



OVERVIEW

In Arizona, while students are required to take three credits of high school science to meet graduation requirements, there is no mandatory course sequence across the state. Because of this, the high school standards are written at two levels: essential and plus.

Essential Standards: All high school essential standards should be learned by every high school student regardless of the three-credit course sequence they take. The full set of 28 high school essential standards should be taught over that three-year period. Essential High School Science Standards are designed to provide opportunities for students to develop understanding of all core ideas across three credits of high school science.

The pathways on the following page indicate which essential standard each course covers in an effort to help students and parents select the best path for their student.

STATE AND DISTRICT SUPPORT LINKS

- [Arizona Department of Education](#)
- [Arizona State Academic Standards](#)
- [Peoria Unified School District](#)
- [Family Resources](#)
- [Curriculum & Instruction](#)
- [School Year Calendar](#)
- [ParentVue](#)
- [Course Description Guide](#)

High School Science

The fundamental goal of science education is to help students determine how the world works and make sense of phenomena in the natural world. Phenomena are observable events that can be explained or explored.

Sense-making in science is a conceptual process in which the learner actively engages with phenomena in the natural world to construct logical and coherent explanations that incorporate their current understanding.

To develop a scientific understanding, students must be able to ask questions, gather information, reason about that information and connect it to the scientific principles, theories, or models and effectively communicate their understanding and reasoning.

Our curriculum is aligned to the Arizona State Standards and our district's course guide, as determined by the Arizona State Board of Education (R7-2-302) and the Governing Board.



Course Pathways

Assuming a student takes Biology or Biology Honors as a freshman, the student must take two more sciences prior to the end of their junior year to fulfill the State's expectations and graduation requirements.

Biology → Chemistry → Physics | (covers all 28 standards except 15 and 17)

Biology → Chemistry → Earth Space | (covers all 28 standards except 7)

Biology → Earth Space → Physics | (covers all 28 standards except 2, 3, 4)

Biology → Earth Space → Conceptual Physics | (covers all 28 standards except 2,3,4)

Biology → Environmental → Physics | (covers all 28 standards except 2,3,15, 17)

It is possible that students start with Earth Space or Conceptional Physics, but all recommended pathways include Biology by junior year.

BIOLOGY | MANDATORY

Biology is an inquiry-based course that studies how life is organized into systems and cycles. Topics include life processes, cell genetics, natural selection, and ecology. This course satisfies a science lab requirement for state universities.

Core Course Offerings

		HONORS CREDIT OFFERED	DUAL ENROLLMENT OFFERED	ONLINE COURSE OFFERED	SATISFIES LAB REQUIREMENT
EARTH SPACE SCIENCE	Introduction to Earth's interconnected systems and how they change due to natural processes. Topics include the Big Bang Theory, galaxies, stars, solar system interactions, geologic history of Earth, and Earth materials and systems.	✓		✓	✓
PHYSICS	Investigate the physical properties of matter and the relationship to energy. Topics include force, motion, energy, momentum, waves, and optics.	✓	✓	✓	✓
ENVIRONMENTAL SCIENCE	Study connections between human activities and environmental impact with a focus on sustainable solutions through the study of societies, economies, and the environment. Topics include pollution, waste management, population growth, agriculture, energy usage, biodiversity, climate change, natural resources, and other environmental issues.			✓	
CHEMISTRY LAB SCIENCE	Investigate structure and properties of matter, and the changes matter can undergo. Topics include atomic structure, chemical reactions, nomenclature, bonding, and properties of matter.	✓	✓	✓	✓
CONCEPTUAL PHYSICS	Examine the interactions between objects. Topics for this course include motion, energy, waves, and electricity.				

Elective Course Offerings

		HONOR CREDIT OFFERED	DUAL ENROLLMENT OFFERED	ONLINE COURSE OFFERED
BIOLOGICAL APPLICATIONS AND TECHNOLOGY	Current biotechnology and how it applies to medicine, bioremediation and agriculture using an inquiry process. Topics include current biotechnological practices and how these relate to biology.	✓		
HUMAN PHYSIOLOGY	Uses Maricopa County Community College Standards. Study the structure and function of the human body and its many systems, i.e., skeletal, nervous, reproductive, circulatory, etc. Dissection of biological specimens is a mandatory component.		✓	
AP BIOLOGY	Explore topics such as evolution, cellular processes, energy and communication, genetics, information transfer, ecology, and interactions.	✓	✓	
AP CHEMISTRY	Explore the four Big Ideas: scale, proportion, and quantity; structure and properties of substances; transformations; and energy.	✓	✓	
AP PHYSICS I	Algebra-based, introductory college-level physics course. Explore concepts like systems, fields, force interactions, change, conservation, and waves.	✓	✓	
AP PHYSICS II	Explore topics like fluid statics and dynamics; thermodynamics with kinetic theory; PV diagrams and probability; electrostatics; electrical circuits with capacitors; magnetic fields; electromagnetism; physical and geometric optics; and quantum, atomic, and nuclear physics.	✓		
AP ENVIRONMENTAL SCIENCE	Identify and analyze natural and human-made environmental problems, evaluate the relative risks associated with these problems, and examine alternative solutions for resolving or preventing them.	✓		

