

## Unit 2—Earth Science (FOSS® Landforms)

### What are the processes that help shape the land?

**Major Understandings:** *quoted from NY State Performance Indicators*

**(Note: Correlation is provided at the level of FOSS “Investigation & Part.” All “Steps” of an investigation must be completed to meet the standard.)**

#### Standard 1 – Analysis, Inquiry and Design – Scientific Inquiry

**Key Idea 1 – The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.**

S1.2b Propose a model of a natural phenomenon.

#### PS 2.1 Explain how the atmosphere (air), hydrosphere (water), and lithosphere (land) interact, evolve, and change.

- 2.1c The rock at the Earth’s surface forms a nearly continuous shell around Earth called the lithosphere.
- 2.1e Rocks are composed of minerals. Only a few rock-forming minerals make up most of the rocks on Earth. Minerals are identified on the basis of physical properties such as streak, hardness, and reaction to acid.
- 2.1g The dynamic processes that wear away Earth’s surface include weathering and erosion.
- 2.1h The process of weathering breaks down rocks to form sediment. Soil consists of sediment, organic material, water and air.
- 2.1i Erosion is the transport of sediment. Gravity is the driving force behind erosion. Gravity can act directly or through agents such as moving water, wind and glaciers.

#### PS 2.2 Describe volcano and earth patterns, the rock cycle, and weather and climate changes.

- 2.2a The interior of the Earth is hot. Heat flow and movement of material within Earth cause sections of Earth’s crust to move. This may result in earthquakes, volcanic eruption, and the creation of mountain and ocean basins.
- 2.2c Folded, tilted, faulted, and displaced rock layers suggest past crustal movement.
- 2.2f Plates may collide, move apart, or slide past one another. Most volcanic activity and mountain building occur at the boundaries of these plates, often resulting in earthquakes.
- 2.2g Rocks are classified according to their method of formation. The three classes of rock are sedimentary, metamorphic, and igneous. Most rocks show characteristics that give clues to their formation conditions.
- 2.2h The rock cycle model shows how types of rock or rock material may be transformed from one type of rock to another.

**Grade 5****General Skills:** *quoted from the NYS Core Curriculum*

**(Note: Correlation is provided at the “Investigation & Part” level.)**

1. Follow safety procedures in the classroom and laboratory.
2. Safely and accurately use the following measurement tools: metric ruler, balance, graduated cylinder.
3. Use appropriate units for measured or calculated values.
4. Recognize and analyze patterns and trends.
5. Classify objects according to an established scheme and a student-generated scheme.
6. Develop and use a dichotomous key.
7. Sequence events.
8. Identify cause-and-effect relationships.

**Physical Setting Skills:** *quoted from the NYS Core Curriculum*

**(Note: Correlation is provided at the “Investigation & Part” level.)**

1. Given the latitude and longitude of a location, indicate its position on a map and determine the latitude and longitude of a given location on a map.
2. Using identification tests and a flow chart, identify mineral samples.
3. Use a diagram of the rock cycle to determine geological processes that led to the formation of a specific type of rock.
4. Plot the location of a recent earthquake and volcanic activity on a map and identify patterns of distribution.
5. Generate and interpret field maps including topographic and weather maps.

**Local AERIAL and TOPOGRAPHIC MAPS** can be obtained from the U.S. Geological Survey.

Visit <http://topomaps.usgs.gov/index.html> to find out more about the USGS Topographic Mapping project that ran from 1879–1992. You can find and order local topographic maps at [http://topomaps.usgs.gov/ordering\\_maps.html](http://topomaps.usgs.gov/ordering_maps.html).

The National Map <http://nationalmap.gov/> is an online interactive map service. It does not require special software. You can download maps to your computer. This site integrates multiple types of information — so start by clicking on “Go to Viewer” and open the “Viewer Help” window for guidance.

## Grade 5

<b>WEEK 1</b>	<b>Lesson 1 (45 min)</b> <b>Objective(s):</b> Survey/Pre-assessment		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1i</li> <li>• General Skills: 4, 7, 8</li> <li>• Physical Setting Skills: 7</li> </ul>		
	<b>Advanced Planning/Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Read the Introduction and Overview sections of your FOSS Landforms Teacher Guide.</li> <li>– Note: Administration of the Survey should be a few days BEFORE the start of the unit.</li> <li>– Teacher Guide, Benchmark Assessment Folio, pp. 1-21, 56.</li> <li>– Download optional tool: Benchmark and I-Check Assessment coding sheets at <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a>.</li> <li>– Kit preparation: see Teacher Guide, Materials, pp 1-7 and Teacher Preparation Video or DVD (or view at <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a>).</li> <li>– Note: see Teacher Guide, Materials, p. 3 for Materials Supplied by the Teacher and Materials from the Landforms Tool Kit. <b>Collect Newspaper.</b></li> <li>– Note: see Teacher Guide, Materials, pp. 4-5. Follow the directions for <b>Preparing a New Kit.</b></li> <li>– <b>You will need 1 set of 8 stream tables for each class you teach. It is not possible for classes to share stream tables.</b></li> <li>– Refer to Teacher Guide, Materials, pp. 6-7 if using a kit that has been used in a prior year or with another class.</li> </ul>		<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Benchmark Assessment Packet, Survey/Posttest pages 1-5</li> <li>– Letter to Parents, Teacher Sheet No. 1</li> </ul>		<b>Homework/Extra Practice</b>

## Grade 5

<b>WEEK 1 (continued)</b>	<b>Lesson 2 (45 min)</b> <b>Objective(s):</b> A model can represent landforms and human structures.		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>Expanded Process Skills: S1.2b</li> <li>General Skills: 1, 2, 4</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 1: <i>Schoolyard Models</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 1: <i>Schoolyard Models</i>, Part 1: <i>Schoolyard Models</i>, Materials and Getting Ready pp. 8-11.</li> <li>– Teacher Guide Assessment folio, pp. 1-5 <b>and</b> pp. 31-32.</li> <li>– Note: The <b>Benchmark Assessment</b> replaces the <i>Summative Assessment</i>.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, to write questions to a scientist, for teaching tips, and other websites to support teaching Landforms.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 1: <i>Schoolyard Models</i> Part 1: <i>Schoolyard Models</i>, # 1-14</li> <li>– Teacher Guide pages 12-15</li> <li>– Investigation Duplication Master: Teacher Sheet No. 1</li> <li>– Investigation Duplication Master: Student Sheet No. 2</li> <li>– Assessment - Assessment Chart No. 1: Assessment for Investigation 1, Part 1 – Teacher Observation – informal notes</li> </ul>	<b>Homework/Extra Practice</b>  <u>Describe Routes:</u> Have students write a detailed description of how to get from one location to another: <ul style="list-style-type: none"> <li>• From the classroom to the cafeteria or gym.</li> <li>• From school to home.</li> <li>• Describe the fire-escape route from the school classroom and draw a map to follow. Compare your map with the one posted in your classroom.</li> </ul>

