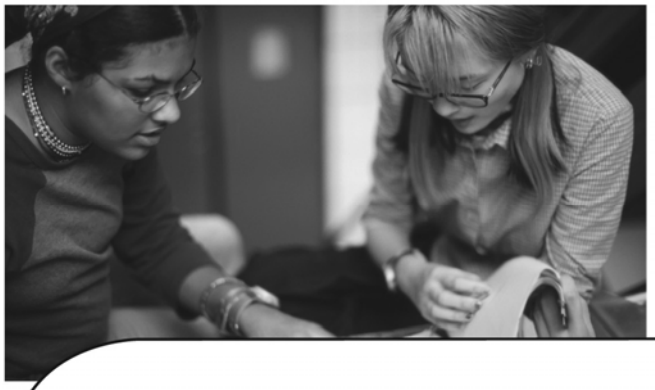
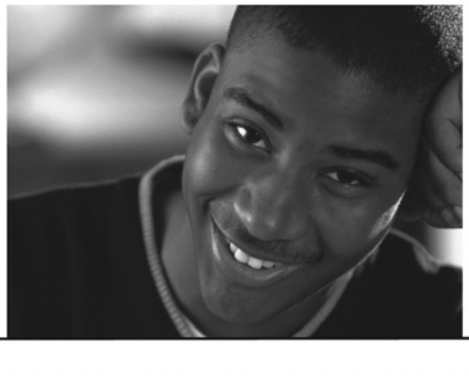
Oh, that explains it





Michigan Merit Curriculum
High School Graduation Requirements

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Updated November 2007

COURSE/CREDIT CONTENT EXPECTATIONS

Since the passage of the new state high school graduation requirements commonly referred to as the Michigan Merit Curriculum, the Michigan Department of Education has worked with hundreds of educators and representatives from professional organizations and higher education to develop documents and materials that outline what students should know and be able to do in required courses/credits during their high school experience.

Two main sets of documents called *High School Content Expectations (HSCE)* and specific *Course/Credit Content Expectations* and Guidelines provide educators with the tools needed to align their curriculum and instruction and provide parents with meaningful information to gauge student progress. These expectations also serve as the basis to determine student proficiency, grant high school credit, and develop various questions for the Michigan Merit Exam.

The Michigan Merit requirements are based on what research shows will provide students with the educational foundation to be successful as they move beyond high school into college and the workplace.

MATHEMATICS

What the Michigan Merit Curriculum Law Says

380.1278a(a)(i) The board of a school district or board of directors of a public school academy shall not award a high school diploma to a pupil unless the pupil has successfully completed at least 4 credits in mathematics that are aligned with subject area content expectations developed by the Michigan Department of Education and approved by the State Board of Education before graduating from high school.

Students must complete at least Algebra I, Geometry, and Algebra II, or an integrated sequence of this course content that consists of 3 credits, and an additional mathematics credit, such as Trigonometry, Statistics, Pre-calculus, Calculus, Applied Math, Accounting, Business Math, or a retake of Algebra II. Each pupil must successfully complete at least 1 mathematics course during his or her final year of high school enrollment.

Sec. 1278b(5)(f) The mathematics credit requirements may be modified as part of a personal curriculum only after the pupil has successfully completed at least 2-1/2 credits including Algebra I, Geometry and 1 semester of Algebra II or the same content as 1 semester of Algebra II and only if the pupil successfully completes at least 3-1/2 total credits of the mathematics credits required under that section before completing high school including 1 mathematics course during his or her final year of high school. Under a personal curriculum, a student may elect to complete the same content as Algebra II over two years, with a credit awarded for each of those two years.

Background Information

The Mathematics High School Content Expectations (HSCE) are organized in 4 strands, 14 standards, and 157 expectations which students are expected to meet by the end of high school and represent 3 mathematics credits. There is no required course sequence. The only requirement is that students be proficient in the required Course/Credit Content Expectations to receive 3 of the 4 required mathematics credits.

If a traditional sequence of instruction is selected, the Algebra I, Geometry, and Algebra II Course/Credit requirements define the expectations for those courses. Course/Credit requirement documents for Pre-calculus and Statistics define the expectations for earning additional optional credits in these areas. The overarching goal for the HSCE is for students to exhibit the "habits of mind" that will result in the Components of Mathematical Proficiency listed in the Successful Post-Secondary Engagement chart on page four of the HSCE document available on the Michigan Department of Education's high school web site at

www.michigan.gov/highschool. These dispositions are developed throughout the four years of high school mathematics instruction by building, refining, applying, and extending the knowledge, skills, and strategies incorporated in the 14 standards and 157 expectations. Updated 9/07

What Research Says

Studies show students taking four years of challenging math including Algebra I, Geometry, Algebra II, and one additional higher-level course are more likely to succeed in college and the workplace. Eighty-four percent of individuals who currently hold highly paid professional jobs have taken Algebra II or higher as their last high school math course. In Michigan, nearly half of all high school graduates did not take four years of challenging math including Algebra II.

