assessment... [and to] determine student scores that identify levels of student performance below and beyond standard.”

RCW 28A.655.070 (3)(a) states that “In consultation with the state board of education, the superintendent of public instruction shall maintain and continue to develop and revise a statewide academic assessment system in the content areas of reading, writing, mathematics and science for use in the elementary, middle, and high school years designed to determine if each student has mastered the essential academic learning requirements....”

Collection of Evidence (COE) is a legislatively-approved alternative to state assessments, consisting of an evaluation of a set of work samples based on classroom work prepared by the student with instructional support from a teacher. COEs are the most widely used alternative assessments, with about 3,000-4,000 submitted per year in reading and writing combined, and about 5,000-7,000 submitted per year in mathematics. Other approved alternatives include a grade point average comparison and a substitution of SAT, ACT or Advanced Placement exam scores.

Students are able to access the COE only after having attempted an exit exam twice and not met standard. This restriction is partially due to cost. The approximate cost to the state of COEs is \$400 per collection: \$200 stipend paid to districts per collection, and approximately \$200 per collection for scoring. (The estimated cost of Smarter Balanced assessments will be \$27.30 per student, according to the Smarter Balanced website.)

Students complete their COE in a number of different ways:

- Some districts teach COE classes.
- Some students complete their COE at school, before or after regular school hours.
- Some teachers incorporate COE tasks into their class assignments so all students in the class complete a collection, and those who are not successful at the state assessments submit the collection.

The numbers of students meeting standard through COEs and other alternative assessments are not represented in state or school accountability measures other than indirectly in graduation rates. Yet, a higher percentage of low-income, English Language Learners, and other minority student groups are served by COEs than the general student population (September 25-27 Board packet), and the COE results for these groups show no discernable achievement gaps (SBE Blog Post, October 16, 2012). For some schools and some populations, consideration of COE results may be useful additional data for accountability.

Meeting standard on the Biology End-of-Course Exam, or an approved alternative, will be required for graduation beginning with the Class of 2015. The Biology End-of-Course Exam was first offered in spring 2012, and the cut scores for the End-of Course Exam was approved by the SBE on August 6, 2012.

The Mathematics End-of-Course Exams were first offered in spring 2011, and cut scores for the COE for Math Year 1 (Algebra/Integrated Mathematics 1) and COE for Math Year 2 (Geometry/Integrated Mathematics 2) were approved by the SBE at the March 29, 2013 Board meeting. Passing a Mathematics End-of-Course Exam was first required for the Class of 2013.

The table below shows the assessments required for graduation. As new standards are introduced, new assessments will be developed and implemented, as will new alternative assessments. Approving standards for the new assessments will be regular work of the Board for a number of years to come.

New assessments, and their associated alternative assessments, for which the SBE may be approving cut scores within the next 3 years include:

- 10th grade ELA Exit Exam based on the Common Core
- Algebra 1/Integrated Math 1 EOC Exit Exam based on the Common Core
- Geometry Integrated Math 2 EOC Exit Exam based on the Common Core
- 11<sup>th</sup> grade Smarter Balanced ELA Test cut score for high school graduation
- 11<sup>th</sup> grade Smarter Balanced Math Test cut score for high school graduation

**Figure 1: Assessments Required for Graduation, from OSPI State Testing website**  
<http://www.k12.wa.us/assessment/StateTesting/default.aspx>

