

Second Grade: Earth and Space Science

MAP IT!: Geographical Features

Background Information

There are many geographical features on the Earth, each with its own traits. These landforms may have been formed by plate tectonics. If tectonic plates move toward each other, and collide. The land is pushed upward resulting in hills and mountains. Sometimes plates move toward each other and one plate is forced downward into the earth creating deep trenches.

The formation of new crust and volcanoes are just two features caused by moving plates. As plates move away from one another, water may accumulate resulting in lakes, streams, and rivers. As these water shapes expand, they may change into features such as oceans and seas. Wind and water erosion also play a part in shaping the land.

Performance Expectation

2-ESS2-2 Earth's Systems

Develop a model to represent the shapes and kinds of land and bodies of water in an area. <https://www.nextgenscience.org/pe/2-ess2-2-earths-systems>

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.

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 represent concrete events or design solutions.

Develop a model to represent patterns in the natural world.

Crosscutting Concepts

Patterns in the natural world can be observed.

Objectives

- Students will recognize, map, model, and describe a variety of land and water geological features on the Earth.
- Students be able to discuss the relationships among geographical features.
- Students will be able to discuss the features of a map.

Advanced Preparation

- Determine which sets of Map It (word) Cards groups will use.
- Determine what materials will be available for writing their explorer story.

Materials

- *Map It* Cards
- Copy/Drawing Paper
- Clay/Play-Doh® (Suggested colors: Brown, Blue, Green)
- Paper for Writing Story
- Coloring Supplies (optional)

Suggested Implementation

Groups of 2-4. Distribute a set of landform cards to each group. Allow students time to view and discuss the cards. Pose questions such as the following to the class and discuss:

- *What do these cards tell you?*
- *Have you seen any of these?*
- *If you have seen any of these, where did you see them?*
- *Are these features on the land? Water? Both? Explain your idea(s).*

Share with the class that their groups will be making a model of their shapes of land and water. You may wish to discuss their perceptions/ideas about what a model is, as well as the steps for making a model. If not part of the conversation, bring up the idea of planning before building.

Next groups will build their models and view other's work. Groups select the landforms they wish to represent. Then they consider how the landforms will connect to one another on the model. This is followed by teams making a drawing (plan) of how their model will look. Using up to half a stick of clay, groups will build their models.

Once models are completed, host a gallery walk. To prepare for the gallery wall, groups put their landform cards by their model. When a group goes to another model, they identify each landform by placing the card in front of the appropriate landform. Prior to moving to the next group, landform cards are placed to the side of the model.

When the gallery walk is complete, discuss ideas such as the following with the class:

- *What did you see when you visited each other's models?*
- *Were there any shapes of land (landforms)? Which did you see? Describe their traits.*
- *Were there any shapes of places with water? Which did you see? Describe how they looked.*
- *How did you know if a (fill in the blank. i.e. mountain) was in the model?*

Display a map and a globe (if available). Allow students time to explore each. Continue the discussion with ideas such as:

- *What is the name of each of these?*
- *What did you notice on the map? The globe?*
- *Who would make these?*
- *How could you use these?*
- *Who would use these?*
- *How do think a map maker knows where to put a (fill in the blank: i.e. lake)?*
- *Who do you think were some of the first people to see these? (Coach the idea of an explorer.)*

Share with students that they will now become an early explorer who is the first to see these shapes of land and places with water. It is now time for them to write about their exciting discoveries. Prompt student thinking regarding how they would describe what they saw, where they were found, how they were connected to one another. Encourage inclusion of the drawing of a map. Distribute materials for writing their stories. When finished, allow students to share stories.

Debrief

- *How can we share information about what the Earth looks like?*
- *Why is a map important?*
- *How can a map be used?*
- *Where are these features located?*
- *Where might you find a (fill in the blank: i.e. hill)?*
- *What would be next to that (fill in the blank: i.e. hill)?*

Resources

https://en.wikipedia.org/wiki/List_of_landforms
<https://pubs.usgs.gov/gip/dynamic/understanding.html>

Suggested books from <http://www.kbs.msu.edu/wp-content/uploads/2017/02/NGSS-Interactive-Read-Alouds.pdf>

- Dorros, A. (2000). *Follow the water from brook to ocean*. Describes how water shapes the earth and why it is important to keep our water clean.
- Locker, T. (2002). *Water dance*. The author takes readers on a poetic journey through various bodies of water.
- Smith, P. (2015). *Earth's landforms and bodies of water*. Explains how Earth is covered by landforms and bodies of water, all of which change shape over time.
- Lobel, A. (1993). *Ming Lo moves the mountain*. Ming Lo's wife is angry. The couple live beside a big mountain which causes them no end of trouble. "Husband," says Ming Lo's wife, "you must move the mountain so that we may enjoy our house in peace." But how can a man as small as Ming Lo move something as large as a mountain? Maybe the village wise man can help. This whimsical literary folktale is set in China.

- Smith, P. (2015). *How do wind and water change Earth?* Explains how the shape of Earth is changed by weathering and erosion, the breaking down of rocks and minerals, which are then carried from one place to another by water, ice, wind, and gravity.

Assessment

The following single point rubric can be used to assess student understanding. For each of the criteria listed below, either circle the proficient description or add notes to a box indicating why the student's performance was either lacking or exceptional.

Areas that need improvement. Developing Performance	Criteria for Proficient Performance	Evidence of exceeding standards. Advanced Performance
	Can provide examples of land and water geological features.	
	Can explain in simple terms how geologic features are related.	
	Can point out several geologic features on a map.	