

ARKANSAS

K-12 SCIENCE STANDARDS

EDUCATION FOR A NEW GENERATION

Fundamental Science Content 2nd 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:

2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.

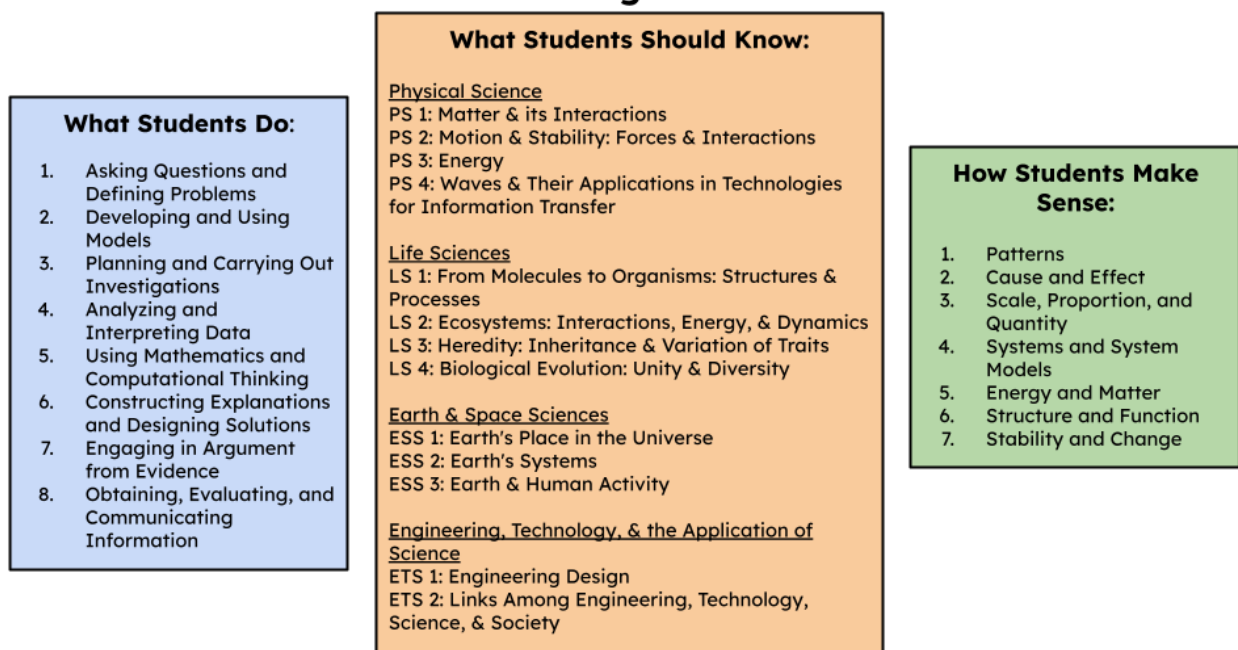


The focus of this document is specifically on the science core ideas in 2nd grade. In Arkansas K-12 Science Standards, science content is found in the DCI portion of each standard. Three-dimensional learning and assessment best prepares students for success so that students have the opportunity to demonstrate 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 2nd 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.

3-Dimensions of Science Learning



Physical Science

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

Matter

Structure and Properties of Matter

- Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. ([2-PS1-1](#))
- Different properties are suited to different purposes. ([2-PS1-2*](#), [2-PS1-3](#))
- A great variety of objects can be built up from a small set of pieces. ([2-PS1-3](#))

Chemical Reactions

- Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible (i.e., freezing, melting), and sometimes they are not (i.e., baking). ([2-PS1-4](#))

Life Science

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Ecosystems

Interdependent Relationships

- Plants depend on water and light to grow. ([2-LS2-1](#))
- Plants depend on animals for pollination or to move their seeds around. ([2-LS2-2*](#))

Biological Evolution

Biodiversity and Humans

- There are many different kinds of living things in any one area, and they exist in different places on land and in water. ([2-LS4-1](#))

Earth & Space Science

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Earth's Place in the Universe

The History of Planet Earth

- Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. ([2-ESS1-1](#))

Earth's Systems

Earth's Materials

- Wind and water can change the shape of the land. ([2-ESS2-1*](#))

Plate Tectonics

- Maps show where things are located. One can map the shapes and kinds of land and water in any area. ([2-ESS2-2](#))

The Role of Water on Earth's Surface Processes

- Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. ([2-ESS2-3](#))

Engineering, Technology, and Applications of Science

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Engineering Design

Defining Engineering Problems

- A situation that people want to change or create can be approached as a problem to be solved through engineering. ([2-ETS1-1](#))
- Asking questions, making observations, and gathering information are helpful in thinking about problems. ([2-ETS1-1](#))
- Before beginning to design a solution, it is important to clearly understand the problem. ([2-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. ([2-ETS1-2](#), [2-LS2-2*](#))

Optimizing the Design Solution

- Because there is always more than one possible solution to a problem, it is useful to compare and test designs. ([2-ETS1-3](#), [2-ESS2-1*](#))