Assessment Requirements for Certificate of Academic Achievement (CAA) / High School Diploma				
Subject	Classes of 2013 & 2014	Classes of 2015 & 2016	Classes of 2017 & 2018	Class of 2019
<b>English Language Arts</b>	Reading and Writing HSPEs*	Reading and Writing HSPEs* - OR- 10th grade ELA Exit Exam based on the Common Core** - OR- 11th-grade Smarter Balanced ELA Test**	10th grade ELA Exit Exam based on the Common Core - OR- 11th-grade Smarter Balanced ELA Test	11th-grade Smarter Balanced ELA Test
<b>Math</b>	Algebra 1/Integrated Math 1 EOC* - OR- Geometry/Integrated Math 2 EOC*	Algebra 1/Integrated Math 1 EOC* - OR- Geometry/Integrated Math 2 EOC* - OR- Algebra 1/Integrated Math 1 EOC Exit Exam based on the Common Core** - OR- Geometry/Integrated Math 2 EOC Exit Exam based on the Common Core** - OR- 11th-grade Smarter Balanced Math Test**		11th-grade Smarter Balanced Math Test
<b>Science</b>		Biology EOC - OR- Comprehensive NGSS Test***		

\* The HSPE will not be administered after summer 2014, math EOCs will not be administered after winter 2015.

\*\* This test is not available until spring 2015.

\*\*\* Until [Next Generation Science Standards \(NGSS\)](#) are adopted, implemented and assessed, students will be required to pass the Biology EOC. After NGSS are adopted, implemented and assessed, they will be required to pass a Comprehensive NGSS Test. The timeline of adoption/implementation/assessment of NGSS is undetermined.

**High School Proficiency Exams:** HSPEs are comprehensive exams that measure the basic proficiency of high school students in reading and writing, and serve as the state's exit exams in those subjects.

**End-of-Course Exams:** EOCs measure the knowledge of students in algebra 1/integrated math 1, geometry/integrated math 2 and biology when they complete each course. They serve as the state's exit exams for math and science.

**ELA Exit Exams and Math EOC Exit Exams:** Based on the [Common Core State Standards](#), the state will administer new English language arts (ELA) exit exams and math EOC exit exams to align with the new standards beginning in the 2014-15 school year.

**Smarter Balanced Tests:** Beginning in the 2014-15 school year, subjects included in the [Common Core](#) will be assessed using the Smarter Balanced system. Meeting standard on an 11th-grade Smarter Balanced test is a state-approved assessment alternative for ELA and math for the classes of 2015, 2016, 2017 and 2018. Starting with the Class of 2019, meeting standard on the Smarter Balanced tests will be required for high school graduation.

## Action

The Board will be asked to approve the process for determining the cut score for the Biology Collection of Evidence, and approve the process for reexamining the cut score for the Math Year 1 Collection of Evidence.

In August 2014, the Board will be asked to approve new cut scores for the Biology COE and affirm the original or approve new cut scores for the Math Year 1 COE, based on the processes approved in March 2014.

## **Standard Setting for the Biology Collection of Evidence**

The 2009 Science Learning Standards were first assessed at high school in the spring of 2012 with an End of Course exam in Biology. The State Board of Education (SBE) established the cut scores for this exam in August 2012 based upon the recommendations of a standard setting committee. OSPI will now present plans for conducting standard setting for the Biology Collection of Evidence for the Board's approval.

As a Certificate of Academic Achievement (CAA) option, students who do not meet standard on any general assessment, in this case the Biology End of Course, may use a Collection of Evidence (COE) to fulfill graduation requirements. For science, the Biology COE is to be available starting with students in the class of 2015. In August of 2014, SBE will be asked to approve the score students must achieve on the Biology COE to meet the proficient performance standard.

The standard setting process will include a committee of content and grade-level experts charged with using all available standard setting tools and data, along with examples of scored student work, in order to develop a picture of proficient student performance. The committee's experience, knowledge, expertise, and expectations will be used to recommend the "cut score" (the number of points necessary to meet standard out of the total of points possible) that most closely aligns to "Meeting Standard" or "Proficient" on the End of Course exam.

This briefing on the standard setting plan will give SBE an opportunity to review and ask questions about the standard setting process.