Questions & Answers

1. **Q: If students take Algebra I over two years, can they earn credit for both years?**

   A: The law implies all graduation requirements other than Algebra II, regardless of the length of time a student spends in a classroom, should count as 1 credit. The law does allow students taking Algebra II over two years through an approved Personal Curriculum to receive 1 credit per year for a total of 2 credits. The first of these 2 credits, however, may not be recorded as Algebra II since the student has not yet completed all the content expectations. The first credit must be recorded with some other Math title (e.g. Algebra II Prep, Pre-Algebra, etc.).

   A district, however, may allow high school students taking Algebra I for example, to take a support course, during the same high school year and earn their 4th mathematics or math-related credit.

   It is also possible for a district to offer Algebra I over two years. In this case, however, Algebra I credit cannot be awarded until the student successfully completes the second year and demonstrates proficiency. Updated 9/07.

2. **Q: Will it still be possible for our high school students to take Pre-Algebra for high school credit?**

   A: Yes, if the credit is taught in high school and the district determines Pre-Algebra, Algebra Concepts or other courses meet their 4th mathematics or math-related credit requirement, the district may decide to grant students credit. However, students who have not mastered the 8th grade mathematics content expectations and are beginning their high school careers with Pre-Algebra may have difficultly in meeting the requirements for Algebra I, Geometry, and Algebra II in four years without some additional mathematics support. Updated 9/07

3. **Q: If a student has a personal curriculum, modifying Algebra II and only completes .5 credits, is he or she allowed to graduate with 3 ½ credits of Mathematics, rather than 4 credits?**

   A: No. A student must successfully complete a total of 4 math credits including math in their final year. Updated 11/07

4. **Q: If a student has taken Algebra I, Geometry, Algebra II, and Pre-calculus prior to senior year, is the student still required to take Math in the senior year?**

   A: Yes. The requirement is that a student must successfully complete a mathematics or math-related course in the final year of high school. This requirement could be met by taking either a mathematics course or a math-related course. It is at the discretion of the local district to determine what credits would count as "math-related." Updated 9/07

5. **Q: Does the required 4th credit in math have to be in math beyond Algebra II (for example, Pre-calculus or Trigonometry)?**

   A: No. The law requires a 4th mathematics credit, but provides local districts with the flexibility to determine what counts for the 4th mathematics credit. The credit does, however, need to be a high school level course. The credit could be in a basic or an applied math area, such as Business Math, Accounting, Consumer Math, Applied Math, General Math, Pre-algebra, etc., or from Career and Technical Education or Work Study program or other high school level math program.

   The 4th mathematics credit is not necessarily synonymous with the senior year math credit. For example, students could take a pre-algebra II class as a junior that would count as the 4th credit and then take Algebra II as a senior. An integrated sequence of mathematics could incorporate the required HSCE in each of the 4 years plus enough additional mathematics content to warrant the awarding of 4 credits. Updated 9/07

6. **Q: If a student has to take a math-related class in the final year, doesn't that preclude participation in relevant senior year experiences like a practicum, independent study, or cooperative employment?**

   A: No. A practicum, independent study, or cooperative employment experience can be structured to include math-related elements and fulfill the requirement for a 4th credit in mathematics aligned with the HSCE as determined by the district.

MATHEMATICS ADDITIONS 9/07

7. **Q: Can a student earn two high school credits for math while in middle school, e.g., Algebra I in 7th grade and Geometry in 8th grade?**

   A: Yes. There is no limit to the number of state required high school graduation credits a student can earn prior to high school if the following criteria are met:

   - The middle school class must cover the same content expectations as the high school class.
   - Proficiency must be assessed using the same assessment(s) (e.g. exam) used at the high school.
   - The level of proficiency expected in order to "pass" (e.g. 80%) must be the same as at the high school.

8. **Q: Can a college math course count as the 4th required math credit?**

   A: Yes, if the district determines the college math course meets district requirements for the 4th Michigan Merit Curriculum math credit it should be counted, as well as placed on the student's transcript.

9. **Q: Does the 4th math or math-related credit need to be aligned to the High School Mathematics Content Expectations?**

   A: That depends. For students not requiring a personal curriculum or requiring a personal curriculum after completing ½ year of Algebra II, the 4th math or math related credit does not need to be aligned.

   For students with disabilities requiring a personal curriculum, all math credit must be aligned with the HSCE or K-8 Mathematics Grade Level Content Expectations to ensure students are proficient in as many mathematic expectations as possible.

10. Q: Can a district require students to take a math or math-related credit each year he or she is in high school?

A: Yes. Most students who begin to take the four state math credit requirements in high school will be taking a math or math-related credit each year. However, for students who begin earning high school level math credits in middle school or test out of one or more requirements, a district may establish credit requirements above and beyond the state graduation requirements. This could include a requirement to enroll in Math courses all four year, regardless of the number of high school Math credits earned prior to high school.

11. Q: If students in a district on a trimester schedule have completed 1 credit each of Algebra I, Algebra II, and Geometry, along with ½ credit of Statistics, for 3-1/2 total math credits by the spring of their junior year, does a ½ credit in a personal accounting class meet the math requirement in a student's senior year?

