

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

## **"Mock Muck": A Water Treatment Simulation**

**Objective** The "Mock Muck" activity will simulate the water treatment and purification process. The purpose of this activity is to purify a sample of foul smelling water, producing as much "clean" water as possible. Your cooperative learning group will compete against the other groups to produce the greatest amount of water (retained water from the original sample) as well as the cleanest sample of treated water in 25 minutes.

### **Materials**

3 cup sample of mock wastewater, 1 coffee filter,  $\frac{3}{4}$  cup of sand, 1 charcoal brick, 2 empty containers, glass graduated cylinder

### **Procedure**

Work with the members of your cooperative learning groups to write a detailed procedure that tells how you will purify the foul water sample using only the materials provided. The three major techniques used should be oil -water separation, sand filtration, and charcoal absorption/filtration. **Remember, you should not test the purity of your water by drinking it!!!**

## Mock Muck Data Table

	Color	Clarity	Odor	Presence of Oil	Presence of solids	Volume (mL)
Before Treatment						
After Step 1						
After Step 2						
Final Sample of Treated Water						

### Results

1. What percent of the original foul water sample was recovered as "clean water"? \_\_\_\_\_ %

$$\% \text{ of water} = (\text{volume of purified water} / \text{volume of foul water}) \times 100\%$$

2. What volume of liquid did you lose during purification? \_\_\_\_\_ mL
3. Compare your purification system and data with those from the other cooperative learning groups by completing the data table below.

Group #	Volume of "Clean" Water (mL)	Clarity Ranking
1		
2		
3		
4		
5		
6		

## **Reflections**

In the space provided below, write a paragraph in which you reflect on your expectations and experiences purifying the polluted water sample. You might want to consider the following questions when writing your reflection.

- What did you learn about the purification process during the gallery walk?
- Which designs were most effective in purifying the water? Which designs were least effective? Explain why.

## **Research**

Select one of the following countries (Bangladesh, Ethiopia, Honduras, India, or Kenya) and visit the website <http://water.org> to learn more about the water crisis facing this country. Use your research to create an informational brochure to educate others about the plight of this nation. Your brochure should include the following information:

- A description of the physical location/geography of the country
- A description of the water crisis facing this country
- Any relevant statistical information
- A discussion of the water, health, and sanitation issues specific to this country
- 2-3 recommendations for improving the water and sanitation conditions in this country.