



## **Classroom Teacher Preparation**

### **Earth Science 5: Topographic Maps**

**Please use the following to prepare for the next SfS lesson.**

#### **Description:**

This lesson touches an intersection of science and social studies by familiarizing students with topographic maps. Students create a 3D model of a landform and use it to create a 2D topographic map. Students will then evaluate their understanding of contour lines by interpreting another group's map.

#### **Lesson Objectives – SWBAT (“Students Will Be Able To...”):**

**3<sup>rd</sup>-5<sup>th</sup>**

- Create a 2D topographical map from a 3D model
- Apply their understanding of contour lines by analyzing peer-created topographical maps

#### **Disciplinary Core Idea (DCI)**

*ESS2 Earth's Systems - ESS2.B Plate Tectonics & Large Scale System Interactions*

- (3<sup>rd</sup>-5<sup>th</sup>) Earth's physical features occur in patterns, as do earthquakes and volcanoes. Maps can be used to locate features and determine patterns in those events.

#### **Science & Engineering Practice (SEP)**

*Obtaining, Evaluating, and Communicating Data*

- (3<sup>rd</sup>-5<sup>th</sup>) Communicate scientific and/or technical information orally and/or in written formats, including various forms of media as well as tables, diagrams, and charts.

#### **Crosscutting Concept (CCC)**

*Patterns*

- (3<sup>rd</sup>-5<sup>th</sup>) Patterns can be used as evidence to support an explanation

#### **Preparation:**

There is no prep for this lesson. It is intended to be an introduction to topography and topographic maps.

#### **Room Set Up for Activities:**

Students will work in pairs at their desks.

#### **Safety:**

No safety concerns for this lesson.



## Related Modules:

This module can be related to lessons regarding map-reading, model-making, and geology. Related modules from our **Earth Science** category include:

*Earth Science 9: Rock Cycle* - The three rock types found on Earth (igneous, sedimentary and metamorphic) are discussed and their specific characteristics are identified. Students will examine and identify rock samples using a dichotomous key.

*Earth Science 14: Soil Properties* - This lesson introduces students to the characteristics and formation of soil. Students will examine the color, texture, and field capacity of soil, and discuss the importance of soil for plant life.

## Standards Covered:

Please click the following link to our website to review the standards covered by this lesson, listed by state:  
[www.sciencefromscientists.org/standards/](http://www.sciencefromscientists.org/standards/)

Lessons are matched to both national NGSS and local state standards.

## After Our Visit:

Our Classroom Post can be found on our website at [sciencefromscientists.org/cohorts](http://sciencefromscientists.org/cohorts). Use the name of your school/cohort and password to log in.

To help Evaluate, check out our Open Response questions online at [sciencefromscientists.org/open-response-questions](http://sciencefromscientists.org/open-response-questions). They are freely available for all of our lessons for current teachers. Use the password supplied by your instructor to log in.

For a Lesson Extension, we recommend students create a topographic map of their hands, details [here](#).

## Additional Resources:

- “Topographic Map Skills” - a great video with background information on topographical maps. Intended for teachers as a review, but much more advanced than this lesson! (11:42):  
<https://www.youtube.com/watch?v=bENEygui4jo>
- Visualizing Topography: an online activity that contains animations and interactive movies to help students interpret two-dimensional topographic maps using three-dimensional models:  
[http://reynolds.asu.edu/topo\\_gallery/intro\\_title.htm](http://reynolds.asu.edu/topo_gallery/intro_title.htm)
- Topographic Map of the World: <http://geology.com/nasa/world-topographic-map/>