

## Farmington Public Schools Math Pathways Frequently Asked Questions

### How do teachers determine the appropriate placement for students as they move to the next grade level?

Careful consideration is given to each student to ensure appropriate placement. This is determined by a body of evidence that includes, but is not limited to:

- student work,
- assessments such as benchmark assessments, unit tests, and
- SBA assessments,
- student work habits, grades, and effort,
- teacher recommendation, and
- parent input.

Teachers communicate placement recommendations during the 2nd and 3rd trimesters.

### How can my child change pathways?

Adolescence is a time of rapid, unpredictable and surprising change. This is true in all aspects of students' lives, including their mathematical development. Sometimes students who do not appear to have mathematical aptitude in elementary school can suddenly engage in the subject in middle and high school. Conversely, students who have no difficulty in earlier grades may experience challenges as they progress through increasingly abstract concepts. In addition, students' interests and attitudes change as they mature, and the math courses they elect to take may change as well.

The Farmington mathematics program strives to provide the flexibility to accommodate adolescent changes and challenges. Students, teachers, parents, and school counselors work together to determine the math course that will provide the optimal level of rigor for each student. *Some examples of pathway adjustments are:*

- Student takes Algebra 8 and, based on success and interest, is enrolled in Geometry Honors & Algebra 2 H in Grade 9.
- Student takes Algebra 8 and, based on lack of mastery, is moved to Math 8 mid-year.
- Student takes Algebra 8 and, based on lack of mastery, is enrolled in Algebra 1 in Grade 9.
- Student takes Precalculus CP or Precalculus H in Grade 11, and based on lack of mastery and interest, is enrolled in a math elective in Grade 12.
- Student takes Precalculus H in Grade 11, and based on success and interest, is enrolled in both AP Calculus BC and AP Statistics in Grade 12.

### Will any middle school mathematics courses appear on my child's high school transcript?

The grades students earn in Algebra 8 and Advanced Algebra 8 will appear on the high school transcript. Students will earn high school credit for these courses. However, these grades are not included in the calculation of a student's high school Grade Point Average (GPA). The curricula for these two courses go beyond the Common Core Math expectations for 8th graders. Colleges will be able to see that student completed advanced math curriculum in the

middle school along with the grade they earned in the course. Information about other middle school math courses will not appear on the high school transcript.

**What are the Farmington High School math requirements for graduation?**

In order to graduate from Farmington High School, all students must complete 9 credits in Science, Technology, Engineering, and Math (STEM). Students must earn a C- or better in 2 credits of math taken at Farmington High School. To fulfill this requirement students will complete the core sequence of Algebra 1, Geometry, and Algebra 2 A/B.

**What mathematical experiences are colleges expecting of high school graduates?**

Colleges often require four years of mathematical study for admission. The Irving A. Robbins and Farmington High School Recommended Pathways allow for a high degree of customization for juniors and seniors once the core curriculum is completed. Based on a student's emerging sense of post-high school study, decisions should be based on interest and aptitude in mathematics, as well as consideration of college entrance requirements. Your child's school counselor and math teacher will be very helpful in making these decisions. The following website offers a good synopsis of college math requirements, <http://collegeapps.about.com/od/theartofgettingaccepted/a/HighSchoolMath.htm>

**What is the highest level of knowledge required to be successful on the math portion of the SAT.**

The SAT tests content from Algebra 1, Geometry, and Algebra 2. The exam is administered to all students in the spring of their junior year during the school day. All students who follow the recommended pathways should have completed this core curriculum by the time they take the SAT exam.

**I want my child to take Calculus in Grade 11. Can this happen?  
Is this a good idea?**

The design of the mathematics program allows for many students to have the opportunity for an Advanced Placement experience in senior year (for more information about Advanced Placement, see the next question). They may choose among AP Calculus AB, AP Calculus BC, and AP Statistics. In order to enroll in these courses prior to senior year, a student would need to complete intensive coursework independently and meet standard on internal exams that assess Farmington High School math standards. Keep in mind, the AP Calculus BC and AP Physics C curriculums are designed for students who are taking the courses concurrently in their senior year, therefore, there is no advantage to taking AP Calculus BC in the junior year.

**Is taking Calculus in Grade 11 a good idea?**

Parents often worry that there are certain required courses, without which a student is precluded from competitive college admission. Early completion of Calculus is one example of such a course. From the college perspective, admissions officers are looking for students who have challenged themselves by taking a rigorous course sequence across their entire program

of study. Many content areas offer their AP courses beginning in junior year. Therefore, to balance the rigor, mathematics offers their AP experiences in senior year.

We've been advised that the completion of Calculus in the senior year exceeds the expectation for a rigorous math course sequence. The following website offers a good synopsis of college math requirements,

<http://collegeapps.about.com/od/theartofgettingaccepted/a/HighSchoolMath.htm>.

Most students who take AP math courses in their high school year will take calculus in their freshman year of college. Something to consider is the loss of content knowledge that can occur if a student has not seen calculus material since their junior year of high school.

**My child loves math, what are the most advanced math opportunities that Farmington High School offers?**

There are many opportunities for your child to engage in mathematical learning at Farmington High School. While every student should complete the core curriculum (Algebra 1, Geometry, Algebra 2 A/B) before graduation, there are ample additional courses for those students who have a particular interest in math or related subjects.

**Advanced Placement** courses offer students the opportunity to take rigorous college-level coursework while still enrolled in high school.

FHS offers four math-related Advanced Placement courses:

- AP Calculus AB
- AP Calculus BC
- AP Statistics
- AP Computer Science with Java

For more information about the Advanced Placement program:

<https://apstudent.collegeboard.org/apcourse>

**Project Lead The Way (PLTW)** is the leading provider of rigorous and innovative Science, Technology, Engineering, and Mathematics (STEM) programs used in middle and high schools across the U.S. These courses offer hands-on, engaging and authentic opportunities for students to develop critical thinking, creativity, innovation and real-world problem-solving skills.

FHS offers four courses through Project Lead the Way:

- Introduction to Engineering Design
- Principles of Engineering
- Digital Electronics
- Engineering Design and Development

For more information about the Project Lead the Way program: <http://www.pltw.org/>

**Farmington High School Capstone Program** allows students to pursue individualized projects in areas of their choice, including mathematics. The goal of the Capstone Program is to provide all students with an opportunity to:

- Design a project in an area of deep personal or academic interest.
- Manage their own time and select their own resources.
- Work with a teacher or advisor who can respond to but not direct their work.
- Make a meaningful connection with an expert in their field of study.
- Communicate their work to an audience beyond the classroom.
- Reflect upon their learning both academic and personal.
- Meet the district's standards as articulated in the Vision of the Graduate

**Farmington FIRST Robotics Team**, The 2nd Law Enforcers, has a long history of enthusiastic participation at FHS. "The varsity Sport for the Mind," FIRST Robotics Competition combines the excitement of sport with the rigors of science and technology. Under strict rules, limited

resources, and time limits, teams of 25 students or more are challenged to raise funds, design a team "brand," hone teamwork skills, and build and program robots to perform prescribed tasks against a field of competitors. It's as close to "real-world engineering" as a student can get. Started in 1997, the FHS First Robotics team is a strong partnership of Farmington High School students, engineering professionals (from sponsors UTC Otis Elevator, ebm-pabst Inc., UTC Sikorsky, and Parker Hannifin), teachers, parents, adult mentors, and alumni mentors.

For more information about the FHS FIRST Robotics Team (the Enforcers):

<http://farmingtonrobotics.org>