**At-Home Virtual learning:**

Each of the mini-labs below represent either a type of weathering, erosion, sorting, or it affects it in some way. In class, each would have been a station, however, we are not in class. Each mini-lab has been adapted to be done at home. To get full credit, you must complete 1 erosion lab, and 1 deposition lab. Complete each table and answer questions as needed for the lab. If the lab was done at home, include at least one picture per lab done at home.

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# Erosion: Creep and Topography

**Materials:**

**Metal tray**

**Dirt**

**Small cup of water**

1. Press a layer of dirt into the tray (as if you were making rice krispie treats).
2. Tilt the tray to a 45 degree angle and observe what happens.
3. Take a small cup of water and slowly pour it on the top of the tilted tray.

**Questions:**

1. Does the soil fall down the slope on its own?
2. What causes the soil to fall down the slope faster?
3. Did more big pieces or small pieces fall down the slope?

# Erosion: Mud Flow

**Materials:**

**2 Cake Pans**

**2 Aluminum Bread Pans**

**Soil**

**Forks (plastic or metal)**

**Stack of books (or other object to lean the pans onto)**

1. Fill two bread pans with an equal amount of soil and carefully pat it down a little.
2. Lean the bread pan on a pile of books and lean the other side in the cake pan.
3. In one of them, stick forks into the soil, this will act like trees.
4. Slowly pour water onto the soil on one side of the bread pan.
5. Watch it flow down into the cake pan.
6. Observe how much soil was eroded away.
7. You can test other ways to slow down or stop erosion using this model.

**Questions:**

1. Which pan eroded the most?
2. What might you do if you had an issue with erosion?

# Deposition: Vertical Sorting

**Materials:**

**Clear jar or bottle with a lid or top**

1. Go outside and get a sample of sediment (soil). Fill around 1/3 of the jar. Avoid rocks and pebbles if you can.
2. Fill the rest of the jar, almost to the top, with water.
3. Secure the lid on the jar and shake the jar really well so that all the sediment (rock and soil) is mixed into the water. Put the jar down and leave it alone.

**Soil Texture**

1. After about 2 minutes, mark where the line of settled sediments is. This is how much sand is in the soil.
2. After about 2 hours, mark where the line of settled sediments is. This is how much silt is in the soil.
3. After 24 hours, the smallest visible particles, clay, will have settled.

**Questions:**

1. About what percent of the soil is sand? Silt? Clay?

|  |  |  |
| --- | --- | --- |
| % Sand | % Silt | % Clay |
|  |  |  |

1. Why did the larger sediments settle first?

# Deposition: Horizontal Sorting

**Materials:**

**Garden Hose with access to water**

**Hard Surface outside (Driveway, Sidewalk, Outdoor table, road)**

1. Gather some soil and rocks of different sizes and put them on the hard surface. If possible, use something with a slope (a hill or ramp)
2. Hook the hose up to a water source
3. If your hose has a sprayer, remove the sprayer for now so that the water flows at normal speed
4. Leave the end of the hose near to the soil, uphill if on a slope, so that the water will flow over the soil.
5. Turn on the water.
6. Observe which sediments are being moved
7. Either use your thumb to cover the end of the hose so that the water comes out faster, or use a sprayer, and spray near the remaining rocks.

**Questions:**

1. Did all of the sediment move in the slow moving water? Which sediments were not moved?
2. When you increased the force of the water, was it able to move the remaining sediments? Why?