## **Revisiting Standard Setting for the Mathematics Year 1 Collection of Evidence**

The 2008 Mathematics Learning Standards were first assessed in the spring of 2011 with End of Course exams in Algebra/Integrated Mathematics 1 (Year 1 Math) and Geometry/Integrated Mathematics 2 (Year 2 Math). The State Board of Education (SBE) established the cut scores (the number of points necessary to meet standard out of the total of points possible) for these exams in August 2011. Subsequently, in March of 2013, SBE approved the scores students must achieve on a Collection of Evidence, for both Year 1 and Year 2 Math, to meet performance standards.

As a Certificate of Academic Achievement (CAA) option, students who do not meet standard on any general assessment, in this case the End of Course exams in Year 1 and/or Year 2 Math, may use a Collection of Evidence (COE) to fulfill graduation

requirements. For math, the COE was first available for the students in the class of 2013.

Since establishing the cut scores for the Math COEs, the bank of tasks (what could be referred to as the assessment items) for the Collection of Evidence in Mathematics Year 1 was updated in October 2013. It is necessary to reaffirm that the cut score set by the SBE in March of 2013 is still appropriate and reflected in student collections comprised of the new tasks. OSPI will now present plans for revisiting the standard setting process for the Year 1 Math COE for the Board's approval. The revisiting standard setting process will include a sub-committee of content and grade-level experts involved in the original March 2013 standard setting. The process will make use of all available standard setting tools and data, along with examples of scored student work, in order to develop a picture of proficient student performance. The committee's experience, knowledge, expertise, and expectations will be used to reaffirm the cut score determined to most closely align to "Meeting Standard" or "Proficient" on the End of Course Year 1 Math exams in 2013 or to recommend a changed cut score. In August of 2014, OSPI will report the determination of the committee to the SBE.

This briefing on the revisiting standard setting process will give SBE an opportunity to review and ask questions about the process.

**Prepared by the Office of the Superintendent of Public Instruction for the State Board of Education  
February 2014**

### **Introduction to the Collection of Evidence (COE)**

In March 2006, the Washington State Legislature authorized the Office of Superintendent of Public Instruction (OSPI) to implement three options assisting students in fulfilling assessment requirements for earning a Certificate of Academic Achievement (CAA). The three options are: GPA Comparison, substitution of college-entrance scores (ACT, SAT, AP) and the Collection of Evidence (COE). Specific to the conversation today, the information shared will focus on the COE program.

The COE is a compilation of work samples generated by students for submission to the state as an alternative to re-testing with the main assessment (the HSPE-Reading or Writing, or the End of Course math 1, math 2 or biology). With the 2013-2014 school year students may submit a COE in Reading, Writing, Mathematics and/or Biology. Eligibility to submit a COE requires a student to have taken the High School Proficiency Exam (HSPE) in reading and/or writing or End of Course (EOC) in mathematics and/or biology the two times prior to submitting a collection. For students transferring into a Washington public school in the 11th or 12th grade, direct access to the COE is permitted through submission of specific documentation. A student can submit a COE for each content area, but may only submit one COE per content area in the course of his or her high school matriculation.

The compilation of work samples is generated from selected tasks that are part of a larger inclusion bank – the inclusion bank provides for standardization of a COE submission by creating a series of tasks common for student access. OSPI, in conjunction with Washington State teachers, develops and implements COE passages, tasks, and prompts for the reading, writing, mathematics, and science COE. The passages, tasks, and prompts are held in a secure "inclusion bank." Teachers are allowed access after registering students for the COE submission.

In preparing a COE, a student works in an environment that allows for instructional support from a teacher. Students develop their work samples under the direct supervision of educators, following state guidelines for preparing and submitting the collection. Schools and districts ensure that the guidelines are followed and validate the sufficiency of student collections upon submission. The COE is scored at the state level using contracted scorers managed through an interagency agreement with Educational Service District 113. Student results are released to districts via an OSPI data exchange system upon the completion of each scoring evolution.