## Grade 5

<b>WEEK 1 (continued)</b>	<b>Lesson 3 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Maps can be generated from models.</li> <li>• A map can represent landforms and human structures.</li> <li>• A cartographer is a person who constructs maps.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 2, 3, 4</li> <li>• Physical Setting Skills: 7</li> </ul>	
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 1: <i>Schoolyard Models</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 1: <i>Schoolyard Models</i>, Part 2: View from Above, Materials and Getting Ready pp. 16-17.</li> <li>– Teacher Guide Science Stories folio, pp. 1-3.</li> <li>– Teacher Guide Assessment folio, p. 6.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, to write questions to a scientist, for teaching tips, and other websites to support teaching Landforms.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 1: <i>Schoolyard Models</i> Part 2: <i>View from Above</i>, # 1-6</li> <li>– Teacher Guide pages 18-19</li> <li>– Investigation Duplication Master: Teacher Sheet No. 3</li> <li>– Investigation Duplication Master: Student Sheet No. 4</li> <li>– Assessment - Assessment Chart No. 1: Assessment for Investigation 1, Part 2 – Response Sheet – <i>Schoolyard Models</i></li> <li>– <i>Prepare to read FOSS Science Stories: Maps and How They Are Made, and Ancient Maps</i>, pages 1-8. <b>The estimated time for the reading is 40 minutes.</b></li> </ul>		<b>Homework/Extra Practice</b>  Have students bring in a map (street, weather, subway, etc.). Classify the map type after reading “Maps and How They are Made”

## Grade 5

<b>WEEK 1 (continued)</b>	<b>Lesson 4 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Maps can be generated from models.</li> <li>• A map can represent landforms and human structures.</li> <li>• A cartographer is a person who constructs maps.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 2, 3, 4</li> <li>• Physical Setting Skills: 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 1: <i>Schoolyard Models</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 1: <i>Schoolyard Models</i>, Part 2: View from Above, Materials and Getting Ready, pp. 16-17.</li> <li>– Teacher Guide Science Stories folio, pp. 1-3.</li> <li>– Teacher Guide Assessment folio, p. 6.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, to write questions to a scientist, for teaching tips, and other websites to support teaching Landforms.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 1: <i>Schoolyard Models Part 2: View from Above</i>, #7-9</li> <li>– Teacher Guide page 19</li> <li>– Investigation Duplication Master: Student Sheet No. 3</li> <li>– Investigation Duplication Master: Student Sheet No. 4</li> <li>– Assessment - Assessment Chart No. 1: Assessment for Investigation 1, Part 2 – Response Sheet – <i>Schoolyard Models</i></li> </ul> <p><b>READ FOSS Science Stories: <i>Maps and How They Are Made, and Ancient Maps</i>, pages 1-8.</b>  <i>The estimated time for the reading is 40 minutes.</i></p>	<b>Homework/Extra Practice</b>

## Grade 5

	<p><b>Lesson 5 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Maps can be transferred from one scale to another.</li> <li>• Maps have certain advantages over models, for example, they are much more portable.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 2, 3, 4, 7</li> <li>• Physical Setting Skills: 7</li> </ul>	
<b>WEEK 2</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 1: <i>Schoolyard Models</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 1: <i>Schoolyard Models</i>, Part 3: Mapmaking, Materials and Getting Ready pp. 20-21.</li> <li>– Teacher Guide Assessment folio, p. 7.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, to write questions to a scientist, for teaching tips, and other websites to support teaching Landforms.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 1: <i>Schoolyard Models</i> Part 3: <i>View from Above</i>, # 1-9</li> <li>– Teacher Guide page 22-24</li> <li>– Investigation Duplication Master: Student Sheet No. 5</li> <li>– Assessment - Assessment Chart No. 1: Assessment for Investigation 1, Part 3 – Student Sheet – Map Grid</li> </ul> <p><b>READ FOSS Science Stories: <i>Maps and How They Are Made, and Ancient Maps</i>, pages 1-8.</b> <i>The estimated time for the reading is 40 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <p>Home School Connection, Student Sheet No. 34</p>

## Grade 5

<b>WEEK 2 (continued)</b>	<b>Lesson 6 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• A model can represent landforms and human structures.</li> <li>• Maps can be generated from models.</li> <li>• A cartographer is a person who constructs maps.</li> <li>• Maps can be transferred from one scale to another.</li> <li>• Maps have certain advantages over models, for example, they are much more portable.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 4, 7</li> <li>• Physical Setting Skills: 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide, Benchmark Assessment Folio, pp. 22-29, 56.</li> <li>– Plan Assessment Review time with class after teacher assessment coding.</li> </ul>	<b>Investigation/Activity</b> Benchmark Assessment Packet, Investigation 1 I-Check, pages 1-4.	<b>Homework/Extra Practice</b> Math Extension, Student Sheet No. 29

