Filtering Pollutants

**Introduction:** Soil is important due to its ability to physically and chemically filter impurities out of water. Soil has a significant role of purifying our drinking water.

**Purpose:** How are pollutants filtered in soil?

**Hypothesis 1 (dirty water):**

**Hypothesis 2 (Sand only with Grape Kool Aid):**

**Hypothesis 3 (Sand with topsoil with Grape Kool Aid):**

**Materials**: 3-5 oz paper cup, 3-3 oz paper cup, sand, topsoil, grape Kool Aid, dirty water, toothpicks plus 3 other soils.

Procedure:

1. Using a nail, poke several holes in the bottom of each 5 oz. cups.
2. Fill up two 5 oz cup about half full with sand
3. Fill the third 5 oz cup with a layer of sand about the width of your pointer finger, then add topsoil until the cup is half-full.
4. Place the 5 oz cups inside the 3 oz cup. Put a toothpick between the cups so air can escape from the bottom.
5. In one of the cups filled half full with sand pour 50 ml the “dirty water” (pollutant).
6. Record your observations in a chart. What happens to the things floating in the water? What color is the water in and the water out?
7. In the other cup filled half full with sand pour 50 ml the “grape Kool Aid” (pollutant)
8. Record your observations in a chart/table. What color was Kool Aid that you poured into cup? What color is the water that collects in the bottom cup?
9. In the third cup, with sand and topsoil, pour 50 mL the “grape Kool Aid” (pollutant)
10. Record your observations in a chart/table. What color was Kool Aid that you poured into cup? What color is the water that collects in the bottom cup?
11. Select three other soils and repeat experimental steps, record your results in your chart/table. What color was poured in and what color is water you collected in bottom cup?
12. How can you best represent/visualize your results for the reader? Do so in your write up!
13. Write an analysis of your results.
14. Record your bulleted conclusions.
15. How can you apply in real life what you have learned to how soil naturally filters water? In other words, what are some specific reasons why the soils ability to filter water is important to other organisms?

NOTE: \*\*\*You collected your data as a team, but your results are written up individually.

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