### **Biology Collection of Evidence Standard Setting Proposed Procedure**

Purpose of Standard Setting. A panel of grade-level/biology educators will meet in August 2014 to establish recommendations to the State Board of Education on the performance standard for the new Biology Collection of Evidence. The recommendation is based on a thorough analysis of the Performance Level Descriptors and informed by all of the additional information provided during the process— Performance Level Descriptors, an ordered-item booklet of items from the Biology End-of-Course exam, an ordered set of collections, and student performance on the biology collections overall.

Procedure. In the past, OSPI has guided the standard-setting panels through a three-day process. This process, used most recently to recommend cut scores for the Mathematics Year One and Year Two Collections of Evidence, includes the following strategies.

Day 1. Activities include:

- Taking the assessment (tasks) as a “student.”
- Scoring their task.
- Discussing the Performance Level Descriptors (PLDs) in preparation for their use in making the necessary judgments on the cut score.
- Review of a subset of ordered items from the Biology End-of-Course exam.

Day 2. After being trained in the PLDs, panelists will be given a set of 20 collections, selected to create a rectangular distribution of scores across the effective range of scores found in the population. Prior to the standard setting meeting, each collection will receive a score that reflects the number of points earned out of the number of points possible for a total collection. In Round 1 panelists will use this set of actual collections, ordered according to Total Points, to narrow the range of collections to those that encompass the “Proficient/Not Proficient” range, or “gray area.”

Day 3. In Round 2 (Pinpointing #1) panelists use a modified set of 20 collections, including collections identified as composing the “gray area” and additional collections in that same score range. A table provides the raw score for each of the 20 collections. From this set, each panelist independently classifies each collection as to whether or not it represents a “Proficient” body of work.

In Round 3 (Pinpointing #2) an anonymous “feedback matrix” including the average selection, impact data, and the frequency distribution will be provided to the panelists to stimulate small group discussion. Panelists independently select the collection that demonstrates a “Proficient” body of work for a second time, drawing upon the small group discussion.

The standard setting process uses the committee’s experience, knowledge, expertise, and expectations to determine the “cut score” (the number of points necessary to meet standard out of the total of points possible) that most closely aligns to “Meeting Standard” on the Biology EOC. This standard setting procedure, successful for the Mathematics Collections of Evidence standard setting in 2013, is being proposed for the Biology Collection of Evidence, pending State Board approval.

### **Biology Collection of Evidence Estimated Submissions**

Predicting the number of submissions for each scoring round is an inexact science. With Biology Collection of Evidence (COE) being administered for the first time this year, there is no prior data to consider. That said, OSPI would like to present information in support of a projection of 3,000-3,500 submissions for Fiscal Year 15 (summer 2014 and winter 2015).

Class of 2015 students, the first to have access to the Biology COE, may submit in either summer 2014 or in winter 2015. This will be the cohort from which the projections will be based. According to the latest eligibility updates derived at OSPI, there are currently 2,548 students statewide who are eligible to submit a Biology COE. Per the guidance provided by OSPI, these are students who have taken and failed the Biology End of Course (EOC) exam twice. The number is expected to increase when results from the winter 2014 administration are available in April, as more students will have accessed their second attempt on the EOC.

