

Grade 7

Activity: **A Drop in the Bucket**

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Energy in the Earth's systems

How do external and internal sources of energy affect the Earth's systems?

Content Standards	Activity Objectives	CMT Correlation/Expected Performances
<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. >Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.</p>	<ol style="list-style-type: none"> 1. Calculate the percentage of fresh water available for human use. 2. Explain why water is a limited resource. 	<p>C19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.</p>

Activity: **Adventures in Density**

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Energy in the Earth's Systems

How do external and internal sources of energy affect the earth's systems?

Content Standards	Activity Objectives	CMT Correlation/Expected Performances
<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. >Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.</p>	<ol style="list-style-type: none"> 1. Demonstrate how heat and salinity affect the density of water. 2. Relate the compactness of water molecules to the density of water in different states. 3. Recognize that concepts of density can be found in literature and daily life. 	<p>C19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.</p>

Activity: **Back to the Future**

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Energy in the Earth's Systems

How do external and internal sources of energy affect the earth's systems?

Content Standards	Activity Objectives	CMT Correlation/Expected Performances
<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. >Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.</p>	<ol style="list-style-type: none"> Analyze and interpret streamflow data Identify the risks and benefits of development in a floodplain. 	<p>C19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.</p>

Activity: **Branching Out**

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Energy in the Earth's Systems

How do external and internal sources of energy affect the earth's systems?

Content Standards	Activity Objectives	CMT Correlation/Expected Performances
<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. >Volcanic activity and the folding and faulting of rock layers during the shifting of the Earth's crust affect the formation of mountains, ridges and valleys. >Glaciation, weathering and erosion change the Earth's surface by moving earth materials</p>	<ol style="list-style-type: none"> Predict where water will flow in watersheds. Describe drainage patterns in watersheds. 	<p>C18. Describe how folded and faulted rock layers provide evidence of the gradual up and down motion of the Earth's crust.</p> <p>C19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.</p>

from place to place.		
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Activity: **Energetic Water**

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Energy Transfer and Transformation
 What is the role of energy in our world?

Content Standards	Activity Objectives	CMT Correlation/Expected Performances
<p>7.1 Energy provides the ability to do work and can exist in many forms. >Work is the process of making objects move through the application of force. >Energy can be stored in many forms and can be transformed into the energy of motion.</p>	<ol style="list-style-type: none"> 1. Identify the forms of energy in water 2. Demonstrate how water can be used to do work. 	<p>C13. Explain how simple machines, such as inclined planes, pulleys and levers are used to create mechanical advantage.</p> <p>C14. Describe how different types of stored (potential) energy can be used to make objects move.</p>

Activity: **Geysers Guts**

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Energy in the Earth's System
 How do external and internal sources of energy affect the Earth's systems?

Content Standards	Activity Objectives	CMT Correlation/Expected Performances
<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. >Volcanic activity and</p>	<ol style="list-style-type: none"> 1. List the conditions necessary for a geyser 2. Compare and contrast a geyser, hot spring, fumaroles, and mud pot. 	<p>C18. Describe how folded and faulted rock layers provide evidence of the gradual up and down motion of the Earth's crust.</p>

<p>the folding and faulting of rock layers during the shifting of the Earth's crust affect the formation of mountains, ridges and valleys.</p>		
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Activity: **Just Passing Through**

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Energy in the Earth's Systems

How do external and internal sources of energy affect the earth's systems?

<p>Content Standards (focus of standard)</p>	<p>Activity Objectives (from Project WET activity)</p>	<p>CMT Correlation/Expected Performances</p>
<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. > Glaciation, weathering, and erosion change the earth's surface by moving earth materials from place to place.</p>	<p>1. Compare the rates at which water flows down slopes with and without plant cover. 2. Identify Best Management Practices that can be used to reduce erosion.</p>	<p>C10. Explain how glaciation, weathering, and erosion create and shape valleys and floodplains.</p>

Activity: **Let's Even Things Out**

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Structure and Function

How are organisms structured to ensure efficiency and survival?