## Grade 5

	<p><b>Lesson 7 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• A landform is the shape of the land.</li> <li>• Erosion involves two processes: Weathering (the wearing away of earth materials by water, wind or ice) and transport (the movement of earth materials to new locations by water, wind, or ice).</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• PS 2.2g</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>	
WEEK 2 (continued)	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: <i>Stream Tables</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 2: <i>Stream Tables</i>, Part 1: <i>Erosion</i>, Materials and Getting Ready pp. 8-10.</li> <li>– Teacher Guide Science Stories folio, pp 4-5.</li> <li>– Teacher Guide Assessment folio, p. 7.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website: Landforms/media/images for a photo of the Adirondack Mountains in New York state that have nearly been flattened by erosion.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: <i>Stream Tables</i> Part 1: <i>Erosion</i>, # 1-16</li> <li>– Teacher Guide pages 11-14</li> <li>– Investigation Duplication Master: Student Sheet No. 6, 7, 8</li> <li>– Assessment - Assessment Chart No. 1: Assessment for Investigation 2, Part 1 – Teacher Observation – informal notes</li> </ul> <p><i>Prepare to read FOSS Science Stories: Real People in the Grand Canyon</i>, pages 9-14. <i>The estimated time for the reading is 30 minutes.</i></p> <p><b>Extension Activity:</b> <i>Sedimentary rock is introduced in the reading, “Real People in the Grand Canyon.” To meet Standard PS 2.2g and 2.2 h, investigate the Windows to the Universe website:</i> <a href="http://www.windows.ucar.edu/tour/link=/earth/geology/geology.html">http://www.windows.ucar.edu/tour/link=/earth/geology/geology.html</a> This website is based at the University of Michigan and includes Beginner, Intermediate and Advanced level pages for each topic. Start as a “Beginner!”</p>	<p><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>• Home School Connection</li> <li>• Student Sheet No. 35</li> </ul>

## Grade 5

<b>WEEK 2 (continued)</b>	<p><b>Lesson 8 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• A landform is the shape of the land.</li> <li>• Erosion involves two processes: Weathering (the wearing away of earth materials by water, wind or ice) and transport (the movement of earth materials to new locations by water, wind, or ice).</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• PS 2.2g</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: <i>Stream Tables</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 2: <i>Stream Tables</i>, Part 1: <i>Erosion</i>, Materials and Getting Ready pp. 8-10.</li> <li>– Teacher Guide Science Stories folio, pp 4-5.</li> <li>– Teacher Guide Assessment folio, p. 7.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: <i>Stream Tables</i> Part 1: <i>Erosion</i>, # 16-19</li> <li>– Teacher Guide pages 11-14</li> <li>– Investigation Duplication Master: Student Sheet No. 6, 7, 8</li> <li>– Assessment - Assessment Chart No. 1: Assessment for Investigation 2, Part 1 – Teacher Observation – informal notes</li> </ul> <p><b>READ FOSS Science Stories: Real People in the Grand Canyon</b>, pages 9-14. <i>The estimated time for the reading is 30 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 5

	<p><b>Lesson 9 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Deposition is the process by which eroded materials settle out in another place.</li> <li>• The flow of water in a stream is affected by barriers in its path caused by erosion and deposition.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>	
<b>WEEK 3</b>	<p><b>Advanced Planning/Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: <i>Stream Tables</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 2: <i>Stream Tables</i>, Part 2: <i>Deposition</i>, Materials and Getting Ready pp. 16-17.</li> <li>– Teacher Guide Assessment folio, p. 8.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website: Landforms/media/images for a photos of deposition – Death Valley National Park and the Mississippi River Delta and Niagara Falls for erosion and deposition.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: <i>Stream Tables</i> Part 2: <i>Deposition</i>, # 1-10</li> <li>– Teacher Guide pages 18-20</li> <li>– Investigation Duplication Master: Student Sheet No. 9</li> <li>– Assessment - Assessment Chart No. 1: Assessment for Investigation 2, Part 2 – Response Sheet – Stream Tables</li> </ul>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <p>Discuss landforms expressions. Consult your Teacher Guide, Investigation 2, page 23 for suggestions.</p>

## Grade 5

<b>WEEK 3 (continued)</b>	<b>Lesson 10 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Deposition is the process by which eroded materials settle out in another place.</li> <li>• The flow of water in a stream is affected by barriers in its path caused by erosion and deposition.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: <i>Stream Tables</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 2: <i>Stream Tables</i>, Part 2: <i>Deposition</i>, Materials and Getting Ready pp. 16-17.</li> <li>– Teacher Guide Assessment folio, p. 8.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 2: <i>Stream Tables</i> Part 2: <i>Deposition</i>, # 11-18</li> <li>– Teacher Guide pages 20-22</li> <li>– Investigation Duplication Master: Student Sheet No. 9</li> <li>– Assessment - Assessment Chart No. 1: Assessment for Investigation 2, Part 2 – Response Sheet – Stream Tables</li> </ul>	<b>Homework/Extra Practice</b>  Math Extension, Student Sheet No. 30

## Grade 5

<b>WEEK 3 (continued)</b>	<b>Lesson 11 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• A landform is the shape of the land.</li> <li>• Erosion involves two processes: Weathering (the wearing away of earth materials by water, wind or ice) and transport (the movement of earth materials to new locations by water, wind, or ice).</li> <li>• Deposition is the process by which eroded materials settle out in another place.</li> <li>• The flow of water in a stream is affected by barriers in its path caused by erosion and deposition.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 4, 7, 8</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide, Benchmark Assessment Folio, pp. 30-37, 56.</li> <li>– Plan Assessment Review time with class after teacher assessment coding.</li> </ul>	<b>Investigation/Activity</b> Benchmark Assessment Packet, Investigation 2 I-Check, pages 1-4.	<b>Homework/Extra Practice</b>

## Grade 5

<b>WEEK 3 (continued)</b>	<b>Lesson 12 (45 min)</b> <b>Objective(s):</b> Steeper slopes result in faster-flowing water, which has more energy and can carry larger loads of material, increasing the amount of erosion and deposition.		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> – Teacher Guide Inv. 3: <i>Go With the Flow</i> , pp. 1-7. – Teacher Guide Inv. 3: <i>Go With the Flow</i> , Part 1: <i>Slope</i> , Materials and Getting Ready pp. 8-10. – Teacher Guide Science Stories folio, pp. 6-7. – Teacher Guide Assessment folio, p. 9.	<b>Investigation/Activity</b> – Investigation 3: <i>Go With the Flow</i> Part 1: <i>Slope</i> , # 1-14 – Teacher Guide pages 11-13 – Investigation Duplication Master: Student Sheet No. 10 – Assessment - Assessment Chart No. 2: Assessment for Investigation 3, Part 1 – Student Sheet – Stream Table Map  <i>Prepare to read FOSS Science Stories: Rivers and Controlling Flow, pages 15-21. The estimated time for the reading is 30 minutes.</i>	<b>Homework/Extra Practice</b>  Math Extension, Student Sheet No. 31