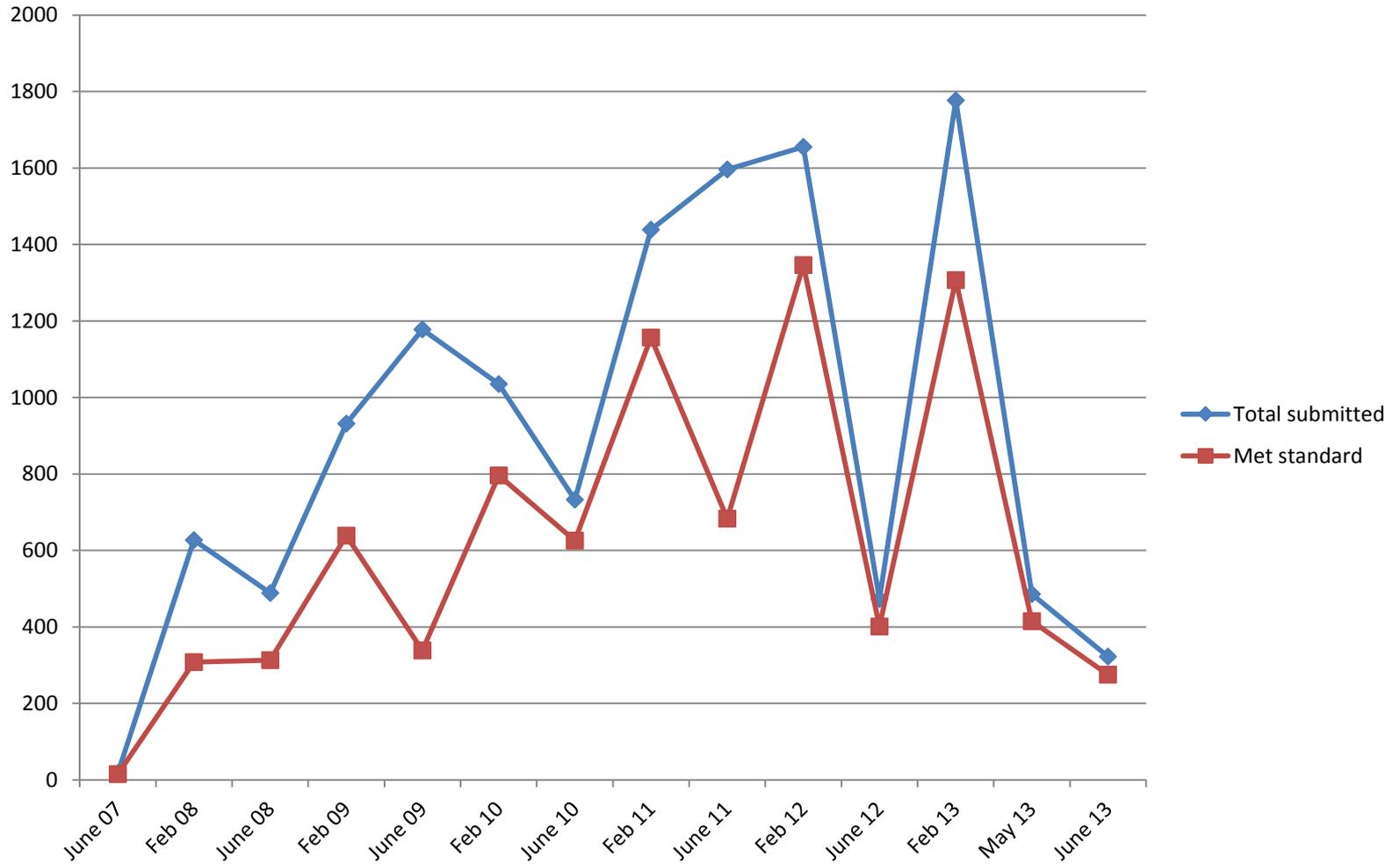
According to OSPI numbers, there are approximately 19,000 students in the Class of 2015 who have yet to pass the assessment and have only one attempt. Due to previous experience in other content areas, OSPI predicts fewer than 50% will pass in this retake attempt, which leaves a pool upward of 12,000 students using round numbers for the argument). Further, from previous experience with other COE content areas,

submissions run approximately 25% of the eligible student pool, which results in approximately 3,000 collections from Class of 2015 students next year (Summer 2014 and Winter 2015 submissions).

