

Science Course Registration Information for 8th Grade Arrowhead Area Students

1. Incoming freshman have 2 options for science.
 - A. **Science 9:** This is what most freshmen will take. It is the foundational course for our science program and serves students with a wide variety of interests and abilities.
 - B. **Science 9 / Biology Honors Block:** This is an everyday, 2-period block (84 minutes), and students who complete it will get credit for both classes in the same year. It is intended for advanced, science-oriented students. It has prerequisites / requirements:

Math: Concurrent enrollment in Advanced Algebra is a good indicator for success. Students in Geometry with a strong interest in science and great academic skills may also have success.

ACT minimum: 22 Science, 22 Math, 22 Reading.

FAQ

Do I need to take the Honors Block to be on track for advanced science courses in grades 11-12?

Not necessarily. Many students "double up" on science during their sophomore year, and many will continue to do that. However, doubling up in grade 9 likely will allow students to take one more science class later.

I have high test scores. Should I enroll in the Science 9 / Biology Honors Block?

This depends. The teachers of the honors block will assume that students are interested in science and want to be in a challenging environment. These students should be genuinely interested in open-ended investigations and an abstract discussion of science concepts. They should also be able to stay focused and engaged in the everyday block setting.

2. Looking ahead, the courses that are taken in sophomore year depend on what the students completed during their freshman year:

Freshmen who take Science 9 will enroll in Biology of Honors Biology during their sophomore year. Some of these students might also take a chemistry or physics class during their sophomore year.

Freshman who take the Science 9 / Biology Honors Block will NOT take biology during their sophomore year. These students will take a chemistry and/or physics class during their sophomore year.

3. Freshman will have the opportunity to take a physics or chemistry course during their sophomore year.

Physics and Chemistry are both year-long, college preparatory science courses. Sophomores meeting the math prerequisites – and who have an interest in science – can take these courses.

Our advanced introductory physics course is AP Physics 1, and some advanced sophomores enroll in and have success in this course. It is an introductory physics course, but it will be fast paced and prepare students for the AP Physics 1 exam. It is a 40-minute course available to students in grades 10-12.

Our advanced introductory chemistry course is Honors Chemistry, and many advanced sophomores enroll in and have success in this course. It is fast paced and prepares students for AP Chemistry in subsequent years. It is a 40-minute course available to students in grades 10-12.

FAQ

Do I have to take the Science 9 / Biology Honors Block in order to take AP Physics 1 or Honors Chemistry during my sophomore year?

No. Students can take AP Physics 1 or Honors Chemistry along with Biology or Honors Biology during grade 10.

Will the Science 9 / Biology Honors block better prepare me for AP Physics 1?

Probably. The honors block is more concentrated on physics concepts than the general Science 9 curriculum. In addition, it is an advanced course more in line with AP science expectations. However, strong science students who performed well in Science 9 should still consider AP Physics 1.

Are there math considerations for taking AP Physics 1?

Yes. Students in AP Physics 1 must be concurrently enrolled in Functions or beyond. This means that students need to complete one of the advanced algebra courses (Advanced Algebra, Geometry / Advanced Algebra Block, or Advanced Algebra / Trig) during their freshman year to enroll as a 10th grader. Students who take only Geometry as freshman cannot enroll in AP Physics 1 as sophomores.

Are there math considerations for taking Honors Chemistry?

Yes. Students in Honors Chemistry must be concurrently enrolled in Advanced Algebra or beyond. Any student enrolled in Geometry or beyond as a freshman will be able to enroll in Honors Chemistry as a sophomore.

4. Freshman will have the opportunity to enroll in the Engineering & Mechanics course during their sophomore year.

AHS introduced the Engineering Experience in 2014. This offers students with an interest in engineering and good ability in math and science the opportunity to take Science and Technology & Engineering courses in a team-taught, project-based learning environment. The first course in the Engineering Experience, Engineering & Mechanics, pairs Physics with Principles of Engineering (POE) in a two-period, everyday block. While it is not available to grade 9 students, some might be interested in trying it during their sophomore or junior year.

FAQ

Do I have to take the Science 9 / Biology Honors Block in order to enroll in Engineering & Mechanics?

No. Students can enroll after the completion of Science 9.

Are there math considerations for taking Engineering & Mechanics?

Yes. Students in Engineering & Mechanics must be concurrently enrolled in Functions, and could also be enrolled in Advanced Algebra with the consent of the Science Department Chair. This means that students interested in enrolling in Engineering & Mechanics as a 10th grader should ensure that their 9th grade math course(s) have been selected with that requirement in mind. For example, to be enrolled in Functions during 10th grade, 9th grade students should complete one of the advanced algebra courses (Advanced Algebra, Geometry / Advanced Algebra Block, or Advanced Algebra / Trig) during their freshman year.

Do I have to take other courses within the Engineering Experience if I take Engineering & Mechanics?

No. There is no requirement to continue within the Engineering Experience if students take the first course.

Do I have to take Engineering & Mechanics in order to take additional Engineering Experience courses?

No. Students who have completed Physics and POE can take any of the other courses within the Engineering Experience.

Do I have to take Introduction to Engineering and Manufacturing (IEM) in order to take Engineering & Mechanics?

No. Students with an interest in engineering should strongly consider completing IEM during their freshman year, but it is not required to enroll in Engineering & Mechanics.