

Earth Science Unit Test #1 Study Guide

*****Test is on Friday, November 4th*****

Objective: TEK 5.7A- The learner will explore the processes that led to the formation of sedimentary rocks and fossil fuels.

- Know the 3 types of rocks and how they form (especially sedimentary)
 - Sedimentary rocks- form when layers of sediment are pressed together
 - Igneous rocks- form when lava or magma cools and hardens
 - Metamorphic rock- form when other rocks undergo heat and pressure
- The rock cycle allows rocks to change from one type to another.
- Sedimentary rocks are formed as layers of sedimentary rock are pressed together and harden over time.
- Rock layers are deposited oldest to youngest, so the oldest rock layer is usually found at the bottom and the youngest rock layer at the top.
- Fossils are the remains or traces of past life found in sedimentary rock.
- Over time, fossils can become fossil fuels.
- Fossil Fuels are formed from the remains of once living organisms.
 - They are formed when organisms die, are buried by sediment, heat and pressure is applied, and fossil fuels are formed.
 - Examples are natural gas, coal, and petroleum (oil)
 - When fossil fuels are burned energy (stored from the sun) is released. Carbon dioxide gas and pollution are also given off.
- Resources to help you study:
 - Science Notebook- Notes and Activities
 - Online Science Book- Chapter 8 Lesson 2 and Lesson 6
 - Brain POP Videos- Types of Rocks, Rock Cycle, Fossil Fuels, Oil and Gas

Objective: TEK 5.7B The learner will recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to the earth's surface by wind, water, and ice.

- Know that the earth is always changing.
- Know the words weathering, erosion, and deposition
 - Weathering is the process of breaking down of rock into sediment
 - Erosion is the process of moving sediment
 - Deposition is the process of dropping sediment in a new location
- Know that water, wind, and ice are agents or causes of weathering, erosion, and deposition.
- Know examples of how water, wind, and ice can cause weathering, erosion, and deposition.
 - Examples-
 - A river eroding the banks of a river and carrying sediment
 - Wind blowing sand to create unusual landforms

- A mountain top becoming rounded at the top from weathering and erosion
 - Water getting in a crack of a rock, freezing, and breaking rock apart.
- Be able to identify landforms and how they were created.
 - Examples-
 - V-shaped valley (like Grand Canyon) formed by a river weathering and eroding the land
 - U- shaped valley formed by a glacier
 - Sand dunes formed by sand blown by wind and deposited in hills
 - Deltas formed by a river flowing and picking up sediment then depositing it at its mouth.
 - Mountain formed by plates pushing together.
- Know constructive and destructive forces-
 - Constructive forces build land up
 - process is deposition
 - landforms created are deltas, sand dunes, mountains, volcanoes, landslides
 - Destructive forces break land down
 - processes are weathering and erosion
 - landforms created are earthquakes, valleys, canyons, volcanoes, landslides

*Remember some forces like volcanoes and landslides can be both destructive and constructive.

- Know that some changes to the earth's surface are fast like earthquakes, volcanoes, and landslides
- Know that most changes to the earth's surface are slow like weathering, erosion, deposition, formation of a mountain, canyon, etc...
- Resources to help you study:
 - Science Notebook- notes and activities
 - Online Science Book- Chapter 8 Lesson 4
 - Brain POP Videos- Weathering, Erosion, Glaciers, Rivers

Objective: TEK 5.7C -The learner will identify alternative energy sources such as wind, solar, hydroelectric, geothermal and biofuels.

- We are using up our nonrenewable resources and must find reusable or inexhaustible resources to use.
- Wind is moving air. A wind turbine turns wind energy into electricity.
- Solar energy comes from the sun. We use it for heat and light and can even turn it into electricity.
- Hydroelectric is water power. Moving water has energy and can be turned into electricity at a hydropower plant.
- Geothermal energy comes from the heat inside the earth. Geothermal power plants turn the heat inside the earth into energy that can be used.
- Biofuels or Biomass is anything that was once alive, like wood, plants, or garbage. The energy in biofuels comes from the sun. Biomass can be turned into a fuel called ethanol.
- Resources to help you study:
 - Science Notebook- notes and activities
 - Online Science Book- Chapter 8 Lesson 6
 - Alternative Energy Resources Power Point on Science Resources Link on Ms. Passons' Webpage

- Brain POP Videos- Natural Resources, Wind Energy, Solar Energy, Biofuels, Dams

Objective: TEK 5.7D- The learner will identify fossils as evidence of past living organisms and the nature of environments at the time using models.

