

SECOND GRADE: WATER

Standards Bundle

Standards are listed within the bundle. Bundles are created with potential instructional use in mind, based upon potential for related phenomena that can be used throughout a unit.

2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area. (SEP: 2; DCI: ESS2.B; CC: Patterns) *[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. (SEP;8; ESS2.C; CCC: Patterns)

Content Overview

This section provides a generic overview of the content or disciplinary core ideas as an entry point to the standards.

Water is found on Earth in many locations such as oceans, rivers, lakes and ponds. This water can be solid or liquid. We use models, such as maps, to learn information about bodies of water in an area.

Phenomena

Phenomena can be used at varying levels of instruction. One could be used to anchor an entire unit, while another might be more supplemental for anchoring just a unit. Please remember that phenomena should allow students to engage in the SEP and use the CCC/DCI to understand and explain the phenomenon.

- Some water is frozen in winter while other water is frozen all year around.
- Floods change landforms.
- South Dakota land and water formations are different than those in California.
- Glaciers hold 75% of Earth's fresh water.

Storyline

This section aims to decode not only the DCI connections, but also the SEP and CCC in a detailed account of how they possibly fit together in a progression for student learning, including both rationale and context for the bundle.

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Developing and Using Models</p> <ul style="list-style-type: none"> Develop a model to represent patterns in the natural world. <p>Obtaining, Evaluating, and Communicating Information</p> <ul style="list-style-type: none"> 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. 	<p>ESS2.B: Plate Tectonics and Large-Scale System Interactions</p> <ul style="list-style-type: none"> Maps show where things are located. One can map the shapes and kinds of land and water in any area. <p>ESS2.C: The Roles of Water in Earth's Surface Processes</p> <ul style="list-style-type: none"> Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. 	<p>Patterns</p> <ul style="list-style-type: none"> Patterns in the natural world can be observed.

Water is found in many forms and places throughout Earth. Students can research and identify where water is found on the Earth using various models. Students can use evidence to explain that water can be found in oceans, rivers, lakes and ponds and that water can be solid or a liquid. Students can analyze and interpret information from maps and models to construct explanations about waterways and landforms, such as rivers, lakes, mountains, and valleys. By identifying waterways and landforms on maps, students will see how they are connected to make a working system.

Formative Assessment

Formative assessment is crucial because all learners benefit from timely and focused feedback from others. It promotes self-reflection, self-explanation, and social learning. It can also make learning more relevant. Each of the questions below might be used throughout the formative assessment process. Specific prompts may focus on individual practices, core ideas, or crosscutting concepts, but, together, the components need to support inferences about students' three-dimensional science learning as described in a given bundle, standard or lesson-level performance expectation.

Resources to inform your formative assessment.

- <http://stemteachingtools.org/brief/30>
- <http://stemteachingtools.org/brief/41>
- <http://stemteachingtools.org/pd/sessionb>

SEP Developing and Using Models

- Make models of landforms from various materials and describe features of the landform.
- Use sand models to show how water and flooding affect landforms.

SEP Obtaining, Evaluating, and Communicating Information

- Why does the ice and snow in SD all melts, but in Alberta, CA some ice stays year round?

CCC Patterns

- Find patterns of landforms on maps, such as deserts, peninsulas, bays, mountains, and plateaus.

Performance Outcomes

These are statements of how students use knowledge and are similar to the standards in how they blend DCI, SEP, and CCC, but at a smaller grain-size. These are potential outcomes for instruction as it plays out in lessons and activities in the classroom. It is important to also think of these as smaller outcomes that build toward the larger goal of mastering the standards.

- **Analyze and interpret data** on *a map* to determine why landforms and bodies of water are located in different areas.
- **Observe patterns** of landforms on maps.
- **Develop a model** to explain how water creates patterns of changes to landforms over a period of time.
- **Analyze several similarities and differences** among the different types of landforms.
- **Construct an explanation** on why some waterways are solid and liquid and what *causes them to be that way*.