## 2nd Grade Topic Model

**Narrative and Rationale:** The topic model in Grade 2 is divided into three bundles that build in complexity in terms of both disciplinary and crosscutting content, as well as the application of science and engineering practices across the year.

In Bundle 1, students can examine patterns of where water is found on the Earth in both solid and liquid forms, and patterns of where different kinds of plants and animals live on the land and in the water. In Bundle 2, students can examine how the land can change slowly or quickly by wind or water, and how different design solutions can affect these changes. In Bundle 3, students can explore the needs of plants and how animals and designed solutions can help meet plants’ needs.

Note that the practices and crosscutting concepts included in each bundle are intended as end-of-instructional unit expectations and not curricular designations. Additional practices and crosscutting concepts should be used throughout instruction in each bundle.

<table>
<thead>
<tr>
<th>Bundle 1: What patterns related to water exist in the natural world? ~12 weeks</th>
<th>Bundle 2: Why does the land change over time? ~12 weeks</th>
<th>Bundle 3: What do Plants Need? ~8 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</td>
<td>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.*</td>
<td>2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.</td>
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<td>2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.¹</td>
<td>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.</td>
<td>2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</td>
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<td>2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.</td>
<td>2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.</td>
<td>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.</td>
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<tr>
<td>2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.²</td>
<td>2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.*</td>
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<tr>
<td>2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.</td>
<td>2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.</td>
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<tr>
<td>K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</td>
<td>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.</td>
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¹ The bundle only includes part of this PE; the PE is not fully assessable in a unit of instruction leading to this bundle.
2nd Grade Topic Model Course Flowchart

**Bundle 1**

- **PS1.A as found in 2-PS1-1**
  - 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.

- **PS1.B as found in 2-PS1-4**
  - Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.

- **LS4.D as found in 2-LS4-1**
  - There are many different kinds of living things in any area, and they exist in different places on land and in water.

- **ESS2.B as found in 2-ESS2-2**
  - Maps show where things are located. One can map the shapes and kinds of land and water in any area.

- **ESS2.C as found in 2-ESS2-3**
  - Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.

- **ETS1.A as found in K-2-ETS1-1**
  - 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.

**Bundle 2**

- **PS1.A as found in 2-PS1-2 and 2-PS1-3**
  - Different properties are suited to different purposes.

- **PS1.A as found in 2-PS1-3**
  - A great variety of objects can be built up from a small set of pieces.

- **ESS2.C as found in 2-ESS1-1**
  - Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe.

- **ESS2.A as found in 2-ESS2-1**
  - Wind and water can change the shape of the land.

- **ESS2.B as found in 2-ESS2-2**
  - Maps show where things are located. One can map the shapes and kinds of land and water in any area.

**Bundle 3**

- **LS2.A as found in 2-LS2-1**
  - Plants depend on water and light to grow.

- **LS2.A as found in 2-LS2-2**
  - Plants depend on animals for pollination or to move their seeds around.

- **ETS1.B as found in 2-LS2-2 and K-2-ETS1-2**
  - 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.

- **ETS1.C as found in 2-ESS2-1 and K-2-ETS1-3**
  - Because there is always more than one possible solution to a problem, it is useful to compare and test designs.