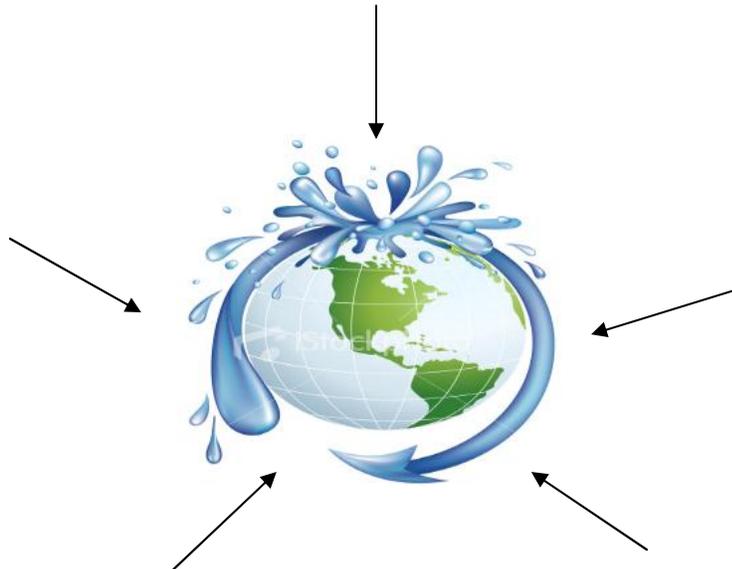


Name _____ Class _____ Date _____

A Global Water Crisis (Student Worksheet)

Do Now

Use the graphic organizer below to list chemicals or other items that are poured down the bathroom/kitchen drain or emptied into water sources such as lakes, streams, rivers, and groundwater.



A Global Water Crisis: Addressing the Issue

Read the article PUR and Simple by Stephen Fraser. This article addresses the issue of cleansing contaminated water around the world so that it becomes safe for human consumption. After reading the article test your understanding by answering these questions.

1. What are flocculants? How are they used to treat contaminated water?

2. Based on the article, what are 3 ways in which drinking water can become contaminated?
3. Explain why waterborne diseases are referred to as the "silent tsunami".
4. How might the widespread distribution of PUR packets affect the availability of clean drinking water worldwide?

Designing the Experiment

Gather in your cooperative learning groups to discuss your plans for the " **Mock Muck**" activity. In this activity you will simulate the water treatment and purification process by converting a sample of foul water into the "cleanest" water possible by using only the materials provided. The three major techniques that you should consider are oil-water separation, sand filtration, and charcoal absorption/filtration.

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

Experimental Design /Procedures

Think about how your group will use the given materials to design a purification/filtration system. Which of the 3 purification techniques will you use? How will you use the materials? How much of each material do you need? Should the materials be arranged in layers or can they be mixed? Should any of the materials be pre-moistened before using them? How will you determine whether or not your end product is clean (without drinking it!!!)? What key terms should you research to guide you in designing your purification/filtration system?