

Choice

Water Fountain

During the 1st century AD, Hero of Alexandria created a fountain that used air pressure to make water flow uphill. Using principles he discovered, students will create a fountain that spurts up inside a bottle. Turn the bottle to see the fountain spring up again and again. Although the fountain needs to be turned to keep going, it is still a great illustration of how life-giving true ideas from the Word bless our minds again and again.

Note: Larger bottles produce a more dramatic fountain because of increased water volume and air pressure. We recommend trying to obtain larger bottles if possible.

1. Watch video directions with the class.
2. Give each student the supplies needed to make a fountain and a copy of the *Water Fountain Instructions* (p. 2).
3. Encourage students to use care and take time to complete steps 5-10 of the *Instructions*. Being too hasty may result in the fountain not working because the straws are blocked, or leaking because the bottles are not completely sealed.
4. If a project leaks, remove the duct tape and use a new piece of duct tape to try making a good seal again. Drying the top of the bottle and plasticine may also help.



Video Online

See how to construct this project at https://www.newchurchvineyard.org/resource/video-water-bottle-fountain/

Materials Needed for Each Student

Water Fountain Instructions p. 2, plastic bottles (2 liter bottles work best; larger sized personal water bottles also work), two-four drinking straws, plasticine, tape, 18" (45cm) duct tape, sharp pin or needle, chopstick or larger sized knitting needle, scissors, water, paper towels

Prepare in Advance

Watch the video listed above to see how the project is constructed. Collect bottles and other materials.

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Water Fountain Instructions



See video directions at https://www.newchurchvineyard.org/resource/video-water-bottle-fountain/

"Whoever drinks of the water that I shall give him will never thirst.… The water that I shall give him will become in him a fountain of water springing up into everlasting life" (John 4:14).

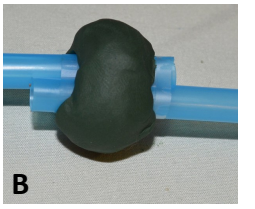
During the 1st century AD a Greek named Hero of Alexander designed a fountain using air pressure to make water flow uphill. Using these principles, make a fountain that spurts up inside a bottle.

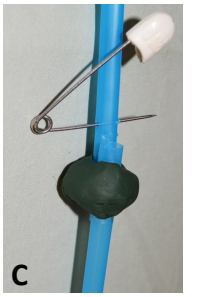
Supplies Needed

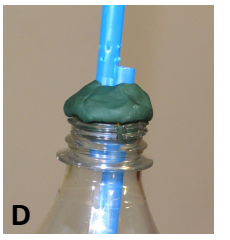
2 plastic bottles (larger bottles work best), 2-4 plastic straws, tape, plasticine, 18" (45 cm) duct tape, a sharp pin or needle, chopstick or knitting needle, scissors, water, paper towels.

1. Fill one of the bottles ⅔ full with water.
2. If using larger bottles create 2 longer straws out of 4 by inserting the end of one straw into the other. Put tape over the joint.
3. Arrange the straws next to each other with ends overlapping about 1.5" (4 cm) as shown at right in picture **A**. Tape together being careful not to crush the straws.
4. *Note:* Take time to do the next steps with care. Otherwise your fountain may not work.
5. Form plasticine into a "snake". Wrap the plasticine around the straws at the join as shown at right in picture **B**. The goal is to use the plasticine as a stopper between the bottles once they are connected. Be careful not to crush the straws. Insert a chopstick or knitting needle into the straw to keep the ends open, and remove the chopstick once you have enough plasticine to act as a stopper between the bottles.
6. Use a pin or needle to poke about 10 holes in the end of each straw, as shown at right in picture **C**.
7. Insert one of the straws into the empty bottle. Adjust the length of the straw if needed by cutting it shorter with scissors. The fountain spurts best if the straw is about 1.5" (4 cm) from the top of the bottle.
8. Adjust plasticine so it fills the bottle's opening, as shown at right in picture **D**.
9. Pick up the empty bottle with the straw in it, turn it over and put it on top of the bottle that is ⅔ full of water. Adjust plasticine to create a good seal and then add more plasticine on the outside of the bottle.
10. Wrap a 6" (15 cm) piece of duct tape around the join area. Reinforce the join with 2 additional strips of duct tape, above and below the first strip.
11. Turn the bottle over and enjoy your fountain.


A


B


C


D

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