

Approved High School Courses: Mathematics

Part 1: Integrated Math Courses Aligned with Common Core State Standards

The Background:

Rules, Regulations, and Minimum Standards of the State Board of Education 0520-01-03-.05(1) calls for the State Board of Education to adopt curriculum standards for each subject area, grades K-12. The approved standards are to be the basis for planning instructional programs in each local school system. Section 3.205 Approved High School Courses of the State Board of Education Policy identifies those courses which have been approved by the Board for instruction across the state. The Department of Education proposes adoption of the integrated (Core) math courses aligned with the Common Core State Standards.

The high school math standards are organized by conceptual category. The standards are divided into two different course sequences: Integrated Math sequence (Core Math I, II, and III) and the Traditional Math sequence (Algebra I, Geometry, and Algebra II). We are proposing to call the courses in the integrated sequence Core Math I, II, and III.

Part 2: Response to Instruction and Intervention, Tier III Intervention Course

The Background:

Rules, Regulations, and Minimum Standards of the State Board of Education 0520-01-03-.05(1) calls for the State Board of Education to adopt curriculum standards for each subject area and grades K-12. The approved standards will be the basis for planning instructional programs in each local school system. Section 3.205 Approved High School Courses of the State Board of Education Policy identifies those courses which have been approved by the Board for instruction across the state. The Department of Education proposes adoption of a Tier III Mathematics Intervention course for high school that will follow component four of the Response to Instruction and Intervention Initiative.

Through the Response to Instruction and Intervention, Tier III addresses 3-5 percent of students who have received Tier I instruction and Tier II intervention and continue to show marked difficulty in acquiring necessary mathematics skill(s). It could also include students who are one and a half (1.5) to two (2) years behind or who are below the 10th percentile on a universal screener and require the most intensive services immediately. Students at this level should receive daily, intensive, small group intervention targeting specific areas of deficit; this intervention may be in addition to interventions received in Tier II.

A high school Tier III intervention course is needed because struggling learners need more time and instruction to learn and apply strategies and concepts. For some students, Tier II interventions will not be sufficient to successfully meet their needs, and they will require a more intensive intervention that is explicit and focused on the area of skill deficit. Increasing frequency and duration is required in Tier III. One of the most frequently encountered barriers for high school implementation of RTI is scheduling issues. More time in and of itself is not the answer and it will not increase student academic growth. If the same strategies and curriculum are delivered in the same way, such as in a Credit Recovery system, student's specific needs will not be met. The intervention time must be targeted to the specific needs, or deficits of the student. Needs are identified through assessment. Because the needs of Tier III students are very specific and skill based, smaller instructional groupings are needed. Tier III interventions are progress monitored more frequently to see if students are acquiring the needed skills (at least once every other week). For students with significant deficits, the majority of the complex mathematics materials in Tier I classes will be too difficult for them to access. Schools determine the student's skill deficit(s) and provide the needed interventions for these students so that they can access Tier I materials at an instructional or independent level.

A high school Tier III intervention course will not have specific standards. The mathematics courses will use assessments to determine the specific student needs or deficits. Tier III interventions should be systematic, research-based interventions that target the student's identified area of deficit (mathematics calculation, mathematics reasoning (problem solving)). The interventions are developed at the school level based on the unique needs of the students and thus do not adhere to grade-level standards. Students in need of Tier III interventions are significantly below grade-level.

In the high school Tier III Mathematics Intervention course students will receive 1/2 credit per course (90 instructional days). Using progress monitoring data to make data-based decisions, students may repeat the intervention courses as needed and move in and out of the intervention courses as needed. These data-based decisions should be made by the School RTI² Support Team. These are elective courses beyond the required mathematics classes needed for graduation. These courses will be offered daily (or as described in Component 4.2 of the RTI² manual) and will be taught by a certified teacher. These courses will use research-based interventions and follow the guidelines within Component 4.1 of the RTI² manual for Tier III intervention. The majority of the course should be direct intervention provided by a certified teacher; however, computer-based and/or technology assisted interventions can be used a portion of the time. The intervention program should match the area of deficit and be delivered with high fidelity. It is recommended that class size should not exceed a 1:12 ratio.

The Recommendation:

The Department of Education recommends adoption of the Common Core State Standards for Mathematics by course and the Tier III Mathematics Intervention course on final reading. The SBE staff concurs with this recommendation.

Proposed Policy

Section 3.205 Approved High School Courses of the State Board of Education Policy 7. Mathematics—the third footnote

7. Mathematics

7.1. Mathematics Course Sequence *

- 7.1.1. Foundations I, II, Algebra IA**
- 7.1.2. Algebra I/[Core Math I](#) ***
- 7.1.3. Geometry/[Core Math II](#) ***
- 7.1.4. Algebra II/[Core Math III](#) ***
- 7.1.5. Advanced Algebra and Trigonometry
- 7.1.6. Statistics
- 7.1.7. Discrete Mathematics with Statistics & Probability
- 7.1.8. PreCalculus
- 7.1.9. Calculus
- 7.1.10 Advanced Placement Statistics
- 7.1.11 Advanced Placement Calculus AB/BC
- 7.1.12 Bridge Math Course****
- 7.1.13 Senior Finite Math****
- [7.1.14 Tier III Mathematics Intervention](#)

- * All students who enter high school beginning in 2009-10 must earn four credits in high school mathematics including Algebra I, Geometry, and Algebra II or the equivalent, and another mathematics course beyond Algebra I. Students must be enrolled in a mathematics course each school year.

For those students who have met the ACT and/or SAT college readiness benchmarks in mathematics, the following courses may satisfy the requirement for being enrolled in a mathematics course for a fourth (or more) credit option: Physics, Advanced Placement Physics B, C, or Advanced Placement Computer Science.

Students enrolled in high school prior to 2009-10 must earn at least three credits in high school mathematics which must include a course equivalent to Algebra I. Students who entered high school in 2005-06 will also be required to complete one of the following: Geometry, Technical Geometry, Algebra II, or Integrated Mathematics II as part of the three required units.

- ** Foundations I & II courses are elective credit only for students who enter high school beginning in 2009-10. Students who entered high school prior to 2009-10 may receive a maximum of one mathematics credit for a course in Foundations I, Foundations II, Technical Math (formerly known as Mathematics for Technology I) or Algebra IA. Students who enter high school prior to 2005-06 may receive a maximum of two credits for these courses. Note: Technical Math will no longer be offered effective 2009-10.

*** Algebra I, Geometry, and Algebra II may be substituted (if available) with an equivalent course (same content standards) with different instructional methodology such as honors, CTE, or extended time (A/B courses). A courses are elective credit only. Math content credit is awarded upon completion of the B courses. Note: Core Integrated Math I, II, & III courses may substitute for Algebra I, Geometry, & Algebra II in its entirety.

**** The Bridge Math course is designed for students who have not scored 19 or higher on the ACT by the beginning of the senior year. The Finite Senior Math course is designed for students who do not wish to take a more traditional STEM math course. These courses are currently under development with planned implementation to serve students graduating under the Ready Core requirements pending board approval.