

MAKE YOUR OWN AQUIFER!



WHAT YOU'LL NEED:

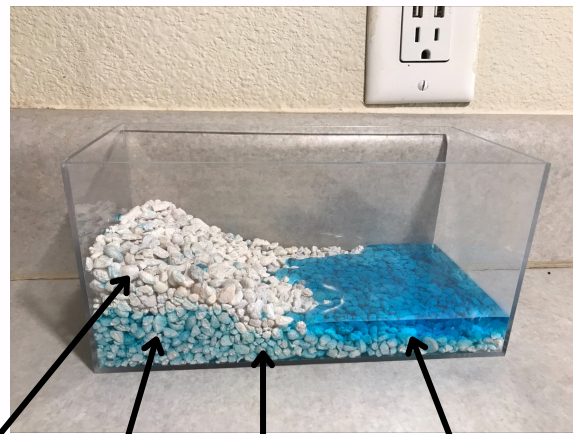
- A SMALL TANK OR TERRARIUM
- BLUE FOOD DYE
- YELLOW FOOD DYE
- SMALL ROCKS OR AQUARIUM GRAVEL
- A SYRINGE (HIGH CAPACITY WELL)
- PLASTIC TUBE
- A SOAP PUMP (LOW CAPACITY WELL)
- SOME NYLON OR GAUZE
- 2 RUBBER BANDS
- 3 CLEAR PLASTIC CUPS
- SOME COFFEE FILTERS
- ACTIVATED CHARCOAL

1 BUILDING YOUR AQUIFER

Fill the tank with gravel, & make a hill on one side. Fill one of the clear cups with water, & add a few drops of blue food coloring. Pour it into one corner of the tank.

Groundwater travels throughout the spaces in the underground sediment.

The top of the area covered in water is called the water table. It separates the saturated and unsaturated zone.



unsaturated zone
groundwater
saturated zone
surface water



pump
casing
screen

2 PUMPING THE WATER

Get a soap pump or syringe and plastic tube, and connect the two together. Tie a piece of gauze or nylon to the end of the tube with a rubber band. Make sure to insert the tube well below the saturated zone in the groundwater side, and begin pumping!

The well pump (syringe) pulls the water out of the ground.

The casing (tube) creates a straight path for the water to move towards the pump, and the well screen (nylon) prevents sediment from being carried up with the water.

3 CONTAMINATION AND TREATMENT

Contaminants that make their way into the groundwater don't just stay in one area.

Create a valley with your gravel. Fill a cup with water, & add some yellow dye- this is your contaminant. Pour it into one side of the "valley" to watch how it spreads.

To treat your water, put the "contaminated" water into a small cup filled with activated charcoal, and put a coffee filter over the lid with a rubber band. Let it sit for about 30 seconds. The dye will stick to the charcoal, and your water should come out clean!



A carbon filter is just one way we remove contaminants from water. Others include boiling or disinfection.