Disclaimer: This packet is intended ONLY for the use of students enrolled in Leon County Schools.

Complete the assignments below.

4th Grade

Week 1:
☐ Skills Scientists Use (SC.4.N.1.1; SC.4.N.1.6) ☐ Why Scientists Compare Results (SC.4.N.1.2; SC.4.N.1.5) ☐ Observations and Evidence (SC.4.N.1.3; SC.4.N.1.7)

Week 2:
☐ The Sun, Earth, Moon, and Stars (SC.4.E.5.1; SC.4.E.5.2; SC.4.E.5.3) ☐ Rocks and Minerals (SC.4.E.6.1; SC.4.E.6.2)

Week 3:
☐ Natural Resources (SC.4.E.6.3; SC.4.E. 6.6) ☐ Weathering and Erosion (SC.4.E.6.4)

Week 4:
☐ Physical Properties of Matter (SC.4.P.8.1) ☐ Magnets (SC.4.P.8.4)

Science Week 3

Name _____ Date _____ Benchmark Review SC.4.E.6.3, SC.4.E.6.6

SC.4.E.6.3 Recognize that humans need resources found on Earth and that these are either renewable or nonrenewable. **SC.4.E.6.6** Identify resources available in Florida (water, phosphate, oil, limestone, silicon, wind, and solar energy).

Natural Resources

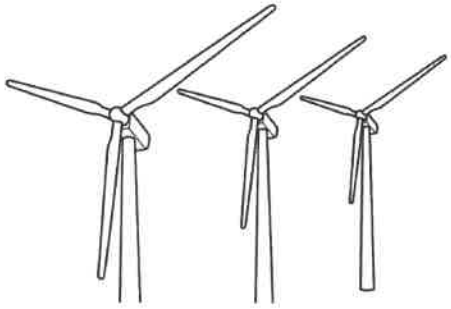
Earth provides you with many natural resources. Resources are the materials you use for building, growing crops, heating and lighting homes, making useful goods, and enjoying yourself. Resources may be renewable resources, such as wind, water, and sun. They may be nonrenewable, such as oil, natural gas, and stone.

You can use resources in their natural state, such as paving stones, coal, or natural gas. You can also make other things using resources. Shoes, plastic, pencils, and glass are made from resources. Shoes are made from plastic, rubber, and leather. Plastic is a petroleum product. Pencils are made from wood and graphite. Glass is made from silica, usually in the form of sand.

Renewable Resources

Renewable resources are resources that can be grown or replaced within a fairly short period of time. A forest is a renewable resource. Even if all trees are cut down, replanting will replace those trees within a human lifetime. Plants and animals are grown, used, and replaced.

Other renewable resources are part of the natural world. Sunlight, wind, water, and oxygen are renewable resources. For centuries, people used wind or water to power mills. Today, wind mills generate electricity.



Moving water turns turbines in hydroelectric plants and also generates electricity. We use water for cleaning, drinking, preparing food, swimming, and other uses.

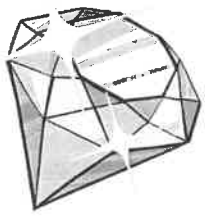
Sunlight powers all plant life, which, in turn, supports animal and human life. Today, people harness the sun's power to make electricity and provide heat.

Some renewable resources can be recycled. Paper, a product made from wood, can be processed back into wood pulp and used to make new paper. Other renewable resources, such as rubber, cannot be recycled. Old tires cannot be used to make new tires. They can, however, be ground up and used in paving roads.

Nonrenewable Resources

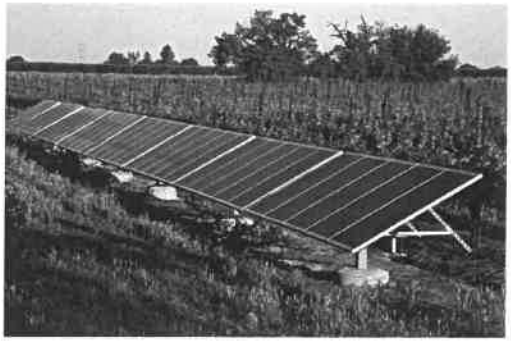
Nonrenewable resources are natural resources that cannot be replaced within a reasonable amount of time.

Nonrenewable resources such as coal, natural gas, and petroleum cannot be replaced within a human lifetime. Called **fossil fuels**, these energy resources may take billions of years to be formed. Minerals and metals are also nonrenewable resources. Iron, aluminum, copper, gold, and silver are commonly used in manufacturing. Iron is a major part of making steel. Aluminum is found in everything from soda cans to light fixtures to automobiles. Gold, silver, and diamonds are used in industry, to make computers, and in jewelry.



While most metals can be recycled, they cannot be replaced. Humans can mine iron, but they cannot make iron.

Florida's Resources



Florida has an abundance of renewable and nonrenewable resources. Among the most important renewable resources are sunlight, water, and wind. The sun supports farming, fishing, generating power, and tourism.

Florida's nonrenewable resources include phosphate, oil, limestone, and silica. Phosphate, limestone, and silica are mined products. Phosphate is used in fertilizer. Limestone is a building material, and silica is used in making computer chips.

People in Florida use local resources to make a living. Florida's tourist industry makes use of the state's sandy beaches, ocean waters, and fishing opportunities. Many farmers take advantage of Florida's rich soil and warm climate to grow vegetables or manage groves that produce oranges and grapefruit. Florida limestone is a common stone in making cement and also as a building stone.

Wetlands and wilderness areas are among Florida's most valued natural resources. Thousands of people every year tour the Everglades to catch sight of cranes, egrets, and alligators.

