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| **Objective/Question:** | **Location:** | **Website(s):** | **Vocabulary Terms:** | **Notes:** |
| ***Shaping Earth’s Surface*** |  |  |  |  |
| **1. [Compare** and **contrast** the effects of erosion on mountains and other landforms (use charts, graphs, etc.)]: What causes and what are the effects of: weathering, erosion, and deposition? | Text: 284-289  WB: 119-120, #1-11 | <https://www.youtube.com/watch?v=J-ULcVdeqgE> (5:09) | 1. deposition  2. erosion  3. chemical weathering  4. physical weathering | \*Weathering occurs when rocks or other minerals are broken down  \*Causes of physical weathering are: temperature changes, gravity, and wind  \*Chemical weathering occurs when chemicals that come into contact with the area change it and cause it to break down  \*Erosion happens when the weathered rock moves from one place to another  \*Deposition refers to the dropping off of weather rock into another location  \* Gravity, glaciers, running water, waves, or wind can cause erosion and deposition |
| **2. [Identify** the features found on the ocean floor]: What are some of the main features of the ocean floor? How did these features form? | Text: 242-243; 254-255  WB: 99-100, #9-13 and 103-104, #5-10 | <https://www.youtube.com/watch?v=yxFazy_vDhE> (1:34)  <http://legacy.mos.org/oceans/planet/features.html>  http://www.education.noaa.gov/Ocean\_and\_Coasts/Ocean\_Floor\_Features.html | 5. trench  6. abyssal plain  7. mid-ocean ridge  8. continental shelf  9. continental slope  10. plate tectonics (review diagram on page 254) | \*The shape of the ocean floor is largely a result of plate tectonics  \*Besides being the base for islands, the ocean floor also includes continental shelves and slopes, canyons, oceanic ridges, trenches, abyssal hills, abyssal plains, volcanoes, and seamounts  \*Earth’s continents and oceans rest on huge plates of solid rock  \* Where plates are pull away from each other molten magma flows upward between the plates forming mid-ocean ridges, underwater volcanoes, and new ocean floor crust. The Mid-Atlantic Ridge, is an example of this type of plate boundary  \*A mid-ocean ridge runs roughly parallel to the separating continents. The ridge remains stationary while the ocean floor on both sides of the ridge grows wider |
| **3. [Explain** how earthquakes happen and their results]: What causes earthquakes? What effects might come from an earthquake? | Text: 272-273 and 276-278  WB: 113-114, #1-4 and 9-17 | http://www.exploratorium.edu/faultline/ | 11. earthquake  12. epicenter  13. focus  14. magnitude  15. tsunami | \*During an earthquake, the rock on both sides of a fault is pushed and pulled by forces in the crust  \*When layers of rock that are stuck together suddenly slip, an earthquake occurs  \*The place where the slipping begins is called the focus and waves of energy ripple out from the focus  \*The epicenter is the point on Earth’s surface directly above the focus  \*The amount of damage an earthquake causes depends partly on the amount of energy released at the earthquake’s focus  \*Earthquakes happen along the boundaries of tectonic plates because the pressure from the movement of the plates pushes on nearby faults  \*The magnitude, or amount of energy released by an earthquake, is measured using the Richter scale  \*Tsunamis can occur when a large-scale earthquake occurs underneath the ocean |
| **4. [Describe** volcanoes and their effects on Earth]: Where are volcanoes found? What causes volcanoes to erupt? Why do most volcanoes occur on the ocean floor? | Text: 262-265  WB: 109-110, #1-13 | https://www.youtube.com/watch?v=wJS7hGMr0Ws | 16. volcano  17. eruption  18. magma  19. Ring of Fire  20. active volcano  21. dormant volcano  22. extinct volcano | \*Volcanoes form on land and on the ocean floor and is an opening in Earth’s crust  \*More than 80% of Earth’s volcanic activity occurs on the ocean floor  \*Most volcanoes are found where the plates that make up Earth’s crust meet each other  \*Volcanoes tend to erupt where one plate is pushed under another plate  \*The Ring of Fire follows the boundaries of the plates that meet around the Pacific Ocean  \*An eruption is an outpouring of melted rock, ash, gases, or a combination of these  \*Magma forms as plates melt under great heat and pressure as they are pushed down into the mantle  \*Once magma reaches Earth’s surface it is called lava  \*Lava, ashes, and gases erupt through at least one vent, or opening  \*When lava comes out of a vent, it is liquid and it forms solid rock as it hardens  \*The hardened lava can form a volcanic mountain over time |
| **5. [Explain** how glaciers change landforms over time and **describe** the effects of such changes on the oceans of the Earth]: How do glaciers affect Earth’s landforms? Explain what happens to Earth’s surface when glaciers increase in size and when they decrease in size. |  | https://nsidc.org/cryosphere/glaciers/information.html | 23. glacier  24. cirque | \*As glaciers move, they carry away weather pieces of rock  \*The bits of rock wear away the ground at the beginning of the glacier, forming a steep bowl-shaped hollow called a cirque  \*The rocks and flowing ice also wear away dirt and rock along the sides of the glacier  \*If glaciers increase in size, there is less liquid water present on Earth  \*A decrease in the size of glaciers increases the amount of liquid water available on Earth and can lead to flooding |
| **6. [Describe** how minerals and fossil fuels are formed]: How are minerals formed? Are fossil fuels formed in a similar or different way? Explain. | Text: 302 (1st paragraph) and 327  WB: 136, #1-6 | http://www.rocksforkids.com/2how.html | 25. mineral  26. element  27. fossil fuel | \*A mineral is composed of the same substance throughout.  \*Minerals can be made of a single element or of two or more elements  \*Almost all minerals and gems are formed below the Earth's surface.  \*In general, minerals can form in two ways: by crystallization of magma and lava and through crystallization of materials dissolved in water  \*Some minerals are brought to the surface through mining, some are brought to the surface through earth processes like faulting, folding, or volcanic eruptions.  \*The effects of pressure and temperature can change organic matter into fossil fuels. This does not happen quickly. The transformation takes millions of years.  \*Coal forms from dead plants that sink to the bottoms of swamps. The organic matter is buried under sediments and slowly transformed into peat. If the peat is buried under more sediment, it can become coal. There are several kinds of coal. Coal that has experienced greater pressure contains more energy.  \*The other kinds of fossil fuels, oil and natural gas, are not rocks. They formed from microscopic animals that lived in ancient seas. When these tiny creatures died, they were buried beneath layers of sediments. The sediments became sedimentary rocks. Over millions of years, pressure from the rocks changed some of the organic  matter into oil. (Another word for this kind of oil is petroleum.) Given enough pressure, organic matter can also become natural gas. |