

# Water Treatment Fieldtrip Assignment

Name \_\_\_\_\_ Date: \_\_\_\_\_

## **Introduction**

Water is an integral part of life. Without it, life would not survive. We use water to drink, irrigate, bathe and have fun in. Living in the United States, when we turn on the water faucet, we expect water to flow. Not only do we expect water to flow; we expect that water to be clean and tasty too. So often, we turn on the faucet and use the water without thinking about the miraculous trip that each drop of water has taken to get to that faucet.

In this fieldtrip, you will apply your knowledge of how water has made a trip through the hydrologic cycle, the types of source water that is available, and how we mimic the purification processes by the use of mechanical and chemical applications.

## **Define the following terms:**

1. Anaerobic:
2. Aerobic:
  
3. How do the terms above apply to water treatment?
  
4. List five major contaminants of water that are filtered out by water treatment plants.
  - A. \_\_\_\_\_
  - B. \_\_\_\_\_
  - C. \_\_\_\_\_
  - D. \_\_\_\_\_
  - E. \_\_\_\_\_
  
5. Which of the contaminants is most difficult to remove? How must the treatment plant remove the contaminant?
  
6. Which of the contaminants are the most predominant?

## **Treatment Steps**

7. How much water does this plant treat? To what level does it treat the water? Where does the treated water go?
  
  
  
  
  
  
  
  
  
  
8. Describe generally describe what occurs in each step.  
**Primary:**

**Secondary:**

**Tertiary:**

9. For each of the following terms:
- Define/describe the process
  - Describe where this occurs in wastewater treatment

**Coagulation and Flocculation**

**Sedimentation**

**Detention Time**

**Disinfection** (Describe some of the microbes for which water is treated, Describe the process of chlorination).

***Water Quality***

11. How often is the water quality tested?
12. What legislation helps regulate the quality of water? Explain.

***Sustainability***

13. Describe how this treatment plant strives towards being environmentally friendly (energy, leftover sludge, etc.).

***Reflection:***

What did you find the most interesting? Any info disconcerting? Why or why not? Did you enjoy this fieldtrip? Other than the odor, how could it be improved? What are some drawbacks to using chlorine and what are some alternatives to chlorine?