<p>Content Standards</p>	<p>Activity Objectives</p>	<p>CMT Correlation/Expected Performances</p>
<p>7.2 Many organisms, including humans, have specialized organ systems that interact with each other to maintain dynamic internal balance. >All organisms are composed of one or</p>	<p>1. Describe and demonstrate the processes of osmosis and diffusion.</p>	<p>C15. Describe the basic structures of an animal cell, including nucleus, cytoplasm, mitochondria and cell membrane, and how they function to support life.</p>

<p>more cells; each cell carries on life-sustaining functions. >Multi-cellular organisms need specialized structures and systems to perform basic life functions.</p>		<p>C16. Describe the structures of the human digestive, respiratory and circulatory systems, and explain how they function to bring oxygen and nutrients to the cells and expel waste materials.</p>
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Activity: **Macroinvertebrate Mayhem**

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Structure and Function

How are organisms structured to ensure efficiency and survival?

<p>Content Standards (focus of standard)</p>	<p>Activity Objectives (from Project WET activity)</p>	<p>CMT Correlation/Expected Performances</p>
<p>7.2 Many organisms including humans have specialized organ systems that interact with each other to maintain dynamic internal balance. >All organisms are composed of one or more cells; each cell carries on life-sustaining functions. >Multicellular organisms need specialized structures and systems to perform basic life functions.</p>	<p>1. Illustrate how tolerance to water quality conditions varies among macroinvertebrate organisms. 2. Explain how population diversity provides insight into the health of an ecosystem.</p>	<p>C15. Describe the basic structures of an animal cell, including nucleus, cytoplasm, mitochondria and cell membrane, and how they function to support life.</p>

Activity: **Molecules in Motion**

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Energy in the Earth's Systems

How do external and internal sources of energy affect the Earth's systems?

<p>Content Standards</p>	<p>Activity Objectives</p>	<p>CMT Correlation/Expected Performances</p>
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<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. >Glaciation, weathering and erosion change the Earth’s surface by moving earth materials from place to place.</p>	<p>1. Model the effects of heat energy on the state of water</p>	<p>C19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.</p>
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Activity: **Old Water**

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Energy in the Earth’s Systems

How do external and internal sources of energy affect the Earth’s systems?

Content Standard	Activity Objectives	CMT Correlation/Expected Performances
<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. >Glaciation, weathering and erosion change the Earth’s surface by moving earth materials from place to place.</p>	<p>1. Appreciate the age of water 2. Compare the proportion of time that water and life processes have existed on Earth</p>	<p>C19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.</p>

Activity: **Super Sleuths**

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Science and Technology in Society

How do science and technology affect the quality of our lives?

Content Standards	Activity Objectives	CMT Correlation/Expected Performances
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<p>7.4 Technology allows us to improve food production and preservation, thus improving our ability to meet the nutritional needs of growing populations. >Various microbes compete with humans for the same sources of food.</p>	<ol style="list-style-type: none"> 1. Identify the role of water in transmitting diseases. 2. Compare symptoms of several waterborne diseases. 3. Analyze the characteristics of environments that promote the transmission of these diseases around the world. 	<p>C21. Describe how freezing, dehydration, pickling and irradiation prevent food spoilage caused by microbes.</p>
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Activity: **The Great Stony Brook**

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<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. >Volcanic activity and the folding and faulting of rock layers during the shifting of the Earth's crust affect the formation of mountains, ridges and valleys. >Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.</p>	<ol style="list-style-type: none"> 1. Demonstrate water's involvement in the processes of sedimentation and erosion. 2. Recognizes that layers of sedimentary rock can contain a record of earlier life (fossils) and environments. 	<p>C18. Describe how folded and faulted rock layers provide evidence of the gradual up and down motion of the Earth's crust.</p> <p>C19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.</p>

Activity: **Wetland Soils in Living Color**

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<p>7.3 Landforms are the result of the interaction of constructive and destructive forces over time. > Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.</p>	<ol style="list-style-type: none"> 1. Classify soils according to color to confirm that an area is a wetland. 2. Describe conditions that create the color characteristics of wetland soils. 	<p>C19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.</p>

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