

Grade 2 Science Scope and Sequence



Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
Properties of Matter	Materials and Design	Changes in Matter: Heating and Cooling	The Water Cycle	Slow and Rapid Changes on Earth's Surface	Plants	Diversity of Life
Sep – Oct (6 Weeks)	Oct – Nov (4 Weeks)	Nov – Dec (4 Weeks)	Jan – Feb (6 Weeks)	Feb – Mar (6 Weeks)	Mar – Apr (6 Weeks)	May – Jun (7 Weeks)
Students who demonstrate understanding can plan and conduct an investigation to describe and classify different kinds of materials by their observable properties (2-PS1-1)	<p>Students who demonstrate understanding can 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)</p> <p>Students who demonstrate understanding can 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)</p>	Students who demonstrate understanding can construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot (2-PS1-4)	<p>Students who demonstrate understanding can develop a model to represent the shapes and kinds of land and bodies of water in an area (2-ESS2-2)</p> <p>Students who demonstrate understanding can obtain information to identify where water is found on Earth and that it can be solid or liquid (2-ESS2-3)</p>	<p>Students who demonstrate understanding can use information from several sources to provide evidence that Earth events can occur quickly or slowly (2-ESS1-1)</p> <p>Students who demonstrate understanding can compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land (2-ESS2-1)</p>	Students who demonstrate understanding can plan and conduct an investigation to determine if plants need sunlight and water to grow (2-LS2-1)	<p>Students who demonstrate understanding can develop a simple model that illustrates how plants and animals depend on each other for survival (2-LS2-2)</p> <p>Students who demonstrate understanding can make observations of plants and animals to compare the diversity of life in different habitats (2-LS4-1)</p>

Grade 2 Science Scope and Sequence



Unit Title	Unit Focus
<p>1</p> <p>Properties of Matter</p>	<p>2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties</p> <ul style="list-style-type: none"> Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share <p>Disciplinary Core Ideas</p> <hr/> <p>PS1.A: 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</p> <p>Science and Engineering Practices</p> <hr/> <p>Planning and Carrying Out Investigations. Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions</p> <ul style="list-style-type: none"> Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question <p>Crosscutting Concepts</p> <hr/> <p>Patterns. Patterns in the natural and human design world can be observed</p>
<p>2</p> <p>Materials and Design</p>	<p>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</p> <ul style="list-style-type: none"> Clarification Statement: Examples of properties could include, strength, flexibility, hardness, texture and absorbency Assessment Boundary: Assessment of quantitative measurements is limited to length <p>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</p> <ul style="list-style-type: none"> Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects <p>Disciplinary Core Ideas</p> <hr/> <p>PS1.A: Structure and Properties of Matter. Different properties are suited to different purposes</p> <p>PS1.A: Structure and Properties of Matter. A great variety of objects can be built up from a small set of pieces</p> <p>Science and Engineering Practices</p> <hr/> <p>Analyzing and Interpreting Data. Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations</p> <ul style="list-style-type: none"> Analyze data from tests of an object or tool to determine if it works as intended

3

Changes in Matter: Heating and Cooling

Constructing Explanations and Designing Solutions. Constructing explanations and designing solutions in K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions

- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena

Crosscutting Concepts

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

Energy and Matter. Objects may break into smaller pieces and be put together into larger pieces, or change shapes

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

- Clarification Statement: An example of a reversible change could include freezing and melting. An example of an irreversible change could include cooking an egg

Disciplinary Core Ideas

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

Science and Engineering Practices

Engaging in Argument from Evidence. Engaging in argument from evidence in K-2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s)

- Construct an argument with evidence to support a claim

Crosscutting Concepts

Cause and Effect. Events have causes that generate observable patterns

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

- Assessment Boundary: Assessment does not include quantitative scaling in models

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

Disciplinary Core Ideas

ESS2.B: 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

ESS2.C: The Roles of Water in Earth's Surface Processes. Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form

Science and Engineering Practices

Developing and Using Models. Modeling in K-2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that would represent concrete events or design solutions.

- Develop a model to represent patterns in the natural world

Obtaining, Evaluating, and Communicating Information. Obtaining, evaluating, and communicating information in K-2 builds on prior experiences and uses observations and texts to communicate new information

4

The Water Cycle

- 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

Crosscutting Concepts

Patterns. Patterns in the natural world can be observed

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

- Clarification Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and weathering and erosion of rocks, which may occur slowly
- Assessment Boundary: Assessment does not include quantitative measurements of timescales

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

- Clarification Statement: Examples of solutions could include different designs for using rocks, shrubs, grass, and trees to hold back wind, water, and land

Disciplinary Core Ideas

ESS1.C: The History of Planet Earth. Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe

ESS2.A: Earth Materials and Systems. Wind and water can change the shape of the land

ETS1.C: Optimizing the Design Solution. Because there is always more than one possible solution to a problem, it is useful to compare and test designs

Science and Engineering Practices

Constructing explanations and Designing Solutions. Constructing explanations and designing solutions in K-2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions

- Make observations from several sources to construct an evidence-based account for natural phenomena
- Compare multiple solutions to a problem.

Crosscutting Concepts

Stability and Change. Things may change slowly or rapidly

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

- Assessment Boundary: Assessment is limited to testing one variable at a time

Disciplinary Core Ideas

LS2.A: Interdependent Relationships in Ecosystems. Plants depend on water, light and air to grow (NYSED)

Science and Engineering Practices

Planning and Carrying Out Investigations. Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progress to simple investigations, based on fair tests, which provide data to support explanations or design solutions

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question

5

Slow and
Rapid
Changes on
Earth's Surface

6

Plants

7

Crosscutting Concepts

Cause and Effect. Events have causes that generate observable patterns

2-LS2-2. Develop a simple model that illustrates how plants and animals depend on each other for survival

- Clarification Statement: Examples could include animals dispersing seed or pollinating plants, and plants providing food, shelter, and other materials for animals

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

- Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats
- Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats

Disciplinary Core Ideas

LS2.A: Interdependent Relationships in Ecosystems. Animals depend on plants or other animals for food

LS2.A: Interdependent Relationships in Ecosystems. Some plants depend on animals for pollination and for dispersal of seed from one location to another

LS4.D: 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

ETS1.B: Developing Possible Solutions. Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas to other people (NYSED)

Science and Engineering Practices

Developing and Using Models. Modeling in K-2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that would represent concrete events or design solutions

- Develop a simple model based on evidence to represent a proposed object or tool

Planning and Carrying Out Investigations. Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progress to simple investigations, based on fair tests, which provide data to support explanations or design solutions

- Make observations (firsthand or from media) to collect data that can be used to make comparisons

Crosscutting Concepts

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

Patterns. Similarities and differences in patterns can be used to sort and classify organisms

Diversity of Life