

## Be A Water Treatment Officer

1. **Introductions**
2. **Question students about their knowledge of where water comes from. Introduce the word aquifer - explain groundwater versus surface. USE AQUIFER VISUAL**
3. **Break students into groups if necessary**
4. **Introduce topic - keep it short and sweet: Water is treated before we are able to drink it. They will learn how to treat the water.**

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7. **AERATION POSTER (you are building the water treatment process with the series of posters) Aeration is the process of spraying water into the air releasing trapped gases, allowing oxygen to be absorbed**
8. **Demonstrate pouring**
9. **CHEMICAL ADDITION (Alum) AND COAGULATION POSTERS CONNECTED TO THE OTHERS - Add ½ teaspoon of alum, stir, remove spoon and leave alone. Explain: Chemicals are added to bind small dirt particles together (coagulation). The larger particles are called floc (floc settles to the bottom)**

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5. **Students “memorize” work stations**
6. **WATER SOURCE POSTER - All water comes from a source. Large items are screened at the intake. With an aquifer, the soil does the screening. Sometimes very little treatment is needed with groundwater.**

**You and the teacher fill student cups with (slightly) muddy water.**

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10. **SEDIMENTATION AND FILTRATION POSTERS CONNECTED TO OTHERS - water and floc move into sedimentation tank, floc settles to the bottom**
11. **Construct filter - Styrofoam cup & 2x2 paper towel + 2 heaping teaspoons gravel + 2 heaping teaspoons sand**
12. **Hold cup over “Clean” cup and slowly pour only water into filter. Explain: Filters are made of sand, gravel and charcoal, much like this one just constructed**

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**13. CHEMICAL ADDITION (chlorine and fluorine) and STORAGE POSTERS CONNECTED TO OTHERS.**

**Explain that chlorine kills germs. Add 2 drops. DO NOT PASS DROPPER - set it on work station. Explain: At a real water treatment plant water is clean enough to drink.**

**Explain: Storage tanks allow chlorine and fluorine to mix with water**

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**14. DISTRIBUTION POSTER - Final poster in the set. Explain**

**from storage to water tower to homes & business.**

**15. Discard filter, pick up clean cup, use clean water to rinse spoon. Empty all water into water source. Wipe out clean cup**

**16. Compliment behavior, thank everyone for coming and answer any questions students may have, hand out badges**

**17. Prepare posters for next session**