Name _____ Date _____

Benchmark Review
SC.4.E.6.3, SC.4.E.6.6

Student-Response Activity

❶ Define these terms.

renewable resource _____

_____

nonrenewable resource _____

_____

❷ Sort these resources into renewable resources and nonrenewable resources.

oil	natural gas	limestone	timber	water
gold	coal	iron	sun	wind

Renewable Resources	Nonrenewable Resources

❸ Why would a wetland environment in Florida be considered a natural resource?

_____

_____

_____

❹ The use of resources can cause problems. What solutions can be used to save some of these natural resources? Fill in the blank spaces in this chart.

Possible Problems	Possible Solutions
1. Overfishing in Florida's waters	
2. Cutting trees down for timber	
3. Using too much limestone for building	

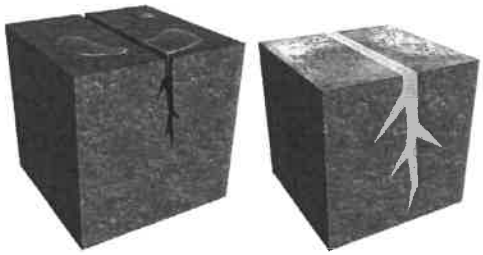
Name _____ Date _____ Benchmark Review SC.4.E.6.4

SC.4.E.6.4 Describe the basic differences between physical weathering (breaking down of rock by wind, water, ice, temperature change, and plants) and erosion (movement of rock by gravity, wind, water, and ice).

Weathering and Erosion

Rock on the surface of Earth is exposed to wear from climate, weather, and other activity. Humans, plants, and animals can cause rocks to wear away. Earth's rocks face a continuous process of building, weathering, erosion, and deposition.

Weathering



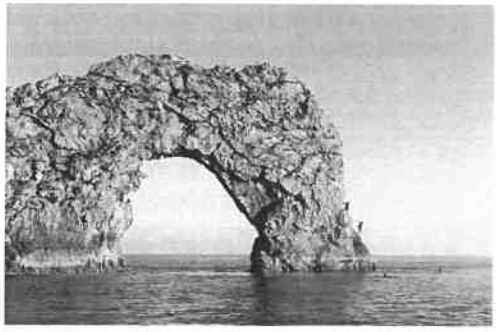
The process of breaking down rock is called **weathering**. The two most common ways to wear down, or weather, rock are wind and water. It might not seem like a raindrop can wear down a rock, but over time, millions of raindrops can carve into rock. Wind picks up particles of rock and strike solid rock. Every strike weakens the rock a very little bit, until the particles of rock break off.

Weathering can also take place by ice, gravity, plants, and animals. For example, when it rains, a crack in a rock fills with water. If the water freezes, the ice pushes against the rock and breaks off pieces of rock. If the crack is large enough, the ice may cause the boulder to crumble. Plant roots and digging animals can have the same effect.

Gravity works on mountains, cliffs, and hillsides. The force of gravity is always present. A clump of rocks rests on the hill. A storm, an animal, or even the rumble of a train causes the rocks to shift. Suddenly, they head downhill, knocking and breaking particles off more rocks.

Erosion

While weathering breaks particles off, **erosion** carries the particles away. Again, water and wind are the main agents of erosion. As particles break off rocks, wind and water carry them away. In this natural bridge, weathering by water weakened the rock, causing the arch to form. Erosion by water carried the sediment away.



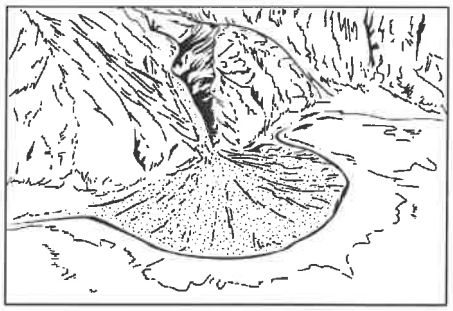
Erosion by wind also carries sediment. When wind loses its power or strikes an object, it drops the sediment. This is how **sand dunes** on a beach or in a desert are formed. Wind can be a powerful source of energy for carrying sediment. Winds in the Sahara have carried particles of sand across the desert and all the way to North America.

Erosion can also happen very quickly. A strong hurricane pushes wind and water. The wind and water pick up massive amounts of sand and deposit it on roads or homes.

Erosion may also take millions of years. The Grand Canyon and this canyon in Flaming Gorge National Recreation area were carved over a very long time.

Deposition

Deposition happens when water or wind no longer carry the particles they picked up. They drop the particles and may create a new landform. A **delta** at the end of a river is formed by depositing sediment. Most **barrier islands** are formed the same way. In the picture, you can see an **alluvial fan**, which is particles carried off a mountain and dumped where a river or stream loses its strength.



Glaciers

Glaciers are like bulldozers. They push and scrape at rocks. They crush rocks under their weight, and they cause huge amounts of sediment to form. The sediment gets caught in the ice and may stay there for thousands of years. When the glacier finally melts, it deposits the material it carried. Sometimes that material is big enough to create an island. For example, Long Island, New York, was formed from the deposited sediment left by a glacier.

Student-Response Activity

❶ Describe each process.

Weathering _____

_____

_____

Erosion _____

_____

_____

Name _____ Date _____

Benchmark Review
SC.4.E.6.4

2. Observe this picture. Which processes cause changes to these canyon rocks?

3. How can a tree cause weathering to a rock?

4. Observe this picture. How did weathering, erosion, and deposition act on this rock cliff?