

Instructional Support for the Idaho State Science Content and Performance Standards: Second Grade

| <u>Content Domain</u> | <u>Performance Standard</u> | <u>Supporting Content</u> | <u>Science and Engineering Practice</u> | <u>Cross Cutting Concept</u> |
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| Physical Sciences: Matter and its Interactions | PS1-2-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. | Materials Have Observable Properties Different kinds of matter exist and many of them can be solid, liquid, or gas depending on temperature. <ul style="list-style-type: none"> Examples Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share. | Planning and Carrying Out Investigations <ul style="list-style-type: none"> Collaboratively develop an investigation plan to describe evidence for classifying matter. Individually recognize that observations provide evidence about materials and that evidence can be used to classify different kinds of materials. Collaboratively follow the investigation plan. | Patterns <ul style="list-style-type: none"> Patterns in the natural and human designed world can be observed. |
| | PS1-2-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. | Purpose of Materials Different properties are suited to different purposes. <ul style="list-style-type: none"> Examples Properties could include, strength, flexibility, hardness, texture, and absorbency. Limit: Quantitative measurements are limited to length. | Analyze and Interpret Data <ul style="list-style-type: none"> Use graphical displays of given data to organize materials by their properties. Identify and describe relationships between properties and potential uses of materials. Use organized data to support or refute ideas about which properties of materials allow the object or tool to be best suited for the given intended purpose relative to the other given objects/tools. | Cause and Effect <ul style="list-style-type: none"> Simple tests can be designed to gather evidence to support or refute student ideas about cause and effect. |
| | PS1-2-3. 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. | Objects Can Be Disassembled and Reassembled Different properties are suited to different purposes. A great variety of objects can be built up from a small set of pieces. <ul style="list-style-type: none"> Example: Pieces could include blocks, building bricks, or other assorted small objects. | Constructing Explanations and Designing Solutions <ul style="list-style-type: none"> Articulate a statement that objects made of small pieces can be taken apart and reassembled. Observe and describe an object, its pieces, and characteristics of a new object made of the pieces. Use reasoning to connect evidence to support explanations including that objects can be disassembled and made into new objects, that many objects have this property, and the new object may have different properties. | Energy and Matter <ul style="list-style-type: none"> Objects may break into smaller pieces and be put together into larger pieces, or change shape. |
| | PS1-2-4. Construct an argument with evidence that some changes caused by heating and cooling can be reversed and some cannot. | Heating and Cooling Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. <ul style="list-style-type: none"> Example Reversible changes could include materials such as water and butter at different temperatures. Irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper. | Engaging in Argument from Evidence <ul style="list-style-type: none"> Make a claim that some changes caused by heating or cooling can be reversed and some cannot. Describe and evaluate given evidence to determine changes in material after heating and cooling and if the changes are reversible. Use reasoning to connect the evidence to the claim. | Cause and Effect <ul style="list-style-type: none"> Events have causes that generate observable patterns. |

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| Life Sciences: Ecosystems: Interaction, Energy, and Dynamics | LS1-2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow. | Plants Need Sunlight and Water Plants depend on water and light to grow. Limit: Assessment is limited to testing one variable at a time. | Planning and Carrying Out Investigations <ul style="list-style-type: none"> Collaboratively plan and conduct an investigation to produce evidence on the effects of providing or withholding light and water on plant growth. | Cause and Effect <ul style="list-style-type: none"> Events have causes that generate observable patterns. |
| | LS1-2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. | Seed Dispersion and Plant Pollination Plants depend on animals for pollination or to move their seeds around. | Developing and Using Models <ul style="list-style-type: none"> Develop a simple model identifying and mimicking the relevant components or structures of an animal that helps it disperse seeds or pollinate plants. Describe the relationship between the structure of an animal and its function. Use the model to describe how the structure relates to its function. | Structure and Function <ul style="list-style-type: none"> The shape and stability of structures of natural and designed objects are related to their functions. |
| Life Sciences: Biological Adaptation: Unity and Diversity | LS2-2-1. Make observations of plants and animals to compare the diversity of life in different habitats. | Plant and Animal Diversity in Different Habitats There are many different kinds of living things in any area, and they exist in different places on land and in water. <ul style="list-style-type: none"> Example: Emphasis is on the diversity of living things in each of a variety of different habitats. Limit: Assessment does not include specific animal and plant names in specific habitats. | Planning and Carrying Out Investigations <ul style="list-style-type: none"> From a given plan, describe evidence that will be observed about diversity of habitat and living things. Collect, record, and organize data on observed plants in animals in the different habitats. | |

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| Earth and Space Sciences: Earth's Place in the Universe | ESS1-2-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly. | Earth Events Can Occur Quickly or Slowly Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. <ul style="list-style-type: none"> Example: Events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly. Limit: Assessments do not include quantitative measurements of timescales. | Constructing Explanations and Designing Solutions <ul style="list-style-type: none"> Articulate a statement that relates how Earth events can occur very quickly or very slowly. Describe evidence from at least three sources about the relative amount of time it takes for different Earth events to occur. Connect and use evidence to construct an account that describes how some Earth events can occur rapidly, and other events occur slower than can be observed. | Stability and Change <ul style="list-style-type: none"> Things may change slowly or rapidly. |
| Earth and Space Sciences: Earth's Systems | ESS2-2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. | Effects of Wind and Water Wind and water can change the shape of the land. <ul style="list-style-type: none"> Example: Solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land. | Constructing Explanations and Designing Solutions <ul style="list-style-type: none"> Describe a given problem which includes how wind or water can change the shape of the land. Describe how given solutions slow or prevent wind or water from changing the shape of the land. Describe how features of the solution would solve the given problem. Evaluate how given solutions relate to solving the problems and compare advantages and disadvantages of solutions. | Stability and Change <ul style="list-style-type: none"> Things may change slowly or rapidly. |
| | ESS2-2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area. | Shapes/Kinds of Land and Water Maps show where things are located. One can map the shapes and kinds of land and water in any area. Limit: Assessment does not include quantitative scaling in models. | Developing and Using Models <ul style="list-style-type: none"> Develop a model that identifies relevant components of both land and bodies of water in an area. In the model, recognize and describe relationships between components using representations of the specific shapes and kinds of land and bodies of water. Use the model to describe patterns of water and land Recognize that maps can be used to represent many different types of areas. | Patterns <ul style="list-style-type: none"> Patterns in the natural world can be observed. |
| | ESS2-2-3. Obtain information to identify where water is found on Earth and that it can be solid, liquid, or gas. | Location of Water on Earth and Water Exists as Solid/Liquid/Gas Water is found in the ocean, rivers, lakes, ponds and air. Water exists as solid ice, liquid water, and gas vapor. | Obtaining, Evaluating, and Communicating, Information <ul style="list-style-type: none"> Identify and use reliable sources of scientific information to describe where water is found on Earth; that water can be found as liquid, solid, or gas; and that patterns exist for where water is found and what form it is in. | Patterns <ul style="list-style-type: none"> Patterns in the natural world can be observed. |