## Grade 5

	<p><b>Lesson 13 (45 min)</b></p> <p><b>Objective(s):</b> Steeper slopes result in faster-flowing water, which has more energy and can carry larger loads of material, increasing the amount of erosion and deposition.</p>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>Expanded Process Skills: S1.2b</li> <li>PS 2.1g, 2.1h, 2.1i</li> <li>General Skills: 1, 2, 3, 4, 7, 8</li> </ul>	
<b>WEEK 4</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, Part 1: <i>Slope</i>, Materials and Getting Ready pp. 8-10.</li> <li>– Teacher Guide Science Stories folio, pp 6-7.</li> <li>– Teacher Guide Assessment folio, p. 9.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Do you have a question for a scientist? Check the database or submit a new one.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: <i>Go With the Flow</i> Part 1: <i>Slope</i>, # 15-17</li> <li>– Teacher Guide page 14</li> <li>– Investigation Duplication Master: Student Sheet No. 10</li> <li>– Assessment - Assessment Chart No. 2: Assessment for Investigation 3, Part 1 – Student Sheet – Stream Table Map</li> </ul> <p><b>READ FOSS Science Stories: Rivers and Controlling Flow</b>, pages 15-21. <i>The estimated time for the reading is 30 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 5

<b>WEEK 4 (continued)</b>	<b>Lesson 14 (45 min)</b> <b>Objective(s):</b> During a flood, the stream's velocity increases dramatically, increasing erosion and deposition.		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, Part 2: <i>Flood</i>, Materials and Getting Ready pp. 15-16.</li> <li>– Teacher Guide Assessment folio, p. 10.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 3: <i>Go With the Flow</i> Part 2: <i>Flood</i>, # 1-8</li> <li>– Teacher Guide pages 17-18</li> <li>– Investigation Duplication Master: Student Sheet No. 10, 11</li> <li>– Assessment - Assessment Chart No. 2: Assessment for Investigation 3, Part 2 – Response Sheet – <i>Go With the Flow</i></li> </ul>	<b>Homework/Extra Practice</b>

## Grade 5

<b>WEEK 4 (continued)</b>	<b>Lesson 15 (45 min)</b> <b>Objective(s):</b> During a flood, the stream’s velocity increases dramatically, increasing erosion and deposition.		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>Expanded Process Skills: S1.2b</li> <li>PS 2.1g, 2.1h, 2.1i</li> <li>General Skills: 1, 2, 3, 4, 7, 8</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 3: <i>Go With the Flow</i>, pp. 1-7.</li> <li>Teacher Guide Inv. 3: <i>Go With the Flow</i>, Part 2: <i>Flood</i>, Materials and Getting Ready, pp. 15-16.</li> <li>Teacher Guide Assessment folio, p. 10.</li> <li><a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – The Missouri River photo in the Media/Images link shows flooding in 1993. Check the web for other images— August 8, 2007 was the tornado and local flooding that struck Brooklyn, New York.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>Investigation 3: <i>Go With the Flow</i> Part 2: <i>Flood</i>, # 9-11</li> <li>Teacher Guide pages 18-19</li> <li>Investigation Duplication Master: Student Sheet No. 10, 11</li> <li>Assessment - Assessment Chart No. 2: Assessment for Investigation 3, Part 2 – Response Sheet – Go With the Flow</li> </ul>	<b>Homework/Extra Practice</b> <ul style="list-style-type: none"> <li>Write a “stream” haiku.</li> <li>See Investigation 3, page 25 of your Teacher Guide for inspiration.</li> </ul>

## Grade 5

<b>WEEK 4 (continued)</b>	<p><b>Lesson 16 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Steeper slopes result in faster-flowing water, which has more energy and can carry larger loads of material, increasing the amount of erosion and deposition.</li> <li>• During a flood, the stream’s velocity increases dramatically, increasing erosion and deposition.</li> <li>• Apply content introduced in previous parts.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p><i>(In addition to the content standards aligned with Landforms, this lesson rehearses many of the process skills introduced in Unit 1: FOSS® Variables.)</i></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, Part 3: <i>Designing an Investigation</i>, Materials and Getting Ready, pp. 20-21.</li> <li>– <b>Plan for final cleanup of stream tables.</b></li> <li>– Teacher Guide Science Stories folio, pp. 8-9.</li> <li>– Teacher Guide Assessment folio, pp. 11-12.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: <i>Go With the Flow</i> Part 3: <i>Designing an Investigation</i>, # 1-6</li> <li>– Teacher Guide pages 22-23</li> <li>– Investigation Duplication Master: Student Sheet No. 10, 12, 13</li> <li>– Assessment - Assessment Chart No. 2: Assessment for Investigation 3, Part 3 – Teacher Observation and Student Sheet – Stream-Table Plan</li> </ul> <p><i>Prepare to read FOSS Science Stories: Shapes of the Earth, pages 22-29. The estimated time for the reading is 50 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>• Home School Connection</li> <li>• Student Sheet No. 36</li> </ul>

## Grade 5

	<p><b>Lesson 17 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Steeper slopes result in faster-flowing water, which has more energy and can carry larger loads of material, increasing the amount of erosion and deposition.</li> <li>• During a flood, the stream’s velocity increases dramatically, increasing erosion and deposition.</li> <li>• Apply content introduced in previous parts.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <p><i>(In addition to the content standards aligned with Landforms, this lesson rehearses many of the process skills introduced in Unit 1: FOSS® Variables.)</i></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>	
<b>WEEK 5</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, Part 3: <i>Designing an Investigation</i>, Materials and Getting Ready pp. 20-21.</li> <li>– <b>Plan for final cleanup of stream tables.</b></li> <li>– Teacher Guide Science Stories folio, pp 8-9.</li> <li>– Teacher Guide Assessment folio, pp. 11-12.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, to write questions to a scientist, for teaching tips, and other websites to support teaching Landforms.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: <i>Go With the Flow</i> Part 3: <i>Designing an Investigation</i>, # 7-9</li> <li>– Teacher Guide pages 22-23</li> <li>– Investigation Duplication Master: Student Sheet No. 10, 12, 13</li> <li>– Assessment - Assessment Chart No. 2: Assessment for Investigation 3, Part 3 – Teacher Observation and Student Sheet – Stream-Table Plan</li> </ul> <p><i>Prepare to read FOSS Science Stories: Shapes of the Earth, pages 22-29.</i>  <i>The estimated time for the reading is 50 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 5

