Math Graduation Curriculum Requirement

INFORMATION FOR STUDENTS, FAMILIES AND TEACHERS

Students in the class of 2014 and beyond need four credits of high school mathematics as one requirement to earn an Ohio high school diploma.

The only math course required in state law is Algebra 2/Math 3 or its equivalent. The recommendation is that students complete Algebra 2/Math 3 by the end of their third year in high school. Algebra 2/Math 3 or its equivalent is the highest-level math course required for graduation. The other three math credits must be high school level courses.

MEETING THE GRADUATION REQUIREMENT OF FOUR MATH CREDITS

Students may take any combination of high school and/or college-level mathematics courses to earn the four credits of high school mathematics as long as one of the credits is Algebra 2/Math 3 or its equivalent.

The fourth math course can, but does not need to, be higher than Algebra 2/Math 3 or its equivalent. Suggested fourth math courses are pre-calculus, statistics, transitions to college algebra, computer science, AP mathematics courses, trigonometry, quantitative reasoning and many career-technical education courses. All courses must be at least high school level and be based on the content in Ohio's Learning Standards.

OHIO LAW PROVIDES FLEXIBILITY*

Schools may offer several ways for students to learn and develop math skills and reasoning.

Offer a math support class in addition to the regular math class – Students take two separate math classes for one math course (example: geometry). The student takes the regular geometry class. At the same time, the student also takes a math support class in geometry in which an appropriately licensed mathematics/Highly Qualified Teacher provides extra support and teaching in geometry. The goal is to help the student keep up and succeed with the pace, rigor and accountability of the regular course. Credit is awarded for both classes, fulfilling up to two mathematics credits. The student earns credit proportional to the amount of time of the support class. For example, if the support class is 30 minutes, the student earns three-fourths of a math credit when completing the support class.*

Complete a two-year math course – Teachers can modify instruction so that a math course (for example, Algebra 2) is a two-year course. The content must be rigorous as defined by Ohio's Learning Standards. The teacher uses teaching strategies that allow students more time to learn math differently. This approach to learning should include, but is not limited to, in-depth, hands-on opportunities for students to solve problems. Students achieve the same expected understanding of mathematics as in a traditional one-year math class.*

Extend the time of a math class – Students take a math course that is double the time of a typical class period. In many schools, districts handle this type of class through a block schedule. This allows more time during the class period for students to investigate problems and create solutions that help them develop mathematical understanding, skills and procedures. Students earn mathematics credit proportional to the time associated with the course.*

* The NCAA recognizes 1 credit per course for college admission and athletic eligibility. Please see NCAA handbook for further details.

FOR STUDENTS TAKING HIGH SCHOOL MATHEMATICS COURSES IN MIDDLE SCHOOL

Students who demonstrate an advanced understanding of key mathematical concepts may progress, or accelerate, to a higher course in math. The local school district establishes the criteria for placing students in a higher course. This means that students who are taking high school-level math courses in middle school have the opportunity to earn math credit(s) to meet math graduation requirements. **Pre-algebra classes in middle school do not qualify as high school-level courses to meet graduation requirements.**

The course must fulfill two requirements to receive high school credit:
- The local school board of education for the district determines that the course is high school-level content using the guidance of Ohio's Learning Standards.
- An appropriately licensed mathematics teacher or Highly Qualified Teacher (ORC 3912.22 and ORC 3319.222) teaches the course. Further clarification on teacher certification requirements is here.

OPTION TO GRADUATE WITHOUT EARNING AN ALGEBRA 2/MATH 3 OR EQUIVALENT CREDIT

During the third year of high school, a student may decide that he or she is not prepared to achieve the higher-level math course or is planning a career that does not require higher level math. The student, with agreement of parents, may choose to opt out of the new high school curriculum for graduation. The opt-out provision is available only to the graduating classes of 2014 through 2019. For more information, click on Ohio Curriculum Choices.

