ARKANSAS
K-12 SCIENCE STANDARDS

EDUCATION FOR A NEW GENERATION

Proposed High School Science Courses

Community Feedback Survey in September 2016

Consideration for Adoption by AR State Board of Education in Fall 2016

Pending Adoption, Standards are to be Implemented by August 2018

Proposed high school science courses

ALL students will earn the 3 units of natural science credit through the following high school courses:

Physical Science	Science graduation course that focuses on conceptual understanding of foundational core ideas, science and engineering practices, and crosscutting concepts, and is composed of physical science, Earth and space science, life science, and engineering design standards.
Biology	Science graduation course that focuses on conceptual understanding of foundational life and Earth science core ideas, science and engineering practices, and crosscutting concepts, and is an integration of life science, Earth and space science, and engineering design standards.
Principles of Chemistry and Physics	Science graduation course that focuses on conceptual understanding of the foundational chemistry and physics core ideas, science and engineering practices, and crosscutting concepts of, and is composed of physical science, Earth and space science, and engineering design standards.

Proposed High School Science Career-focus Courses

Students are required to earn 6 career-focus units of credit for graduation. The science career-focus courses offer a diverse selection for students to choose from based on their path to graduation.

Astronomy	A science career-focus course that continues to develop conceptual understanding of the core ideas, science and engineering practices, and crosscutting concepts in the physical and Earth and space sciences. The Astronomy standards engage students in investigating Earth and space science and physical science phenomena in more depth.
Chemistry	A science career-focus course that continues to develop conceptual understanding of the key concepts of chemistry. The concepts are building upon students' understanding of the core ideas, science and engineering practices, and crosscutting concepts in the Principles of Chemistry and Physics course. This course is designed to encourage a deeper consideration of physical laws and the relationships between physical concepts. Students will build an understanding of chemistry as it applies to the world around them, and be prepared to enter technical fields or continue their chemistry education at college level. Candidates for this course are students who have completed Principles of Chemistry and Physics and are seeking a deeper understanding of chemistry concepts.
Earth Science	A science career-focus course that continues to develop conceptual understanding of the interactions in Earth science, physical science, and life science systems by investigating Arkansas-specific phenomena. Students are building understanding of core ideas, science and engineering practices, and crosscutting concepts from previous science courses. The standards are built around the Earth science-systems approach which strongly reflects the many societally relevant aspects of Earth sciences (resources, hazards, environmental impacts) with an emphasis on using engineering and technology concepts to design solutions to challenges facing human society.

Environmental Science	A science career-focus course that continues to develop conceptual understanding of the interactions in Earth science, physical science, and life science systems. The standards for environmental science engage students in the core ideas, scientific and engineering practices, and crosscutting concepts to support the development of knowledge that can be applied to understanding, explaining, and improving human interactions with Earth systems and resources. There are strong connections to mathematical practices of analyzing and interpreting data with creating mathematical and computational models.
Human Anatomy and Physiology	A science career-focus course that continues to develop conceptual understanding of the core ideas, science and engineering practices, and crosscutting concepts in Biology. The standards engage students in making sense of the interactions among the eleven human body systems. These include the: ● Integumentary System ● Skeletal System ● Muscular System ● Respiratory System ● Circulatory System ● Digestive System ● Nervous System ● Endocrine System ● Lymphatic System ● Urinary System ● Reproductive Systems
Physics	A science career-focus course that continues to develop conceptual understanding of key concepts of physics. The concepts are building upon students' understanding of the core ideas, science and engineering practices, and crosscutting concepts in the Principles of Chemistry and Physics course. The standards engage students in the investigation of physical laws and application of the principles of physics to address real world problems. Students should develop an understanding of physics as it applies to the world around them and be prepared to enter technical fields or continue their physics education at college level. Candidates for this course are students who have completed Principles of Chemistry and Physics and are seeking a deeper understanding of physics concepts.

Proposed Arkansas Accelerated Science Course Pathway

Arkansas Accelerated Science Course Pathway allows districts and schools an option to maximize opportunities for high-performing students to meet the Arkansas K-12 Science Standards as well as be prepared to pursue advanced level science courses earlier in middle and high school and at a more rapid pace. These courses should only be taught by PreAP-trained science teachers. This accelerated science course pathway is not intended for all students, but for students who have demonstrated advanced academic proficiency in the prerequisite courses and who intend to pursue the follow-up courses as described below.
Science is a quantitative discipline, so it is important for educators to ensure that students' science learning coheres well with their understanding of mathematics. To achieve this alignment, the Arkansas K-12 Science Committee made every effort to ensure that the mathematics standards do not outpace or misalign to the accelerated pathway courses. If this pathway is implemented, it is recommended that a unit PreAP Algebra 1 be earned concurrently with a unit of PreAP Physical Science, which requires a Grades 5-8 course approval for both the PreAP Algebra 1 and PreAP Physical Science course from the Arkansas Department of Education.

Arkansas Accelerated Science Course Pathway offers the following OPTIONAL accelerated courses

PreAP 6th Grade Science	Course is an integration of 6th, 7th, and 8th Grade life science, Earth and space science, physical science, and engineering design standards.
PreAP 7th Grade Science	Course is an integration of 6th, 7th, and 8th Grade life science, Earth and space science, physical science, and engineering design standards.
PreAP Physical Science	Course is an integration of the balance of 8th Grade physical science standards not mapped in the PreAP 6th and 7th Grade courses and the high school Physical Science course standards. *(5-8 course approval for physical science required)
PreAP Biology	Course is an integration of the Biology course standards with additional life science standards written by the Arkansas K-12 Science Committee.
PreAP Principles of Chemistry and Physics	Course is an integration of the Principles of Chemistry and Physics course standards with additional chemistry standards written by the Arkansas K-12 Science Committee.

* A course approval for Grades 5-8 is necessary for a high school course to be taught at the middle school level. Teachers must hold the appropriate 7-12 licensure. Contact the ADE Curriculum and Instruction unit for more details.