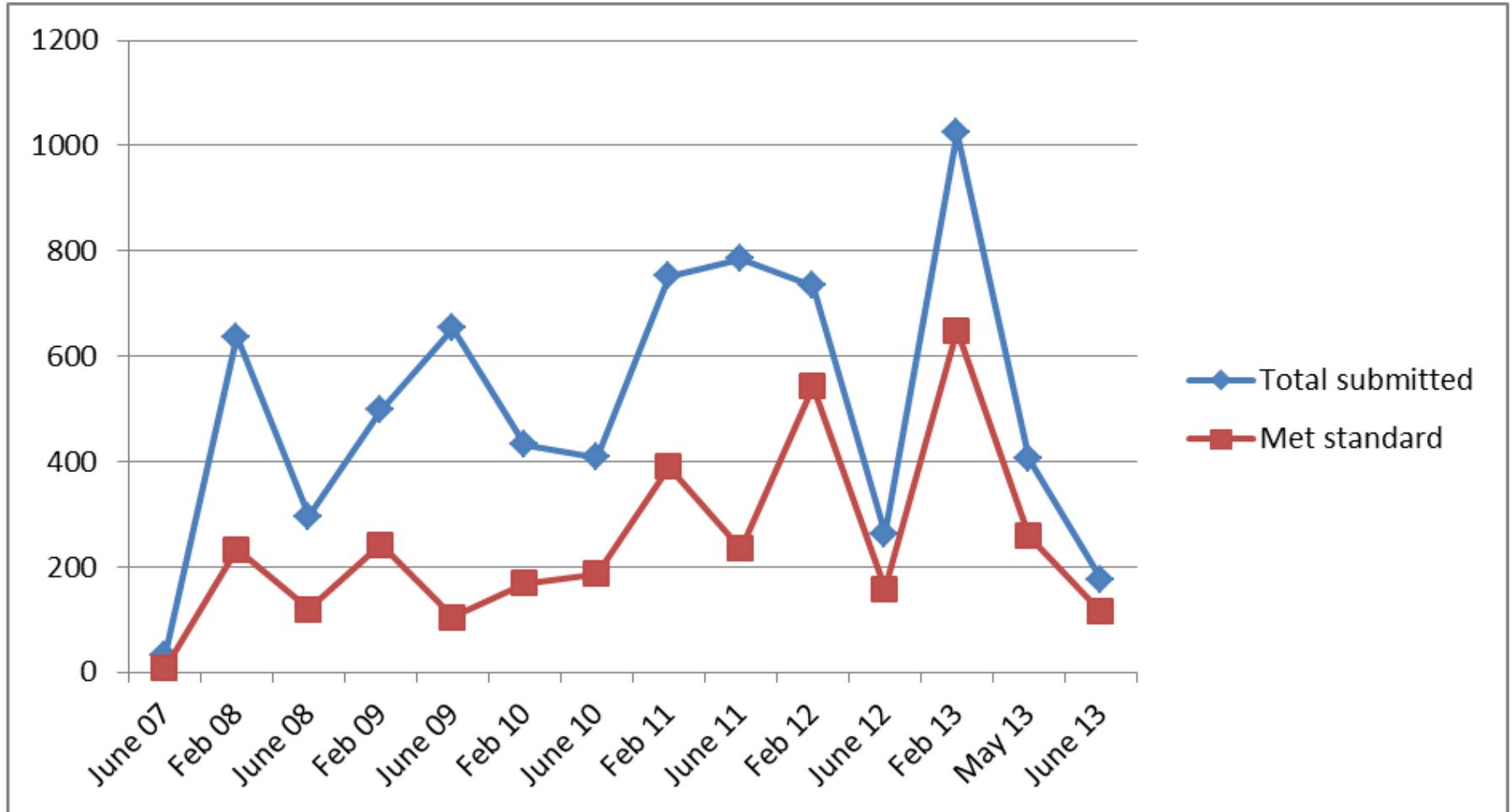
Other factors that may push the projection higher - there are fewer alternatives for meeting standard on biology since there are no ACT and SAT options. There are also not as many options for remediation because students tend to take biology once and move on. At present OSPI could only offer that we push the projection higher, say to 4,000 when taking into account these other issues.