Students who entered high school on or after July 1, 2015, and who are pursuing a career-technical education pathway may be able to replace the Algebra 2/Mathematics 3 requirement with a career-based mathematics course. For more information, click on CTP Algebra 2 Replacement.

USING COMPUTER SCIENCE TO SATISFY MATHEMATICS CREDIT

State law permits schools to allow a student to use a computer science course to satisfy credit for mathematics, advanced mathematics or advanced science courses. Courses in computer science provide an alternative way for students to demonstrate what they know and can do. This option also will support students who plan to enter specialized careers that draw on knowledge and skills learned in computer science courses. Districts can record credits for computer science using the appropriate computer science subject codes in EMIS. Each district is responsible for tracking how students fulfill graduation requirements. Ohio encourages districts to have a system in place for recording transcripted credit(s) in computer science whenever they apply it toward the fulfillment of credit(s) for graduation.

APPLYING CREDIT IN COMPUTER SCIENCE TO SATISFY A MATHEMATICS CREDIT

Districts may use credit in a computer science course to satisfy a student's mathematics credit. For them to do so, the course must address high school mathematics standards and focus on the study of, or usage of, algorithms for problem solving. A course that focuses only on learning a computer language without application and analysis does not qualify for mathematics credit. The district chooses the content and standards associated with each course and determines whether each course complies with these guidelines. Find additional guidance on the requirements for mathematics courses beyond Geometry/Math 2 in the Requirements for Mathematics Courses Beyond Geometry/Mathematics 2 document.

NOTE: A student may satisfy only two of the four required mathematics graduation credits with credit in computer science.

APPLYING CREDIT FROM AN ADVANCED COMPUTER SCIENCE COURSE TO SATISFY CREDIT FOR ALGEBRA 2/MATH 3 OR EQUIVALENT

Starting in spring 2018, a student may choose to apply one credit of advanced computer science to satisfy one unit of Algebra 2/Math 3 or equivalent. Only credit in an advanced computer science course can be used to satisfy the Algebra 2/Math 3 or equivalent graduation requirement in mathematics. An advanced computer science course must address standards in the grades 9-12 advanced section of Ohio's Learning Standards for Computer Science and must be recorded as advanced in the EMIS Course Level Element field (CN080).

Students should consider their career goals and the requirements of postsecondary institutions admission and program requirements when choosing to use computer science courses to satisfy graduation requirements.

Students who choose to take advanced computer science in lieu of Algebra 2/Math 3, or the equivalent, need to be aware that some institutions of higher education may require Algebra 2/Math 3 or equivalent for the purpose of college admission. Also, the parent, guardian or legal custodian of any student who chooses to take advanced computer science in lieu of Algebra 2/Math 3 or equivalent must sign and submit to the school a document that contains a statement acknowledging that not taking Algebra 2 may have an adverse effect on college admission decisions (ORC 3313.603).

NOTE: A single credit in advanced computer science may only be used to satisfy one Algebra 2/Math 3 or equivalent, or an advanced science (excluding Biology or Life Sciences) credit.
Note: Ohio high school graduates who choose to participate in intercollegiate athletics should refer to the NCAA rules for details on how using credit in advanced computer science to satisfy algebra 2/math 3 may affect their eligibility.

INFORMATION FOR SCHOOL ADMINISTRATORS

Ohio law permits students to earn graduation mathematics credit proportional to the time associated with the course. If a course is offered over two years, it is recommended that the first year utilize the respective Applied EMIS code followed by the typical course code. The Applied course codes may also be used for a full year course satisfying the graduation credit requirement.

Students enrolled in a two-year math course are not expected to take the end of course exam at the end of year one. The department recommends students take the end of course exam at the end of year two.

High School Course – EMIS Code
- o Applied Algebra 1 or Applied Mathematics 1 - 110480 → Algebra 1 - 110301
- o Applied Geometry or Applied Mathematics 2 - 110490 → Geometry - 111200
- o Applied Algebra 2 or Applied Mathematics 3 - 110500 → Algebra 2 - 110302