**S5E1. Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive &/or destructive processes.**

1. Construct an argument supported by scientific evidence to identify surface features (examples could include deltas, sand dunes, mountains, volcanoes) as being caused by constructive &/or destructive processes (examples could include deposition, weathering, erosion, and impact of organisms).
2. Develop simple interactive models to collect data that illustrate how changes in surface features are/were caused by constructive &/or destructive processes.
3. Ask questions to obtain information on how technology is used to limit &/or predict the impact of constructive & destructive processes.

Constructive & Deconstructive Forces Study Guide

1. What causes rock to break down or become smooth?
   1. Weathering
2. What is the term for moving rocks and sediment from once place to another?
   1. Erosion
3. What types of land forms occur due to deposition?
   1. Deltas and Sand dunes on beaches or in deserts
4. How can plants weather rocks?
   1. Plant roots grow longer and thicker, therefore cracking and breaking the rock.
5. How can plants help prevent erosion?
   1. The plant roots hold the soil and rock into place, so it cannot move.
6. What kind of water temperature erodes rock and sediment faster?
   1. Warmer water temperatures erode rock faster than cooler temps.
7. What kind of downhill slopes erode rock and sediment faster?
   1. Steeper, faster moving slopes erode rock faster. A slope of 32 degrees will erode rock faster than a slope of 12 degrees.
8. How long does weathering take?
   1. Very long- sometimes it can take up to 1,000,000 years for a land form to disappear from weathering.
9. What are the 4 layers of Earth?
   1. The crust, the mantle, the outer core, and the inner core
10. Plates on the earth’s crust move in different ways. What land form is created when plates slide under each other?
    1. Mountains are formed
11. What happens when plates pull away from each other?
    1. Cracks or rifts; sometimes volcanos form
12. What happens when plates slide against each other?
    1. Earthquakes
13. How large can typical tectonic plate be?
    1. Very large- some are as large as entire oceans or continents. Most are over 2,000 miles wide.
14. What is the difference between the focus and the epicenter of an earthquake?
    1. The epicenter is the location on the surface of the crust where an earthquake is strongest. The focus is the location where the earthquakes begins when plates move. The focus is directly under the epicenter.
15. Which technological tool measures and predicts earthquakes?
    1. Seismographs
16. How do seismographs work?
    1. When an earthquake occurs, a needle moves back and forth in a rapid movement and records the movements on paper.
17. What is a volcano?
    1. An opening in the earth’s crust that allows magma from the mantle layer to move to the surface.
18. What is the Ring of Fire?
    1. The area spanning in a circle around the Pacific Ocean. The plate boundaries create many volcanos and earthquakes that commonly occur.
19. What causes a volcano to be active?
    1. The plates have drifted creating an opening in the earth allowing magma to come to the surface.
20. What causes magma to come to the surface of earth’s crust?
    1. Heat and pressure in the mantle cause openings in the crust forcing magma to the surface.
21. Which type of volcano has non-explosive eruptions?
    1. Shield volcanos
22. Which type of volcano has explosive eruptions?
    1. Cinder Cone volcanos
23. Which type of volcano has both explosive and non-explosive eruptions?
    1. Composite volcanos