

Name _____

Date _____

Water Filtration Activity: What dirt cleans water?

Believe it or not but some types of soils help to clean out our water in the ground! Today we will look at different types of sand, soils, and other materials that are found in nature and try to figure out which ones do the job.

Step 1: Observe the materials by themselves and think about how they may or may not help to filter water.

Write your observations and thoughts below.

Sand:

Gravel:

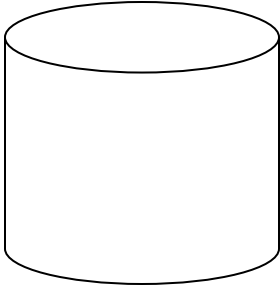
Mixed Soil:

Charcoal:

Vermiculite:

Step 2: Discuss with the group the types of materials you need to filter paint out of water.

Draw the cup with the materials in the order you think would work best below:



Step 3: Test it out!

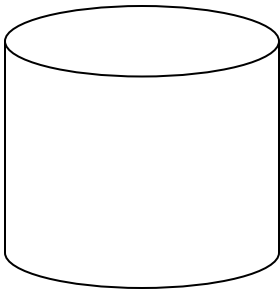
What happened?

Did it work or did it not?

Why do think it did or didn't work?

Step 4: Discuss with the group the types of materials you need to filter oils out of water.

Draw the cup with the materials in the order you think would work best below:



Step 5: Test it out!

What happened?

Did it work or did it not?

Why do think it did or didn't work?

What “Dirt” Cleans Water?

Class size: Up to 32 students

Time: 45 minutes

Objectives: Students will make connections between soils, rocks, the urban landscape and the quality of water in the underlying water shed.

SWBAT:

Materials:

Vermiculite

Charcoal

Sand

Mixed humus and soils

Gravel

Clear Plastic Cups

Water

Methylene blue

Vegetable Oil

Introduction:

Students should have already been introduced to some ideas about watersheds before performing this workshop. Discuss with the class about where rain water eventually ends up within your community. In NYC most of the rain water ends up within the sewer system as most of the land has impermeable surfaces. Unfortunately the water is not treated before making its way into the oceans and rivers. This means that all the motor

oils, gasoline, urine, feces and garbage we toss on the street is now floating in the water at our beaches. ICK!

Students will now explore different natural materials that may or may not help to filter out pollutants.

Activity: Think, Pair, Share

Students should spend several minutes discussing the materials before them and which ones would help clean out impurities in the water.

Challenge:

Each group should be given set-up to make two different filters.

One filter should just have food coloring in it the second should be made to filter out vegetable oil (hydrocarbon substitute)

Before they begin they should address ORPED and write down their process and discuss with the teacher or fellow before they begin construction.

Class discussion:

What worked? What did not work for the food coloring?

What worked and did not work for the vegetable oil?

How does this relate to New York City and the surrounding bodies of water and our “water shed”?