<b>WEEK 5 (continued)</b>	<p><b>Lesson 18 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Steeper slopes result in faster-flowing water, which has more energy and can carry larger loads of material, increasing the amount of erosion and deposition.</li> <li>• During a flood, the stream’s velocity increases dramatically, increasing erosion and deposition.</li> <li>• Apply content introduced in previous parts.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p><i>(In addition to the content standards aligned with Landforms, this lesson rehearses many of the process skills introduced in Unit 1: FOSS® Variables.)</i></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> </ul>
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, Part 3: <i>Designing an Investigation</i>, Materials and Getting Ready pp. 20-21.</li> <li>– <b>Plan for final cleanup of stream tables.</b></li> <li>– Teacher Guide Science Stories folio, pp 8-9.</li> <li>– Teacher Guide Assessment folio, pp. 11-12.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: <i>Go With the Flow</i> Part 3: <i>Designing an Investigation</i>, # 9-12</li> <li>– Teacher Guide pages 23-24</li> <li>– Investigation Duplication Master: Student Sheet No. 10, 12, 13</li> <li>– Assessment - Assessment Chart No. 2: Assessment for Investigation 3, Part 3 – Teacher Observation and Student Sheet – Stream-Table Plan</li> </ul> <p><i>Prepare to read FOSS Science Stories: Shapes of the Earth, pages 22-29.</i>  <i>The estimated time for the reading is 50 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 5

<b>WEEK 5 (continued)</b>	<p><b>Lesson 19 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Steeper slopes result in faster-flowing water, which has more energy and can carry larger loads of material, increasing the amount of erosion and deposition.</li> <li>• During a flood, the stream’s velocity increases dramatically, increasing erosion and deposition.</li> <li>• Apply content introduced in previous parts.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• PS 2.1c, 2.1g, 2.1h, 2.1i</li> <li>• PS 2.2a, 2.2c, 2.2f</li> <li>• General Skills: 4, 7, 8</li> </ul>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 3: <i>Go With the Flow</i>, Part 3: <i>Designing an Investigation</i>, Materials and Getting Ready pp. 20-21.</li> <li>– <b>Plan for final cleanup of stream tables.</b></li> <li>– Teacher Guide Science Stories folio, pp. 8-9.</li> <li>– Teacher Guide Assessment folio, pp. 11-12.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: <i>Go With the Flow</i> Part 3: <i>Designing an Investigation</i>, # 13</li> <li>– Teacher Guide pages 23-24</li> <li>– Investigation Duplication Master: Student Sheet No. 10, 12, 13</li> <li>– Assessment - Assessment Chart No. 2: Assessment for Investigation 3, Part 3 – Teacher Observation and Student Sheet – Stream-Table Plan</li> </ul> <p><b>READ FOSS Science Stories: Shapes of the Earth</b>, pages 22-29. <i>The estimated time for the reading is 50 minutes.</i></p> <p><i>Note: To meet Standard PS 2.1c, add the term and description of the “<b>lithosphere</b>” in the “After the Story” discussion. Visit the Windows to the Universe website at: <a href="http://www.windows.ucar.edu/cgi-bin/tour_def/earth/interior/earths_crust.html">http://www.windows.ucar.edu/cgi-bin/tour_def/earth/interior/earths_crust.html</a> for content support.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 5

<b>WEEK 5 (continued)</b>	<b>Lesson 20 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Steeper slopes result in faster-flowing water, which has more energy and can carry larger loads of material, increasing the amount of erosion and deposition.</li> <li>• During a flood, the stream's velocity increases dramatically, increasing erosion and deposition.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1h, 2.1i</li> <li>• General Skills: 4, 7, 8</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide, Benchmark Assessment Folio, pp. 38-45, 56.</li> <li>– Plan Assessment Review time with class after teacher assessment coding.</li> </ul>	<b>Investigation/Activity</b> Benchmark Assessment Packet, Investigation 3 I-Check, pages 1-5.	<b>Homework/Extra Practice</b>

## Grade 5

	<p><b>Lesson 21 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• A topographic map uses contour lines to show the shape and elevation of the land.</li> <li>• The change in elevation between two adjacent contour lines is always uniform.</li> <li>• The closer the contour lines, the steeper the slope and vice versa.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7, 8</li> <li>• Physical Setting Skills: 7</li> </ul>	
<b>WEEK 6</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: <i>Build a Mountain</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 4: <i>Build a Mountain</i>, Part 1: <i>Making a Topographic Map</i>, Materials and Getting Ready pp. 8-10.</li> <li>– Teacher Guide Science Stories folio, pp 10-11.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, to write questions to a scientist, for teaching tips, and other websites to support teaching Landforms.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: <i>Build a Mountain</i> Part 1: <i>Making a Topographic Map</i>, # 1-15</li> <li>– Teacher Guide pages 11-15</li> <li>– Investigation Duplication Master: Teacher Sheet No. 14</li> <li>– Investigation Duplication Master: Student Sheet No. 15</li> <li>– Assessment - Assessment Chart No. 3: Assessment for Investigation 4, Part 1 – Teacher Observation – informal notes</li> </ul> <p><i>Prepare to read FOSS Science Stories: The Story of Mount Shasta</i>, pages 30-32. <i>The estimated time for the reading is 30 minutes.</i></p>	<p><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>• ART Extension: Draw <b>profiles</b> of other objects or people.</li> <li>• Make silhouettes by casting shadows onto paper and transferring the patterns onto black construction paper.</li> <li>• See Teacher Guide, Inv. 3, p. 25.</li> </ul>

## Grade 5

<b>WEEK 6 (continued)</b>	<p><b>Lesson 22 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• A topographic map uses contour lines to show the shape and elevation of the land.</li> <li>• The change in elevation between two adjacent contour lines is always uniform.</li> <li>• The closer the contour lines, the steeper the slope and vice versa.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7, 8</li> <li>• Physical Setting Skills: 7</li> </ul>
	<p><b>Advanced Planning/Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: <i>Build a Mountain</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 4: <i>Build a Mountain</i>, Part 1: <i>Making a Topographic Map</i>, Materials and Getting Ready, pp. 8-10.</li> <li>– Teacher Guide Science Stories folio, pp. 10-11.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: <i>Build a Mountain</i> Part 1: <i>Making a Topographic Map</i>, # 16-18</li> <li>– Teacher Guide pages 11-15</li> <li>– Investigation Duplication Master: Teacher Sheet No. 14</li> <li>– Investigation Duplication Master: Student Sheet No. 15</li> <li>– Assessment - Assessment Chart No. 3: Assessment for Investigation 4, Part 1 – Teacher Observation – informal notes</li> </ul> <p><b>READ FOSS Science Stories: <i>The Story of Mount Shasta</i>, pages 30-32.</b> <i>The estimated time for the reading is 30 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 5

