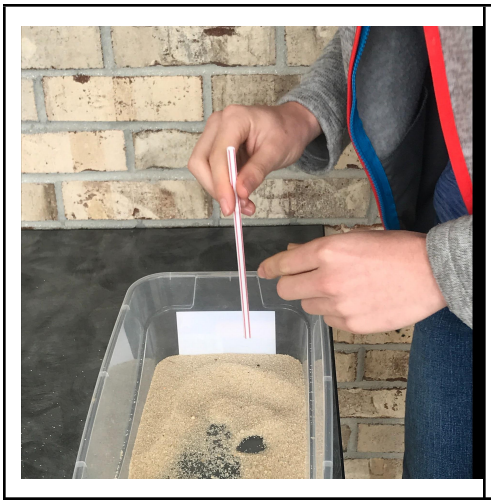
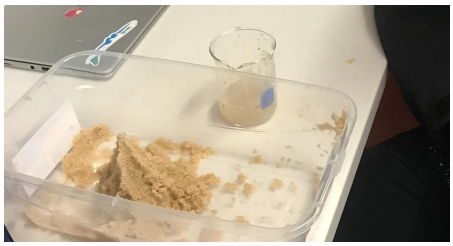
Erosion Lab

Overview: In this lab, students will model wind and water erosion using sand and soil. They will observe the effects of wind and water on the two different substances.

Supplies

1. **Safety Glasses** (don't want to get any sand in your eyes!)
2. **Plastic Shoebox**
3. **250 ml beaker**
4. **Straw**
5. **200 ml sand**
6. **200 ml soil/clay**
7. **200 ml water**
8. **Scale (if you are using clay)**
9. **Textbooks to elevate the box**
10. **1 Pipe cleaner cut in two 2 inch pieces**





Erosion Lab

Part 1. Sand

1. Put on **Safety Glasses** (don't want to get any sand in your eyes!)
2. Fill a **250 ml beaker** FULL with dry sand
3. Put it in the **plastic shoebox**
4. Flatten the sand out in the box
5. Blow through the **straw** and make observations about how the sand moves as you blow. Pay attention to blowing in different directions.

6. Push the sand to one end of the box and blow again. Make additional observations

7. Fill the 250 mL beaker with 200 mL of water. Pour 4-5 dribbles on the dry sand. What do you notice?

8. Continue to pour water and see how the water seems to flow through the sand. (hopefully you have about 100 mL of water left).

9. Make a mountain of your sand in your box. Pour a steady stream of water on one part of the mountain. Eventually the part of the mountain will slump or collapse. Make your observations here

10. Now tilt your box at an angle by putting it on your Science journal or other book. Reform your mountain at the tall end of the box.

11. Observe the water at the far end of the box. Where is the sediment? Is the water clear or cloudy?

12. Pour a couple dribbles of water at the top of your mountain. What do you notice about the sand movement and the water movement?

13. Now pour more water at the top of your mountain until part of the mountain collapses again. Which part of the mountain collapses and what is left behind? Take a **picture** and put it here. Or draw a picture of the mountain profile

14. Pour the water back into the empty beaker. Scoop out as much sand as possible into the dump bucket. How much water is in the beaker?

Part 2-- Soil/Clay

1. Get a clump of clay (or 200 mL of soil) and put it in your plastic box. If using clay, take the mass of your clay and write it here.

2. Again put your box on a tilt and put the clump of clay at the top end of the box. Make sure you have 100 mL in your beaker. Pour 3-4 dribbles of water over the clump of clay. What happens to the water?

3. Continue to pour 3-4 more dribbles over the clay. Observe the clay for 20 seconds. What do you see?

4. Pour more water until water runs downhill to the other end of the box. What color is that water? Is it clear or cloudy? Can you see the sediment? Maybe you made a delta--see how the sediment collects?

5. Look at the base of the clump of clay. Notice the thick mud that is around the base of the clump. What observations can you make about that mud?

6. Slowly pour the rest of the 100 mL over top of the clump. Do any parts of the clump break off? Why do you think this is?

7. Are there small pebbles or particles that are now exposed as the clay washed away? What do you think this is?

8.Which particles washed the farthest “downhill?” (larger or smaller?) Why?

9. If using clay, take the mass again. If you cannot pick it up, why is that?

10. Take a photo and add it here (or draw a picture)

Part 3-- Tree Roots

What happens with Tree Roots??

1. Add some wet sand to your wet clay. Mix them together and pour a dribble of water on this mound. What happens?

2. Take two 2” long pipe cleaners, twist them together to make an x and embed them in the mountain. Now pour some water on it. What happens to the water/soil now? Why?

What are three takeaways from this lab?