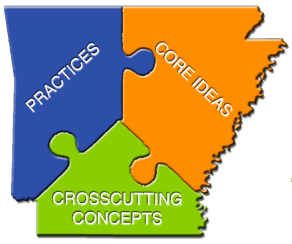


ARKANSAS
K-12 SCIENCE STANDARDS

EDUCATION FOR A NEW GENERATION

Fundamental Science Content
1st Grade

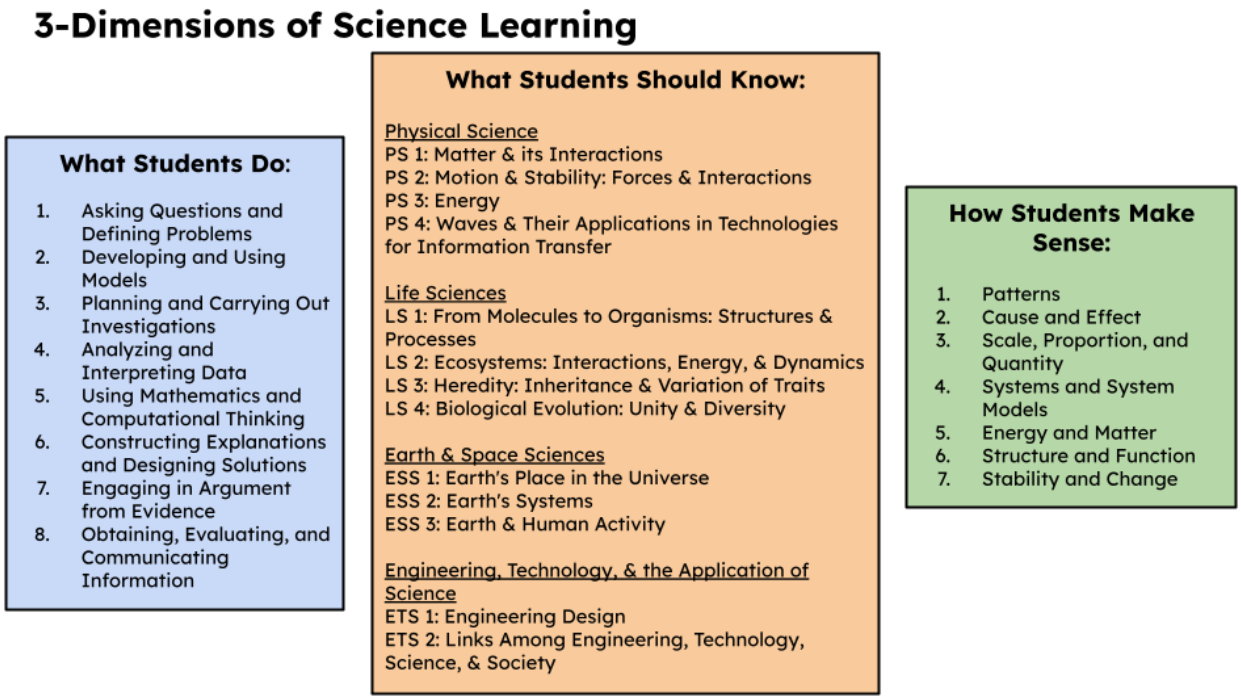
2023

The Arkansas K-12 Science Standards are available here. The standards are three-dimensional, consisting of a Science and Engineering Practice (SEP), a Disciplinary Core Idea (DCI), and a Cross Cutting Concept (CCC). By the end of the grade level, students should be able to demonstrate the full scope of the standard. Example:

The focus of this document is specifically on the science core ideas in 1st grade. In Arkansas K-12 Science Standards, science content is found in the DCI portion of each standard. Three-dimensional learning and assessment best prepares students for success so that students have the opportunity to demonstrate both what they know *and* can do in science. Refer to the full standards document to find the corresponding science and engineering practice and cross cutting concept for each standard. The core ideas are organized into the following domains of science:

- Physical Science
- Life Science
- Earth & Space Science
- Engineering Technology & Applications of Science

Each domain contains core ideas organized into component ideas. By the end of 1st grade, students are expected to know the bulleted information under each component idea. Standards that address the bulleted information are included in parentheses and those with an asterisk include an engineering component.



Physical Science

*Asterisks indicate best opportunities to integrate ETS performance expectations into content.

Waves
Wave Properties
• Sound can make matter vibrate, and vibrating matter can make sound. (1-PS4-1)
Electromagnetic Radiation
• Objects can be seen if light is available to illuminate them or if they give off their own light. (1-PS4-2)
• Materials allow light to pass through them (transparent), allow only some light through (translucent), or block all the light (opaque) and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (1-PS4-3)
• Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.) (1-PS4-3)
Information Technologies and Instrumentation
• People also use a variety of devices to communicate (send and receive information) over long distances. (1-PS4-4*)

Life Science

*Asterisks indicate best opportunities to integrate ETS performance expectations into content.

Molecules to Organisms
Structure and Function
• All organisms have external parts. Different animals use their body parts to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1*)
Growth and Development of Organisms
• Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)
Information Processing
• Animals have body parts that capture and convey the information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1*)
Heredity
Inheritance of Traits
• Young animals and young plants are very much, but not exactly, like their parents. (1-LS3-1)

• Young animals are very much, but not exactly, like their parents. Plants also are very much, but not exactly, like their parents. (1-LS3-1)
Variation of Traits
• Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)

Earth & Space Science

Earth's Place in the Universe
The Universe and Its Stars
• Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. (1-ESS1-1)
Earth and the Solar System
• Seasonal patterns of sunrise and sunset can be observed, described, and predicted. (1-ESS1-2)

Engineering, Technology, and Applications of Science

Engineering Design
Defining and Delimiting an Engineering Problem
• A situation that people want to change or create can be approached as a problem to be solved through engineering. (1-ETS1-1)
• Asking questions, making observations, and gathering information are helpful in thinking about problems. (1-ETS1-1)
• Before beginning to design a solution, it is important to clearly understand the problem. (1-ETS1-1)
Developing Possible Solutions
• Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (1-ETS1-2)
Optimizing the Design Solution
• Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (1-ETS1-3)