<b>WEEK 6 (continued)</b>	<b>Lesson 23 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• A profile is a side view or cross section of a landform.</li> <li>• A profile can be drawn from information given on a topographic map.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7, 8</li> <li>• Physical Setting Skills: 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: <i>Build a Mountain</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 4: <i>Build a Mountain</i>, Part 2: <i>Drawing A Profile</i>, Materials and Getting Ready pp. 16-17.</li> <li>– Teacher Guide Science Stories folio, pp. 12-13.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: <i>Build a Mountain</i> Part 2: <i>Drawing a Profile</i>, # 1-6</li> <li>– Teacher Guide pages 18-19</li> <li>– Investigation Duplication Master: Student Sheets No. 16, 17</li> <li>– Assessment - Assessment Chart No. 3: Assessment for Investigation 4, Part 2 – Teacher Observation – informal notes</li> </ul> <p><i>Prepare to read FOSS Science Stories: Topographic Maps, pages 33-34.</i>  <i>The estimated time for the reading is 30 minutes.</i></p>	<b>Homework/Extra Practice</b>

## Grade 5

<b>WEEK 6 (continued)</b>	<p><b>Lesson 24 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• A profile is a side view or cross section of a landform.</li> <li>• A profile can be drawn from information given on a topographic map.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7, 8</li> <li>• Physical Setting Skills: 7</li> </ul>
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: <i>Build a Mountain</i>, pp. 1-7.</li> <li>– <i>Teacher Guide Inv. 4: Build a Mountain, Part 2: Drawing A Profile</i>, Materials and Getting Ready, pp. 16-17.</li> <li>– Teacher Guide Science Stories folio, pp 12-13.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: <i>Build a Mountain Part 2: Drawing a Profile</i>, # 7-9</li> <li>– Teacher Guide page 20</li> <li>– Investigation Duplication Master: Student Sheets No. 16, 17</li> <li>– Assessment - Assessment Chart No. 3: Assessment for Investigation 4, Part 2 – Teacher Observation – informal notes</li> </ul> <p><b>READ FOSS Science Stories: Topographic Maps</b>, pages 33-34. <i>The estimated time for the reading is 30 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <ul style="list-style-type: none"> <li>• Home School Connection</li> <li>• Student Sheet No. 37</li> </ul>

## Grade 5

<b>WEEK 7</b>	<b>Lesson 25 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>All topographic maps use contour lines to show the shape and elevation of the land.</li> <li>Most topographic maps use the same types of symbols to represent landforms and other human-made and natural features.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>Expanded Process Skills: S1.2b</li> <li>General Skills: 1, 3, 4, 7, 8</li> <li>Physical Setting Skills: 7</li> </ul>	
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 4: <i>Build a Mountain</i>, pp. 1-7.</li> <li>Teacher Guide Inv. 4: <i>Build a Mountain</i>, Part 3: <i>FOSS Creek Map</i>, Materials and Getting Ready pp. 21-22.</li> <li>Teacher Guide Assessment folio, p. 13.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>Investigation 4: <i>Build a Mountain</i> Part 3: <i>FOSS Creek Map</i>, # 1-3</li> <li>Teacher Guide pages 23-24</li> <li>Investigation Duplication Master: Student Sheet No. 16, 18, 19</li> <li>Assessment - Assessment Chart No. 3: Assessment for Investigation 4, Part 3 – Response Sheet – Build a Mountain</li> </ul>		<b>Homework/Extra Practice</b>

## Grade 5

<b>WEEK 7 (continued)</b>	<b>Lesson 26 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>All topographic maps use contour lines to show the shape and elevation of the land.</li> <li>Most topographic maps use the same types of symbols to represent landforms and other human-made and natural features.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>Expanded Process Skills: S1.2b</li> <li>General Skills: 1, 3, 4, 7, 8</li> <li>Physical Setting Skills: 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 4: <i>Build a Mountain</i>, pp. 1-7.</li> <li>Teacher Guide Inv. 4: <i>Build a Mountain</i>, Part 3: <i>FOSS Creek Map</i>, Materials and Getting Ready, pp. 21-22.</li> <li>Teacher Guide Assessment folio, p. 13.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>Investigation 4: <i>Build a Mountain</i> Part 3: <i>FOSS Creek Map</i>, # 4-6</li> <li>Teacher Guide page 24</li> <li>Investigation Duplication Master: Student Sheets No. 16, 18, 19</li> <li>Assessment - Assessment Chart No. 3: Assessment for Investigation 4, Part 3 – Response Sheet – Build a Mountain</li> </ul>	<b>Homework/Extra Practice</b>  Math Extension, Student Sheet No. 32

## Grade 5

<b>WEEK 7 (continued)</b>	<p><b>Lesson 27 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• A topographic map uses contour lines to show the shape and elevation of the land.</li> <li>• The change in elevation between two adjacent contour lines is always uniform.</li> <li>• The closer the contour lines, the steeper the slope and vice versa.</li> <li>• A profile is a side view or cross section of a landform.</li> <li>• A profile can be drawn from information given on a topographic map.</li> <li>• All topographic maps use contour lines to show the shape and elevation of the land.</li> <li>• Most topographic maps use the same types of symbols to represent landforms and other human-made and natural features.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 4, 7</li> <li>• Physical Setting Skills: 7</li> </ul>
	<p><b>Advanced Planning/Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide, Benchmark Assessment Folio, pp. 46-53, 56.</li> <li>– Plan Assessment Review time with class after teacher assessment coding.</li> </ul>	<p><b>Investigation/Activity</b></p> <p>Benchmark Assessment Packet, Investigation 4 I-Check, pages 1-4.</p>	<p><b>Homework/Extra Practice</b></p>

