



Lightridge Science Course Choices 2024



What I am currently taking What can I take next? (Click 🔗 for link to more information)	8 th Grade Science	Earth Science	Research Earth Sci	Biology	Research Biology	Chemistry	Research Chemistry	Environmental Sci	Conceptual Physics	Honors/DE Physics	AP Environmental Sci	AP Biology	AP Chemistry	AP Physics	Geospatial Sci (GIS)	Independent Science Research
Earth Science Study of the non-living world – Astronomy, Meteorology, Oceanography, Geology. No prerequisites. 🔗	✓			✓		✓		✓	✓							
*Research Earth Science More content rigor and detail than Earth Science, with additional research assignments/projects required. 🔗	✓			✓	✓	✓	✓	✓	✓	✓						
Biology Study of the living world – microbiology, biochemistry, genetics, ecology, taxonomy. No prerequisites. 🔗	✓	✓	✓													
*Research Biology More content rigor and detail than Biology, with additional research assignments/projects required. 🔗	✓	✓	✓													
Chemistry (<i>Algebra II concurrent or completed</i>) Study of properties and behavior of matter. Path for Advanced Diploma. B or higher in Biology and pass SOL. 🔗		✓	✓	✓	✓			✓	✓	✓	✓					
*Research Chemistry (<i>Algebra II completed</i>) More content rigor and detail than Chemistry, with additional research assignments/projects required. 🔗			✓		✓					✓	✓			✓		
Environmental Science Study of the natural world and human interactions with it. Science path to either diploma, no emphasis on math. 🔗				✓		✓	✓		✓	✓						
Conceptual Physics Science path to either diploma, some very basic math. Competitive colleges do not consider this a lab science. 🔗		✓		✓		✓	✓	✓								
*Honors Physics (<i>B or higher in Algebra II</i>) Study of matter and forces. Honors level rigor with heavy emphasis on math. Students <i>must</i> have strong math skills. 🔗			✓		☑	✓	✓	✓			✓	✓	✓		✓	✓
***DE Physics (<i>B or higher in Algebra II/Trig</i>) Students must be motivated to work independently in this college course. Heavy emphasis on high-level algebra & trig. 🔗			✓		☑		✓				✓	✓	✓		✓	✓
**AP Environmental Science College-level course, some basic algebra, can take concurrently with another science course. Prerequisite: B or better in 2+ HS science courses 🔗					☑	✓	✓	✓		✓		✓	✓	✓	✓	✓
**AP Biology ① Challenging college-level course for students with B+ or higher in Biology, affinity for Biology, and teacher recommendation. 🔗					☑	✓	✓	✓		✓	✓		✓	✓	✓	✓
**AP Chemistry ① Very challenging college-level course for students with B+ or higher in Chemistry, love of Chemistry, AND teacher recommendation. Should take immediately after chemistry. 🔗						✓	✓									
**AP Physics ① (<i>Calculus completed</i>) Very challenging course for 12 th grade students with a B or higher in Honors/DE Physics, very strong math skills, AND teacher recommendation. 🔗										✓						
***Independent Science Research I or II 11 th /12 th grade courses with student-led experiments to present at regional Science Fair and GMU. Prior success in Research-level science courses strongly recommended. 🔗							✓			✓	✓	✓	✓	✓	✓	✓
***Geospatial Science I or II 11 th /12 th grade courses (1 or 2 year option) with focus on using GIS software to create maps of data. Present work at JMU. 🔗						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Honors courses receive an additional 0.5 weight in GPA

**AP Level courses receive an additional 1.0 weight in GPA, *may* receive college credit depending on exam score, college, and chosen major

***Dual Enrollment Courses receive an additional 1.0 GPA weight *and* college credit

① Note that this is a rigorous 2nd-year course. If a student enrolls in this course and finds it is too difficult, there is *no* lower-level course option to switch down to.

☑ To enroll directly into these courses directly from Biology, student *must* have an A or higher in Research Biology, be concurrently enrolled in Chemistry, AND have recommendation from Biology teacher

SCIENCE DIPLOMA REQUIREMENTS: Advanced diploma = 4 years science, 3 different disciplines, 1 SOL exam. Standard diploma = 3 years, 2 different disciplines, 1 SOL exam.

(Note that the environmental science courses can count as either an *Earth* or *Bio* discipline, Geospatial is an *Earth* discipline, and ISR counts as a year but **NOT** a discipline)