- Fossils are the remains or traces of past life found in sedimentary rock.
- Fossils show that life on earth has not always been the same as it is today.
- Fossils also show us how the earth has changed and how environments and land can change.
- Fossils are formed when an organism is buried under layers of sedimentary rock and the organism is replaced with minerals and form a trace or mold of the organism.
- Fossils found in sedimentary rock layers can help us understand geologic time as older fossils are usually found in rock layers at the bottom and newer fossils found in rock layers up higher.
- Resources to help you study:
 - Science Notebook- notes and activities
 - Online Science Book- none
 - Fossils Power Point Posted on Science Resources Link on Ms. Passons' Webpage
 - Brain POP Videos- Fossils

Objective: 4.7A The learner is expected to examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants

- Soil is made up of mostly weathered rock. The process of weathering helps form soil.
- Soil contains organic (living or once-living) and inorganic (not living) matter
 - Organic matter includes living organisms like decomposers and decaying plants and animals called humus.
 - Humus is decaying plant and animal material. It makes soil dark brown. It provides plants nutrients to grow and makes spaces in soil for air and water that plants need.
 - Inorganic matter includes water, air, and pieces of rocks and minerals
- Soil has 3 layers
 - Topsoil- top layer made mostly of humus and living organisms, darker brown, has the most humus
 - Subsoil- middle layer that has many minerals and small rocks and less humus than topsoil
 - Bedrock- the bottom layer that is made mostly of solid rock and has very little to no organic matter
- A soil's color, texture, particle size, and ability to hold water depends on the minerals in it.
- Clay soils have tiny particles and have the ability to hold more water while sandy soils have larger particles and do not hold water as well.
- Factors that affect how soils form are climate and the type of rock.
- Resources to help you study:
 - Science Notebook- notes and activities
 - Online Science Book- Chapter 8 Lesson 3
 - Brain POP Videos- Soil

Objective: 4.7A The learner is expected to identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation.

- Natural Resources are useful materials that people take from the Earth
- 3 types of resources:
 - A renewable resource is a resource that can be replaced. Examples are trees, plants, animals, soil, bio-fuels
 - A nonrenewable resource is a resource that cannot be replaced or takes longer to be replaced than we are using it. Examples are fossil fuels- coal, oil, and natural gas
 - An inexhaustible resource is a resource that will not run out. Examples are wind, water, solar energy, and geothermal energy
- Resources to help you study:
 - Science Notebook- notes and activities
 - Online Science Book- Chapter 8 Lesson 6
 - Brain POP Videos- Natural Resources

Objective: 3.7B The learner is expected to investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides.

- Changes to the earth's crust that can happen rapidly are earthquakes, volcanoes, and landslides.
- The earth's crust is made of plates that move on the mantle of the earth. These plates can move toward one another, away from one another, or slide past each other.
- Mountains, volcanoes, and earthquakes can form when the earth's plates move in these ways.
- Mountains usually form when plates are pushed together and the land gets pushed up to create raised areas of land.
- Volcanoes usually form at converging plate boundaries (where two plates come together) and are created when molten rock reaches the earth's surface.
- Earthquakes usually form when two plates slide past each other or at a fault as the crust suddenly moves and releases energy.
- Resources to help you study:
 - Science Notebook- notes and activities
 - Online Science Book- Chapter 8 Lesson 6
 - Brain POP Videos- Mountains, Volcanoes, Earthquakes, Earth's Structure, Plate Tectonics

Review Questions to Answer

1. Fossils give evidence about which of the following:
 - a. What kind of organisms lived long ago
 - b. What the climate conditions were like long ago
 - c. How organisms have changed over time
 - d. All of the above

2. Which of the following types of rock is formed when layers of sediment are pressed together and harden over time?
 - a. Metamorphic rocks
 - b. Igneous rocks
 - c. Sedimentary rocks
 - d. All of the above

3. Which of the following can erode large amounts of earth as it moves and create U-shaped valleys?
 - a. Landslides
 - b. Glaciers
 - c. Mountains
 - d. Volcanoes

4. In the science lab, we used stream tables filled with sand and poured water over the sand to learn about and observe:
 - a. Volcanoes
 - b. Weathering, erosion, and deposition
 - c. Fossils
 - d. How landforms like deltas and canyons form
 - e. Both b and d

5. All of the following are examples of constructive forces except:
 - a. Building mountains
 - b. Deposition of sediment
 - c. Breaking down rock into sediment
 - d. Formation of a delta

6. If we continue to rapidly use nonrenewable resources they might run out. We could conserve these resources by using inexhaustible resources or alternative energy resources including all of the following except:
 - a. Solar energy
 - b. Biofuels
 - c. Fossil fuels
 - d. Geothermal energy

