

Pathways for Students Taking Science at Montgomery Blair High School

First Year Science

ESOL Physical Science

ESOL level 2, 3, 4
9th grade math Algebra 1

Physical Science

Average Math & Science skills
9th grade math Algebra I

Honors Biology

High Science and high English skills
9th grade math Honors Geometry

Honors Physics

High math skills and high science skills
9th grade math MUST be Algebra II or pre-calculus

Second Year Science

Students who pass ESOL Physical Science with A or B can go to **Biology** or **ESOL Biology**.

All 10th grade ESOL MUST GO to ESOL Biology!

Students who pass with a C or D should go to *****Environmental Chemistry**

Students who earn an A in Physical Science can go to **Honors Biology**.

All other students who **pass** Physical Science with a B, C or D should go into **Biology**

Students who fail physical science should repeat physical science in summer school or the next school year!

Students who earn an A or B should go to Honors Physics or Honors Chemistry
Students who pass Honors Biology with a C or D should go to on grade level Physics or Chemistry (**students MUST be in Algebra 2 to take physics or chemistry**)

Students who are currently taking pre-calculus or who have passed should take physics. Students who have completed or are taking Algebra 2 should take chemistry

Students who pass Honors Physics with an A or B should go to Honors Chemistry **then go directly into AP Biology their 11th grade year**

Students who pass Honors Physics with a C or D should go to Honors Biology

Third Year AND Fourth Year

At this point students should have earned a **Physical Science credit** and a **life science credit** so they may elect a science.

If students are going to study science related subjects in college they should go on to choose a HIGH INTEREST **ELECTIVE**. If students are trying to earn their third credit of science then they should choose one of the LOW INTEREST **ELECTIVE** classes.

High Interest Science Electives:

- Chemistry
- Physics
- **AP Biology**
- AP Chemistry
- AP Physics
- **APES - AP Environmental Science**
- **Forensics**
- **Anatomy & Physiology**
- Honors Geoscience Exploration
- **Marine Biology**
- **Biochemistry**
- **Genetics**
- **Cell Physiology**
- **Organic Chemistry**
- ****Research Methods**

Low Interest Science Electives:

- Horticulture
- *****Environmental Chemistry**

NOTE: See prerequisites for each elective

SOME IMPORTANT POINTS:

-Failing Students - Any student who receives an "E" or fails a semester course should repeat the same course before moving forward in the pathways!

-Grades are not the only data that determine a student's pathway through science.

A teacher recommendation should supersede the science pathways.

**Research Methods is an academy course

Students must earn one **Biology credit (BC)**; one **physical science credit (PC)**; and one **elective science (SC)**

*** Environmental Chemistry IS NOT a physical Science credit it is an Elective Science (ES)

9th Grade Course Descriptions

Physical Science

This course emphasizes the development of observation, experimentation, and analytic skills applicable to succeeding in laboratory courses in high school science. Matter and Energy A includes scientific skills and processes, mechanics (forces & motion), energy, electricity, and magnetism. Matter and Energy B includes properties of matter, heat, and atomic and nuclear structure. It is strongly suggested that students take Algebra I concurrently with this course.

Biology

This course emphasizes the study of living things through laboratory experiences. Topics include ecology, chemistry of life, cells in living things, cell energy, nucleic acids and protein synthesis, energy, inheritance, applied genetics, evolution, and systems and living things. Ecology and evolution are unifying themes throughout the course. Attention is given to social issues and career opportunities. Dissections may occur. It is strongly recommended that students receive a C or above in Middle School science and English and will take Geometry concurrently in order to enroll in this course as a 9th grader. Students should also have **good** reading and writing skills.

Honors Biology

This course emphasizes the study of living things through laboratory experiences. Topics include ecology, chemistry of life, cells in living things, cell energy, nucleic acids and protein synthesis, energy, inheritance, applied genetics, evolution, and systems and living things. Ecology and evolution are unifying themes throughout the course. Attention is given to social issues and career opportunities. Dissections may occur. It is strongly recommended that students receive an A or B in Middle School science and English and will take Honors Geometry concurrently in order to enroll in this course as a 9th grader. Students should also have **strong** reading and writing skills.

Honors Physics

Physics is for students with special interest in and high motivation for an in-depth study of the physical sciences. The content matter and workload is mathematically based, so students should have a strong math background with special emphasis on geometry, algebra and trigonometry. This course has the expectations of a college preparatory course and students will be well prepared for the SAT II subject test in physics. It is required that students complete Geometry prior to taking this course, receiving an A in both Geometry and in Middle School science and will thus take Algebra II concurrently with this course as a 9th grader. Strong math and science skills are necessary to be successful in this course!

Every student who graduates from Montgomery Blair HS will be STEM proficient:

- An **Effective Communicator**, able to read, write, converse and listen for a variety of purposes
- An **Information Manager**, able to locate, access, organize, evaluate and apply information in a complex and technological world
- A **Problem Solver**, able to apply a variety of thinking, creative and computing skills to produce solutions for practical and theoretical problems
- A **Productive Member of Society**, able to demonstrate healthy, responsible behavior and to work collaboratively and respectfully in a linguistically and culturally diverse community
- A **Lifelong Learner**, able to set educational and career goals, to develop a realistic strategy to achieve those goals and to apply content knowledge and critical thinking skills to adapt to a rapidly changing environment