## Grade 5

<b>WEEK 7 (continued)</b>	<p><b>Lesson 28 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• A topographic map uses contour lines to show the shape and elevation of the land.</li> <li>• Many symbols are used on topographic maps to provide important information.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7</li> <li>• Physical Setting Skills: 1, 7</li> </ul>	
	<p><b>Advanced Planning/Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 5: <i>Bird's Eye View</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 5: <i>Bird's Eye View</i>, Part 1: <i>Mt. Shasta Topographic Map</i>, Materials and Getting Ready, pp. 8-9.</li> <li>– Teacher Guide Science Stories folio, pp. 14-15.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations: Aerial Photography and Jigsaw Puzzle.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 5: <i>Bird's Eye View</i> Part 1: <i>Mt. Shasta Topographic Map</i>, # 1-14</li> <li>– Teacher Guide pages 10-14</li> <li>– Investigation Duplication Master: Student Sheet No. 20</li> <li>– Assessment - Assessment Chart No. 4:</li> </ul> <p><i>Prepare to read FOSS Science Stories: Aerial Photography, pages 35-36. The estimated time for the reading is 30 minutes.</i></p> <p><i>Note: To meet Physical Settings Skills 1, <u>as each new map is introduced in Investigation 5</u>, add questions to direct students to find the latitude and longitude markings on the map (Mt. Shasta, Death Valley and Bright Angel, Arizona), then locate those coordinates on a classroom map of the United States.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 5

<b>WEEK 8</b>	<p><b>Lesson 29</b> (45 min)</p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• A topographic map uses contour lines to show the shape and elevation of the land.</li> <li>• Many symbols are used on topographic maps to provide important information.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7</li> <li>• Physical Setting Skills: 1, 7</li> </ul>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 5: <i>Bird's Eye View</i>, pp. 1-7.</li> <li>– Teacher Guide Inv. 5: <i>Bird's Eye View</i>, Part 1: <i>Mt. Shasta Topographic Map</i>, Materials and Getting Ready pp. 8-9.</li> <li>– Teacher Guide Science Stories folio, pp. 14-15.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, to write questions to a scientist, for teaching tips, and other websites to support teaching Landforms.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 5: <i>Bird's Eye View</i> Part 1: <i>Mt. Shasta Topographic Map</i>, # 15-17</li> <li>– Teacher Guide pages 10-14</li> <li>– Investigation Duplication Master: Student Sheet No. 20</li> <li>– Assessment - Assessment Chart No. 4:</li> </ul> <p><b>READ FOSS Science Stories: Aerial Photography</b>, pages 35-36. <i>The estimated time for the reading is 30 minutes.</i></p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 5

<b>WEEK 8 (continued)</b>	<b>Lesson 30 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Photographs and topographic maps are two ways to represent a real place.</li> <li>• Photographs and topographic maps provide information about the area they represent.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7</li> <li>• Physical Setting Skills: 1, 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 5: <i>Bird’s Eye View</i>, pp. 1-7</li> <li>– Teacher Guide Inv. 5: <i>Bird’s Eye View</i>, Part 2: <i>Mt. Shasta Aerial Photos</i>, Materials and Getting Ready, pp. 16-17.</li> <li>– Teacher Guide Science Stories folio, pp. 16-17</li> <li>– Teacher Guide Assessment folio, p. 14.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 5: <i>Bird’s Eye View</i> Part 2: <i>Mt. Shasta Aerial Photos</i>, # 1-5</li> <li>– Teacher Guide pages 18-19</li> <li>– Investigation Duplication Master: Student Sheet No. 21, 22</li> <li>– Assessment - Assessment Chart No. 4: Assessment for Investigation 5, Part 2 – Response Sheet – Bird’s Eye View</li> </ul> <p><i>Prepare to read FOSS Science Stories: National Parks, pages 37-42.</i>  <i>The estimated time for the reading is 30 minutes.</i></p>	<b>Homework/Extra Practice</b>

## Grade 5

<b>WEEK 8 (continued)</b>	<b>Lesson 31 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>Photographs and topographic maps are two ways to represent a real place.</li> <li>Photographs and topographic maps provide information about the area they represent.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>Expanded Process Skills: S1.2b</li> <li>General Skills: 1, 3, 4, 7</li> <li>Physical Setting Skills: 1, 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 5: <i>Bird's Eye View</i>, pp. 1-7</li> <li>Teacher Guide Inv. 5: <i>Bird's Eye View</i>, Part 2: <i>Mt. Shasta Aerial Photos</i>, Materials and Getting Ready, pp. 16-17.</li> <li>Teacher Guide Science Stories folio, pp 16-17</li> <li>Teacher Guide Assessment folio, p. 14.</li> <li><a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulation: Jigsaw Puzzle</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>Investigation 5: <i>Bird's Eye View</i> Part 2: <i>Mt. Shasta Aerial Photos</i>, # 6-9</li> <li>Teacher Guide pages 19-20</li> <li>Investigation Duplication Master: Student Sheet No. 21, 22</li> <li>Assessment - Assessment Chart No. 4: Assessment for Investigation 5, Part 2 – Response Sheet – <i>Bird's Eye View</i></li> </ul> <p><b>READ FOSS Science Stories: National Parks</b>, pages 37-42.  <i>The estimated time for the reading is 30 minutes.</i></p>	<b>Homework/Extra Practice</b>  Math Extension, Student Sheet No. 33

## Grade 5

<b>WEEK 8 (continued)</b>	<b>Lesson 32 (45 min)</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Maps can be drawn from aerial photographs.</li> <li>• A photograph does not give enough information to make a complete topographic map.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7</li> <li>• Physical Setting Skills: 1, 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 5: <i>Bird's Eye View</i>, pp. 1-7</li> <li>– Teacher Guide Inv. 5: <i>Bird's Eye View</i>, Part 3: <i>Death Valley and Grand Canyon Maps</i>, Materials and Getting Ready, pp. 21-23.</li> <li>– Teacher Guide Science Stories folio, pp 18-19.</li> <li>– Teacher Guide Assessment folio, p. 15-17.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 5: <i>Bird's Eye View</i> Part 3: <i>Death Valley and Grand Canyon Maps</i>, # 1-8</li> <li>– Teacher Guide pages 24-26</li> <li>– Investigation Duplication Master: Teacher Sheet No. 3 – Transparency Overlay Grid</li> <li>– Investigation Duplication Master: Student Sheet No. 5, Map Grid</li> <li>– Investigation Duplication Master: Student Sheet No. 23, 24</li> <li>– Assessment - Assessment Chart No. 4: Assessment for Investigation 5, Part 3 – Student Sheet – <i>Death Valley</i> Questions and <i>Grand Canyon</i> Questions</li> </ul> <p><i>Prepare to read FOSS Science Stories: Eye of the Needle, pages 43-44.</i>  <i>The estimated time for the reading is 30 minutes.</i></p>	<b>Homework/ Extra Practice</b>

