



Water filter

STEAM Train Experiment Instructions

PREPARE

Location: Room E133

Materials for the cart: scoop the items from the large bucket into the small containers on the steam cart before each class.

- 1 Water bottle cut into half
- Sand
- cup pebbles
- cup dirt
- 1 Paper towel
- Polluted water

Experiment Process:

1. You will stuff one paper towel into the water bottle to plug up the mouthpiece
2. Set the mouthpiece of the water bottle upside down into the bottom half of the water bottle.

begin creating layers with the materials

3. Add about an inch of pebbles into the water bottle onto the stuffed paper towel
4. Next add about an inch of pebbles
5. Over the pebbles add about an inch of dirt
6. Then pour about an inch of sand over the dirt. Be sure not to fill up to the top. Leave room to pour in polluted water.
7. Once the layers have been added pour the polluted water slowly over the sand and allow it to filter through the layers.

Location: Classroom

1. Position the cart in front of the kids so that they all have a view of the top shelf.

PRESENT THE EXPERIMENT

1. Present the polluted water to the students. Show them how yucky it is. Swish it around
2. **Ask** the students to make a prediction or hypothesis.....is it possible to turn the polluted water into clean usable water?
3. Begin creating the water bottle starting with the paper towel and continue adding the layers one at a time.
4. While creating the layers explain to the students how each layer represents layers of the earth which naturally filter water as it seeps into the ground.
5. Once the polluted water has filtered through Ask a few questions:
 - How does the water in the bottom appear?
 - What happened to the glitter and debris that was in the polluted water?
 - Do a side by side comparison of the filtered water to the original polluted water.
 - Why do we need clean usable water?

How the Filter Works

Each layer of the homemade water filter has a purpose. Gravel or small stones are used to filter out large sediments, like leaves or insects, whereas sand is used to remove fine impurities



Clean up: dump the water bottle contents into the 5 gallon bucket including the polluted water solution. Throw away the water bottle. Thank you for participating in the STEAM train activity!! You did an awesome JOB!

