Creating a water filter experiment for SEEd 5.1.5

This experiment shows that we can come up with a solution to mitigate situations that cannot be prevented. Specifically, we are going to focus on filtering contaminated water caused by natural disasters, specifically those prone to the Utah region. (floods, earthquakes or landslides, and wildfires) This experiment also allows students to collect, compare, and reason with scientific data to attempt to draw a conclusion of how the world works.

Supplies required:

Supplies	Acquired from	Special recommendations
2 Liter bottle	Student provided	
Cotton/coffee filter	Walmart	Cotton balls or coffee filters are easy to use
Charcoal	Home Depot	Crush into a fine powder prior to experiment
Sand/Fine dirt	Home Depot or collected	
Gravel	Home Depot or Collected	
Soda or other liquid to filter	Walmart	Easiest to just use root beer or red cream soda. It is suggested to group students in 3 so at most 12 cans are required
Collection cup	Walmart	Red solo cup works great
Measuring cup	Walmart	Used to measure start/final volumes of liquid. Can double as the collection cup if desired.
Scissors or knife		Used to cut off bottom of bottle. Suggested that the teacher do this part for the students for safety.

Feel free to alter supplies list to fit classroom needs.

Procedure:

1. Hand out assignment sheet and have students fill out the introduction as the video is playing.
2. Give each group the required supplies to build the filter (bottle, cotton, charcoal, sand, and gravel)
3. Have the students create the filters, following steps laid out in part 2 “plan and carry out”
4. Give students the soda or other liquid and have them record observations in the table in part three “Collect Data”
5. Filter the liquid into the collection cup, allow 15 minutes for filtration.
6. Have students record observations on the filtered liquid in the after column of the table.
7. After completion of the experiment, have students answer questions from parts 4 and 5, “Analyze data” and “Explain”

Safety

This lab is not dangerous but be careful allowing kids to cut the bottles themselves or do it for them. Do not allow children to taste any water to be filtered unless you have elected to use soda as your “dirty water”

To dispose of the filter, simply throw the filter in the garbage and clean up any messes that may have been made. The rocks and sand can be returned outside if desired and the 2 Liter bottle can be recycled.

Answer Key:

1. Wildfire
2. Charcoal
3. Cotton
4. Gravel
5. Sand
6. Earthquake
7. Flood

Citations:

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