Soil as a Filter Lab Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_ #

Earth’s Systems

**Question (Purpose)**: Does soil interact with polluted water that flows through it?

**Hypothesis:** I think that water with grape KoolAid that is poured through a soil mixture will:

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**Materials**:

Tray Grape KoolAid

Two five oz paper cups with small holes poked in the bottom. Water

Four 3 oz. paper cups A measuring vial

Sand 2 toothpicks

Soil mix (includes clay, soil and compost) Paper towels

**Procedures**:

ALWAYS KEEP THE SOIL CUPS MATERIAL ON THE SCIENCE TRAY.

1. Put the bigger cups into the smaller cups, with a toothpick in between them to create space for air to escape as liquid goes in.

3. Set up the control by putting 2 and ½ vials of sand into one of the bigger cups.

4. Set up the soil sample cup by putting ½ vial of sand at the bottom of the cup.

Put 2 vials of soil on top of that.

5. Pour a vial of water through each cup. Wait for it to soak through the material and drip into the bottom cup.

6. Put the wet sand cup and the wet sand/soil cup into the two small clean cups.

7. 6. Label the cups that have liquid in them: Water through sand and Water through soil.

Write what the water in each cup you labeled looks like in the chart below (facts, not opinions):

|  |  |
| --- | --- |
| Water through Sand | Water through Soil |
|  |  |

7. Pour a vial of grape KoolAid through each cup. Wait for it to soak through the material and drip into the bottom cup.

8. Label the cups: KoolAid through Sand and KoolAid through soil

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9. Fill in the observation chart below.

Observations:

|  |  |  |  |
| --- | --- | --- | --- |
|  | KoolAid – Not filtered | KoolAid after poured through the sand | KoolAid after poured through the sand/soil mixture |
| Description of water  (Be sure to use observations, not opinions. Ex: color, texture, not “gross” or “cool” or “clean”) |  |  |  |

Conclusion:

When grape KoolAid is poured through soil, it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Why do you think this happened? (This is an opinion, or guess)

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How might this experiment relate to interactions in the real world?

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What ideas do you have for further research on this topic?

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