## Grade 5

	<p><b>Lesson 33 (45 min)</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Maps can be drawn from aerial photographs.</li> <li>• A photograph does not give enough information to make a complete topographic map.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• General Skills: 1, 3, 4, 7</li> <li>• Physical Setting Skills: 1, 7</li> </ul>	
<b>WEEK 9</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 5: <i>Bird’s Eye View</i>, pp. 1-7</li> <li>– Teacher Guide Inv. 5: <i>Bird’s Eye View</i>, Part 3: <i>Death Valley and Grand Canyon Maps</i>, Materials and Getting Ready, pp. 21-23.</li> <li>– Teacher Guide Science Stories folio, pp 18-19</li> <li>– Teacher Guide Assessment folio, p. 15-17.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website: Landforms/media/images for a photos of Death Valley and the Grand Canyon.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 5: <i>Bird’s Eye View</i> Part 3: <i>Death Valley and Grand Canyon Maps</i>, # 9-11</li> <li>– Teacher Guide page 26</li> <li>– Investigation Duplication Master: Teacher Sheet No. 3 – Transparency Overlay Grid</li> <li>– Investigation Duplication Master: Student Sheet No. 5, Map Grid</li> <li>– Investigation Duplication Master: Student Sheet No. 23, 24</li> <li>– Assessment - Assessment Chart No. 4: Assessment for Investigation 5, Part 3 – Student Sheet – Death Valley Questions and Grand Canyon Questions</li> </ul> <p><b>READ FOSS Science Stories: <i>Eye of the Needle</i>, pages 43-44. The estimated time for the reading is <b>30 minutes</b>.</b></p>	<p><b>Homework/Extra Practice</b></p> <p>Study a U.S. Landforms Orthophoto: See “Science Extensions” Teacher Guide, Inv. 5, p. 34 and Investigation Duplication Master No. 28.</p> <p><i>If your copier does not make a good quality image, download this master as a PDF file from <a href="http://www.fossweb.com/NYC/masters.html">www.fossweb.com/NYC/masters.html</a> and print them from your computer.</i></p>

## Grade 5

<b>WEEK 9 (continued)</b>	<p><b>Lesson 34 Optional</b> (4-6 lessons, 45 min. each)  <i>FOSS® encourages the use of student projects in Choosing Your Own Investigation. Students develop investigation plans, do systematic work to complete investigations and support conclusions with evidence. While it may not be possible to complete projects in every FOSS® unit, creative management and interdisciplinary opportunities will allow students to gain experience in manageable independent projects. In Landforms FOUR to SIX SESSIONS may be incorporated to complete Investigation 5: Bird's Eye View, Part 4: Choosing Your Own Investigation. If time is not available for Lessons 34, proceed to Lesson 35.</i></p> <p><b>Objective(s):</b>          Apply concepts concerning landforms and topographic maps.</p>		<p><b>Alignment with NYS Core Curriculum:</b>  <i>(In addition to the content standards aligned with Landforms, this lesson rehearses many of the process skills introduced in Unit 1: FOSS® Variables.)</i></p> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1c, 2.1g, 2.1h, 2.1i</li> <li>• PS 2.2a, 2.2c, 2.2f,</li> <li>• General Skills: 1, 2, 3, 4, 7, 8</li> <li>• Physical Setting Skills: 1, 7</li> </ul>
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 5: <i>Bird's Eye View</i>, pp. 1-7</li> <li>– Teacher Guide Inv. 5: <i>Bird's Eye View</i>, Part 4: <i>Choosing Your Own Investigation</i>, Materials and Getting Ready, pp. 27-29.</li> <li>– Teacher Guide Assessment folio, p. 18-19.</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, to write questions to a scientist, for teaching tips, and other websites to support teaching Landforms.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 5: <i>Bird's Eye View</i> Part 4: <i>Choosing Your Own Investigation</i>, # 1-6</li> <li>– Teacher Guide pages 30-31</li> <li>– Investigation Duplication Master: Student Sheet No. 25, 26, 27</li> <li>– Assessment - Assessment Chart No. 4: Assessment for Investigation 5, Part 4 – Student Sheet – Project Proposal and Teacher Observation</li> </ul>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <p>Home School Connection Student Sheet No. 27</p>

## Grade 5

<b>WEEK 9 (continued)</b>	<b>Lesson 35 Required (45 min)</b> <b>Objective(s):</b> Apply concepts concerning landforms and topographic maps.		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1i</li> <li>• General Skills: 4, 7, 8</li> <li>• Physical Setting Skills: 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide, Benchmark Assessment Folio, pp. 1-21, 56</li> <li>– Download optional tool: Benchmark and I-Check Assessment coding sheets at <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> .</li> </ul>	<b>Investigation/Activity</b> Benchmark Assessment Packet, Survey/Posttest, pages 1-5.	<b>Homework/Extra Practice</b>

## Grade 5

<b>WEEK 9 (continued)</b>	<b>Lesson 36 Required (45 min)</b> <b>Objective(s):</b> Apply concepts concerning landforms and topographic maps.		<b>Alignment with NYS Core Curriculum:</b> <ul style="list-style-type: none"> <li>• Expanded Process Skills: S1.2b</li> <li>• PS 2.1g, 2.1i</li> <li>• General Skills: 4, 7, 8</li> <li>• Physical Setting Skills: 7</li> </ul>
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide, Benchmark Assessment Folio, pp. 1-21, 56</li> <li>– Download optional tool: Benchmark and I-Check Assessment coding sheets at <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> .</li> </ul>	<b>Investigation/Activity</b> Benchmark Assessment Review (selected items)	<b>Homework/Extra Practice</b>