

THS SCIENCE DEPT. COURSE SELECTION GUIDE



GRADUATION REQUIREMENTS

- Standard Diploma
 - 3 lab science courses in 2 different disciplines (Earth Science, Biology/Environmental Science, Chemistry, Physics)
 - 1 passed SOL test (Earth Science, Biology, or Chemistry)
- Advanced Diploma
 - 4 lab science courses in 3 different disciplines (Earth Science, Biology/Environmental Science, Chemistry, Physics)
 - 2+ passed SOL tests (Earth Science, Biology, or Chemistry)

SCIENCE DEPARTMENT COURSES OFFERED AT RECOMMENDED GRADE LEVEL

- Academic Earth Science (grade 9)
- Research Earth Science (grade 9)
- Academic Biology (grade 10)
- Research Biology (grades 9-10)
- Academic Chemistry (grades 10-12)
- Research Chemistry (grades 10-12)
- Environmental Science (grades 11-12)
- AP Environmental Science (grades 11-12)
- Conceptual Physics (grades 11-12)
- Academic Physics (grades 11-12)
- AP Biology DE (grades 10-12)
- AP Chemistry DE (grades 11-12)
- AP Physics C: Mechanics (grade 12)
- Geospatial Science DE (grades 11-12)
- Independent Science Research DE (grades 11-12)

YOU SHOULD TAKE ACADEMIC EARTH SCIENCE IF...

- You do not wish to take an honors-level science course.
- You do not have an interest in pursuing a career in science.
- You will be enrolled in Algebra I as a freshman.

YOU SHOULD TAKE RESEARCH EARTH SCIENCE IF...

- You are interested in data-driven research questions.
- You will be enrolled in Geometry or higher as a freshman.
- You have had grades of A/B in science classes.
- You have had grades of A/B in math classes.

YOU SHOULD TAKE ACADEMIC BIOLOGY IF ...

- You do not wish to take an honors-level science course.
- You do not have an interest in pursuing a career in life sciences.

YOU SHOULD TAKE RESEARCH BIOLOGY IF...

- As a 9th grader:
 - You will be enrolled in Algebra 2 or Algebra 2/Trig as a freshman.
 - You have a basic understanding of descriptive and inferential statistics.
 - You have had grades of A in science and math.
 - You have a strong desire to do research reports and analysis.
 - You plan to complete a summer assignment.
- As a 10th grader:
 - You have a strong interest in science.
 - You enjoyed completing the research project in Earth Science.
 - You plan to complete a summer assignment if you are enrolled in Academic Earth Science this year.

YOU SHOULD TAKE ACADEMIC CHEMISTRY IF...

- You will be enrolled in Algebra 2 or Algebra 2/Trig or higher the year you are taking chemistry. (This course is math-intensive.)
- You passed the SOL test in Algebra I.
- You do not want to complete a research project.

YOU SHOULD TAKE RESEARCH CHEMISTRY IF...

- You will be enrolled in Algebra 2 or Algebra 2/Trig or higher the year you are taking chemistry. (This course is math-intensive.)
- You have a strong interest in science research and have taken Research Earth Science or Biology.
- This course is a rigorous, fast-paced course.

YOU SHOULD TAKE ENVIRONMENTAL SCIENCE IF...

- You have passed 2 science SOL tests (usually Earth Science and Biology).
- You want to have a positive impact on the environment and like to go outside!
- You are creative and can be successful in a project-based class working independently.

YOU SHOULD TAKE AP ENVIRONMENTAL SCIENCE (APES) IF...

- You have passed Earth Science and Biology and the SOL tests.
- You passed Algebra 2 and the SOL.
- This is the equivalent of a one-semester introductory college course in environmental science.

YOU SHOULD TAKE CONCEPTUAL PHYSICS IF...

- You have passed the Algebra I SOL and class.
- You are not enrolled in advanced math courses.

YOU SHOULD TAKE ACADEMIC PHYSICS IF...

- You have passed both Chemistry and Algebra 2 with a grade of B or higher in both. (This course is very math intensive and lab work involves graphical analysis.)
- You plan on majoring in a science or engineering field in college.

YOU SHOULD TAKE AP BIOLOGY DUAL ENROLLMENT IF...

- You have taken Chemistry or are taking Chemistry along with this course.
- You are prepared to commit to a rigorous, college-level course.
- You passed Research Biology with a B or higher or passed Academic Biology with recommendation from your biology teacher
- You want to earn 8 college credits from Richard Bland College.

YOU SHOULD TAKE AP CHEMISTRY DUAL ENROLLMENT IF...

- You passed Research Chemistry with a B or higher.
- You have strong mathematical skills and have passed Algebra 2.
- You are prepared to commit to a rigorous, college-level course and willing to put in 2 hours work outside of class for every class period.
- You want to earn 8 college credits from NOVA.

YOU SHOULD TAKE AP PHYSICS C: MECHANICS IF...

- You passed Academic Physics with a B or higher.
- You have taken AP Calculus AB or BC or will be enrolled in it the year you take AP Physics.
- You are prepared to commit to a rigorous, college-level course.
- You plan to take the College Board's AP test in May.

YOU SHOULD TAKE GEOSPATIAL SCIENCE DUAL ENROLLMENT IF...

- You are interested in learning how to present spatial or geographic data.
- You are prepared to commit to a rigorous, college-level course.
- You want to complete an in-depth research project.
- You want to earn 6 college credits from James Madison University.
- You may also take Geospatial Science 2 DE to earn 6 more credits senior year if you take this course junior year.
- NOTE: This course does not count as a lab science

YOU SHOULD TAKE INDEPENDENT SCIENCE RESEARCH DUAL ENROLLMENT IF...

- You are ready to commit to participating in the LCPS Regional Science & Engineering Fair.
- You have completed 2 lab science courses in different disciplines.
- You want to complete an in-depth research project.
- You are ready to commit to a rigorous, college-level course.
- You want to earn 3 college credits from George Mason University.