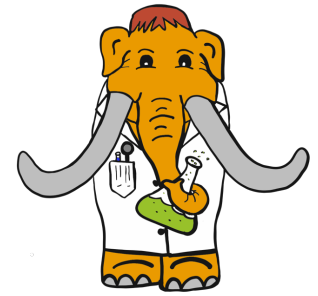


Science Saturday @ Home

Designing a Water Filter



Gathering Supplies:

- | | | |
|---|---------------|--------------|
| 1 liter bottle or soda bottle | Dirty Water | |
| Paper | Scissors | Paper Towels |
| Gravel | Cotton Balls | Rubber Band |
| Sand | Coffee Filter | Pencil |
| Water Filter Activity Printout (Optional) | | |

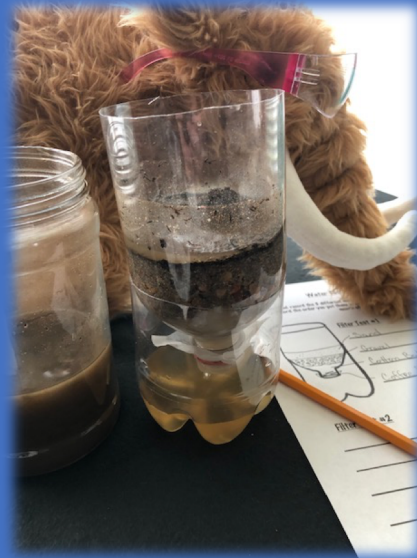
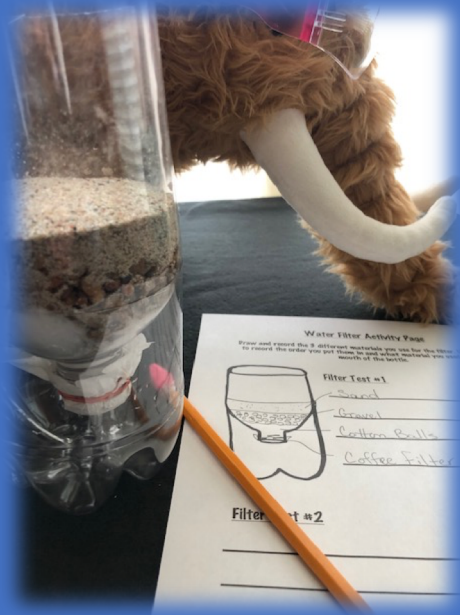
How To Steps:

For this activity have an adult cut your plastic bottle in half. The top half will be for layering your filter material. The bottom half will be for collecting the water as it goes through the filter. See the next page for a picture. For an easier time cutting the bottle, keep the lid on.

1. Think about what materials you have. As water passes through them would the material be able to catch dirt or soil particles from the water?
2. Pick three different materials to layer in your filter. Start by putting a coffee filter, paper or a paper towel piece around the mouth of the bottle with a rubber band. Then layer the other material in your filter.
3. Place the mouth of the bottle upside down so it rests in the bottom half of the bottle. Make sure they can stand on their own.
4. To create dirty water you can add some soil, coffee grounds, and/or oil to about 2 cups of water.
5. Slowly pour about half of your dirty water into your filter. Watch as the water goes through the filter and collects in the other container. How does your filtered water compare to your dirty water? Do you see a color change?
6. Looking at your filter can you tell which filter materials worked together to catch material from the dirty water?
7. Keep track of the order that you put your filter material in and try again.
8. Compare what order of filter materials cleaned your dirty water the best.
9. Remember do not drink this water! This is a simple version of a more complex water system that makes our water safe to drink.

Please remember when you are done, don't waste the water! Water a plant or if there is dish detergent in the water use it to wash dishes!

Filtering Water with Max



Did You Know?

Hydrologists are scientists that study how water interacts with the earth's crust. Groundwater Hydrogeologists study the water below earth's surface. Surface water hydrologists study lakes and glaciers. They use their knowledge to solve problems pertaining to water quality and availability.

Layers of rock, sand, and gravel are some of the ways the Earth filters and cleans water over time. The water cycle process is also a way of nature cleaning its water supply.