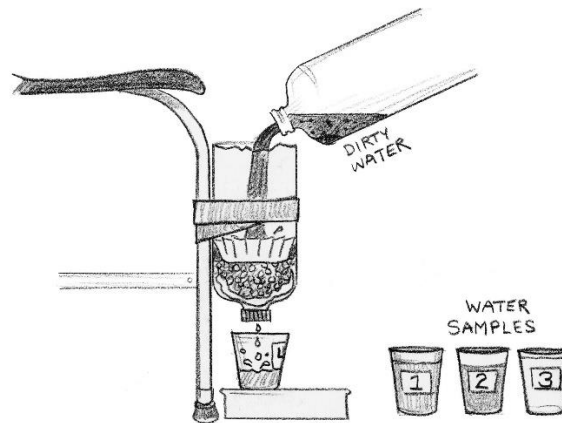


Fun Science Challenge!

Who can design the best water filter?



Materials	Steps
<ul style="list-style-type: none"> - Dirt - Water - Container to mix dirty water - Flowerpot with drainage hole in the bottom, used carton/liter bottle (milk or orange juice cartons, used soda bottles, etc.), or cup (see photos above) - Container for filtered water to flow into - Rocks, pebbles, and/or gravel of varying sizes - The following are all optional, but you should have at least 4-5 options available in addition to rocks/gravel: coffee filters, sand, different types of cloth, cotton balls, activated charcoal, mesh screens, sponges, - Get creative! Let your kids come up with more materials that may work - Rubber bands or elastic bands 	<ol style="list-style-type: none"> 1. If using a carton or plastic bottle as seen in the middle photo, have an adult cut the bottom of the carton off, leaving the top intact and lid removed. If using a cup, have an adult cut a dime-sized hole in the bottom of the cup 2. Have kids help make dirty water by mixing water, dirt, soil, leaves, and twigs. Have kids write down the ingredients used and their sight and smell (not taste) observations about the solution as it changes 3. Mix the dirty water thoroughly. It is best to let the mixture rest for a few hours, but not necessary. If you allow it to rest, re-stir before using 4. Set up a filtration station for each kid including a container used to make the filter (flower pot, carton/bottle, cup) and a container for the water to filter into (pitcher, cup, bowl) as seen in the photos above 5. Set out all potential filter materials: gravel/pebbles/rocks of varying sizes, sand, coffee filters, different types of cloth, cotton balls, activated charcoal, mesh screens, sponges, etc. 6. Allow each kid to pick out materials they will use for their filter 7. Have kids draw their plans for the filters demonstrating the order of the chosen materials in layers in the order they think would work best to filter water. Have them label each layer 8. Instruct them to then create those layers out of the materials in their filtration containers 9. Have an adult pour an equal amount of filtered water into each finished filter, making sure there is a container below the filter to collect water 10. Wait until all of the water has been filtered through. Filter time is variable 11. Compare filtered water, discuss what filter materials were successful and which were less successful 12. Make observations using sight and smell about the cleanliness of the filtered water. Compare this water to your tap water and to the dirty water you made <p>For more detailed instructions and ways to incorporate more learning objectives visit: https://www.teachengineering.org/activities/view/cub_enviro_lesson06_activity2</p>