A: Yes. All students need 4 credits of math including a math or math related course in the senior year. Given students will have 3 ½ credits of math by their senior year and if your district has determined the personal accounting course will meet the math or math-related credit requirement, then the ½ credit in a student's senior year will meet the requirement.

12. Q: If a student earns 4 credits of math by the end of their junior year, and is enrolled in a Physics class during their senior year for science credit, can the Physics course also be counted as a "senior math experience" if he or she does not receive a math credit?

A: That depends. If a student has already satisfied the 3 credit graduation requirements in science, then yes. However, if a student is taking physics as part of the 3 credit requirement, it cannot be counted as both a science and math or math-related credit.

13. Q: Can a program like the Michigan State University C.H.A.M.P. (Cooperative Highly Accelerated Mathematics Program), which allows students to complete the traditional four year high school mathematics program in two years, meet the requirements and count for credit under the Michigan Merit Curriculum?

A: Yes, if the district granting credit determines the courses meet the course content expectations and students are able to demonstrate proficiency with these expectations. The Michigan Merit Curriculum outlines the minimum all students should know. It is not intended to limit those students who are capable of going beyond the required HSCE but instead encourages flexibility with addressing the needs of all students, including students capable of acceleration. Students still need to earn a math or math-related credit in their final year of high school.

14. Q: What options are available for students who are struggling in Algebra II?

A: It is up to each district to assess student needs and determine appropriate options to support students who are struggling in mathematics. Many districts choose to offer support classes such as Algebra Concepts, Pre-Algebra, tutoring and/or a resource lab, or other supports. In addition, a student may request a Personal Curriculum that would allow him or her to take Algebra II over two years for 1 credit each year.

The Michigan Merit Curriculum is part of a systemic education reform. With the advent of the K-8 Grade Level Content Expectations, which clearly outline what students need to know and be able to do at the end of each grade, and with MEAP testing of students in mathematics beginning in 3rd grade, schools should identify struggling students and provide support long before they reach high school. In addition, while the MMC and the mathematics High School Content Expectations define the content all students should know to be successful with their post-secondary endeavors, it does not define how this content should be taught. Schools can (and should) differentiate their instruction to meet the needs of all their students, including those at both ends of the learning spectrum.

15. Q: If a student takes the following sequence of courses, has he or she met all the Michigan Merit graduation requirements?

9th grade - Algebra I
10th grade - Geometry
11th grade - Algebra II ("first" half of the HSCE)
12th grade - Algebra II ("second" half of the HSCE)

A: No, unless a student or parent initiated and received approval for a Personal Curriculum requesting Algebra II be taken over two years for 2 credits.

16. Q: Who is working on instructional strategies for all students to learn Algebra II?

A: Michigan Mathematics Leadership Association (MMLA), with support from the Michigan Department of Education, is working with individuals in the field to create a clarification document for the Content Expectations. This document will provide clarifications and support strategies for all students.

Also, many local and intermediate districts and the Michigan Council for Teachers of Mathematics (MCTM) are working on the creation of instructional materials. The Michigan Educator Resources on the Michigan Electronic Library and Net Trekker on Michigan Learnport are excellent resources that are available free of charge to Michigan educators. Visit www.mi.gov/highschool for links to these and other resources.

17. Q: Can a district simply say no to kids earning high school graduation credit for classes passed prior to high school? If a student successfully completes Algebra I in the 8th grade, can I just check off the Algebra I box on his list of requirements, but not give him or her an actual credit?

A: No. The new law REQUIRES high school graduation credit must be awarded for classes taken before high school which meet the following conditions:

- The class must cover the same content as the high school class, in other words, high school level material. School districts have one year following state approval of each Michigan Merit Curriculum Course/Credit Expectations to align courses and assessments. Therefore, during the 2006-2007 school year, districts may use their current high school curriculum to assign credit. By the 2007-2008 school year, all expectations and assessments should be aligned with the exception of social studies expectations which must be aligned one year following final approval.
- Proficiency must be assessed using the same assessment(s) (e.g. end-of-course exam or combination of assessments) used at the high school.
- The level of proficiency expected in order to "pass" (e.g. 80%) must be the same as at the high school.

18. Q: Our school district has traditionally awarded high school credit to students who successfully completed Algebra I in the 8th grade. Although we have been working this year to align Algebra I and other classes with the new high school content expectations, we have not completed that task. May we award high school credit to this year's 8th graders successfully completing Algebra I, even though our high school and middle school Algebra I programs are not yet fully aligned with the content expectations.

A: Yes, you may do so for this year only, 2006-07. The law requires that a high school have in placed all the opportunities necessary for a 9th grader entering in the fall of 2007 to earn the graduation requirements. This essentially has given schools the current 2006-2007 school year to align with the content expectations the programs/courses/classes that are available to freshmen next fall. You may, therefore, award high school credit for 8th grade Algebra this year based on the benchmarks and standards that your district has in place currently for Algebra I.

This would NOT apply to a district that, up to now, has not been awarding high school credit for Algebra I in 8th grade and now wishes to take advantage of doing so this year under the old benchmarks. In order for this permission to apply, the district must have had a history of awarding such credit.