

Water Filtration Lab

(15 points)

Hypothesis:

What color will come out the bottom with the sand?
What color will come out the bottom with the topsoil?

Required Materials:

- Styrofoam cups (small and large)
- toothpick
- sand
- topsoil
- grape Kool-Aid®
- food coloring
- water

Directions:

1. Poke 3-5 holes in the bottom of the larger cup using a toothpick.
2. Fill the larger cup half full of sand.
3. Put the larger cup inside the smaller cup. Put a toothpick between the cups so that the air can escape from the bottom cup.
4. Pour some of the grape Kool-aid into the top cup.
5. Observe: What color is the Kool-aid that goes into the cup? What color is the water that collects in the bottom cup?
6. Put a 2-inch layer of sand in the bottom of a new, larger cup that has holes in it.
7. Add topsoil until the cup is half full.
8. Put the larger cup inside the smaller cup. Put a toothpick between the cups so that the air can escape from the bottom cup.
9. Pour some of the grape Kool-aid into the top cup.
10. Observe: What color is the Kool-aid that goes into the cup? What color is the water that collects in the bottom cup?
11. Answer the questions below.
12. If time allows, create your own experiment using other food coloring in water and redoing the steps above. Explain what color you chose, why you chose that color, and your results.

Questions:

1. Is the water in the bottom cup the same color for both the sand and topsoil?
2. Explain the reasons why you answered yes or no to the question above.
3. Soil naturally filters water that falls as rain and goes into rivers. Why is this important to us as humans?
4. What did the grape Kool-aid represent in the lab?
5. How can the information gained and observed in this lab be applied to real life? What places or situations would you see this technique used?