Kentucky Science

Grade 2

Adopted 2022

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Physical Science

2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. 2-PS1-1

2-SEPS1-1. Planning and Carrying Out Investigations - Plan and conduct an investigation collaboratively in order to produce data to serve as the basis for evidence to answer a question. 2-SEPS1-1

A1. 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-DCI.PS1.A1

PS1-1. Patterns - Patterns in the natural and human-designed world can be observed. 2-CC.PS1-1

2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. 2-PS1-2

2-SEPS1-2. Analyzing and Interpreting Data - Analyze data from tests of an object or tool to determine if it works as intended. 2-SEPS1-2

A2. Structure and Properties of Matter - Different properties are suited to different purposes. 2-DCI.PS1.A2

PS1-2. Cause and Effect - Simple tests can be designed to gather evidence to support or refute student ideas about causes. 2-CC.PS1-2

2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. 2-PS1-3

2-SEPS1-3. Constructing Explanations and Designing Solutions - Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. 2-SEPS1-3

A3. Structure and Properties of Matter - Different properties are suited to different purposes. A great variety of objects can be built up from a small set of pieces. 2-DCI.PS1.A3

PS1-3. Energy and Matter - Objects may break into smaller pieces and be put together into larger pieces, or they may change shape. 2-CC.PS1-3

2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. 2-PS1-4

2-SEPS1-4. Engaging in Argument from Evidence - Construct an argument with evidence to support a claim. 2-SEPS1-4

B4. Chemical Reactions - Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. 2-DCI.PS1.B4

PS1-4. Cause and Effect - Events have causes that generate observable patterns. 2-CC.PS1-4

Life Science

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

2-SEPLS2-1. Planning and Carrying Out Investigations - Plan and conduct an investigation collaboratively in order to produce data to serve as the basis for evidence to answer a question. `2-SEPLS2-1`

A1. Interdependent Relationships in Ecosystems - Plants depend on water and light to grow. `2-DCI.LS2.A1`

LS2-1. Cause and Effect - Events have causes that generate observable patterns. `2-CC.LS2-1`

2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. `2-LS2-2`

2-SEPLS2-2. Developing and Using Models - Develop a simple model based on evidence to represent a proposed object or tool. `2-SEPLS2-2`

A2. Interdependent Relationships in Ecosystems - Plants depend on animals for pollination or to move their seeds around. `2-DCI.LS2.A2`

B2. 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-DCI.ETS1.B2`

LS2-2. Structure and Function - The shape and stability of structures of natural and designed objects are related to their function(s). `2-CC.LS2-2`

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats. `2-LS4-1`

2-SEPLS4-1. Planning and Carrying Out Investigations - Make observations (firsthand or from media) to collect data that can be used to make comparisons. `2-SEPLS4-1`

D1. Biodiversity and Humans - There are many different kinds of living things in any area, and they exist in different places on land and in water. `2-DCI.LS4.D1`

LS4-1. Patterns - Patterns in the natural world can be observed. `2-CC.LS4-1`

Earth and Space Science

2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly. 2-ESS1-1

2-SEPESS1-1. Constructing Explanations and Designing Solutions - Make observations from several sources to construct an evidence-based account for natural phenomena. 2-SEPESS1-1

C1. 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-DCI.ESS1.C1

ESS1-1. Stability and Change - Things may change slowly or rapidly. 2-CC.ESS1-1

2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. 2-ESS2-1

2-SEPESS2-1. Constructing Explanations and Designing Solutions - Compare multiple solutions to a problem. 2-SEPESS2-1

A1. Earth Materials and Systems - Wind and water can change the shape of the land. 2-DCI.ESS2.A1

C1. 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-DCI.ETS2.C1

ESS2-1. Stability and Change - Things may change slowly or rapidly. 2-CC.ESS2-1

2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area. 2-ESS2-2

2-SEPESS1-2. Developing and Using Models - Develop a model to represent patterns in the natural world. 2-SEPESS1-2

B2. Plate Tectonics and Large-Scale System Interactions - Maps show where things are located. One can map the shapes and kinds of land and water in any area. 2-DCI.ESS2.B2

ESS2-2. Patterns - Patterns in the natural world can be observed. 2-CC.ESS2-2

2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid. 2-ESS2-3

2-SEPESS2-3. Obtaining, Evaluating, and Communicating Information - Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question. 2-SEPESS2-3

C3. The Roles of Water in Earth's Surface Processes - Water is found in oceans, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. 2-DCI.ESS2.C3

ESS2-3. Patterns - Patterns in the natural world can be observed. 2-CC.ESS2-3

K-2 Engineering Design

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation that people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. K-2-ETS1-1

K2-SEPETS1-1. **Asking Questions and Defining Problems - Ask questions based on observations to find more information about the natural and/or designed world(s). Define a simple problem that can be solved through the development of a new or improved object or tool.** K2-SEPETS1-1

A1. **Defining and Delimiting Engineering Problems - A situation that people want to change or create can be approached as a problem to be solved through engineering. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem.** K2-DCI.ETS1.A1

K-2-ETS1-2. **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** K-2-ETS1-2

K2-SEPETS1-2. **Developing and Using Models - Develop a simple model based on evidence to represent a proposed object or tool.** K2-SEPETS1-2

B2. **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.** K2-DCI.ETS1.B2

ETS1-2. **Structure and Function - The shape and stability of structures of natural and designed objects are related to their function(s).** K2-CC.ETS1-2

K-2-ETS1-3. **Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.** K-2-ETS1-3

K2-SEPETS1-3. **Analyzing and Interpreting Data - Analyze data from tests of an object or tool to determine if it works as intended.** K2-SEPETS1-3

C3. **Optimizing the Design Solution - Because there is always more than one possible solution to a problem, it is useful to compare and test designs.** K2-CC.ETS1.C3