# Collection of Evidence: Submissions and Results

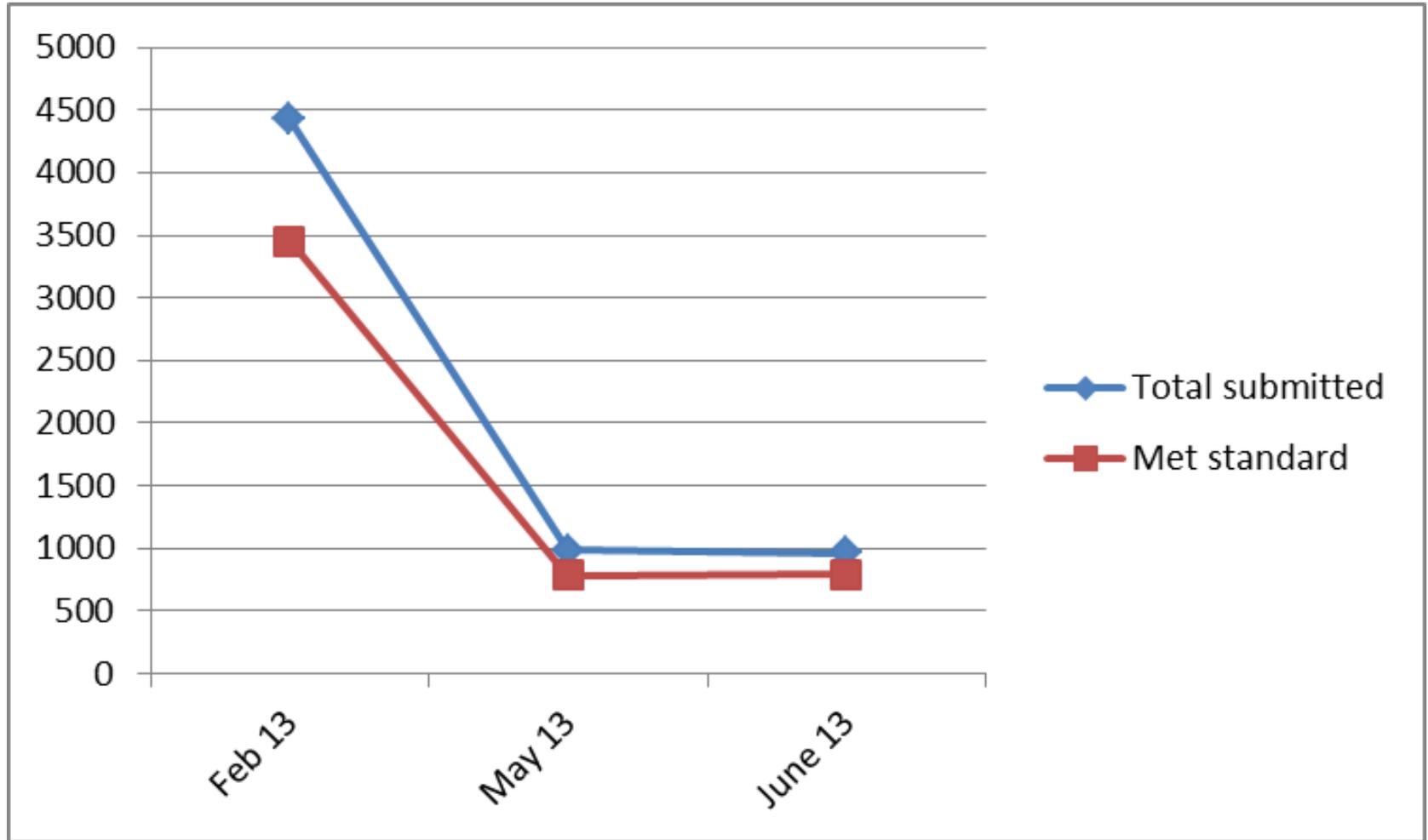
# Reading COE



# Writing COE



# Math COE – Year 1



# Math COE – Year 2

