



Craft Activity: Bottle Flipping Experiment

By Sticky Fingers Cooking®

Prep Time 5 / **Cook Time** / **Serves** -

Fun-Da-Mentals Kitchen Skills

craft: to plan and create objects from found or available items or ready-made patterns for purposes that are decorative, functional, or both.

hypothesize: to predict a possible outcome or result when performing a test or experiment.

experiment: to try out new ideas, recipes, ingredients, or combinations of ingredients when cooking; to perform scientific tests in a laboratory or in the field to discover or verify something.

Equipment

- Plastic flat-bottomed water bottles (3)
- Funnel

Ingredients

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- water
- food coloring, optional
- oil (vegetable, canola, olive, etc.)
- syrup (corn syrup, maple syrup, etc.)

Food Allergen Substitutions

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Instructions

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hypothesize

We are performing a science experiment with this craft activity. You will see these science words: hypothesis, experiment, test, and result. A hypothesis is an educated guess or prediction as to what might happen when an experiment is done. Before completing the experiment, hypothesize or predict which bottle and its liquid you think will flip the easiest or the best, and why.

fill + water

Using the funnel, fill one of the water bottles with water, about 1/4 full. (Optionally, add food coloring to the water for a fun twist and to see how the water moves when flipping.) Close the cap tightly.

fill + oil

Repeat Step 2, filling a bottle about 1/4 full with oil.

fill + syrup

Repeat Step 2, filling a bottle about 1/4 full with syrup.

experiment

Holding the water-filled bottle at its neck, lightly flick your wrist upwards as you let the bottle go. Can you get it to land on its bottom? Then, run the test again using the maple syrup and oil-filled bottles.

results

What were the results of your experiment? Did one bottle flip more easily or better than another? Was your hypothesis correct?

test again

Try filling the bottles with more liquid or less liquid, or try both! Did anything change? Did different amounts of liquid make a difference?

science time

After your bottle flipping experiment, check out [The Science of Bottle Flipping](#) below to explain the science behind your results.

Featured Ingredient: Water!

Hi! I'm Water!

"I don't like to brag, but I'm pretty spectacular. In fact, you couldn't live without me! Just take two hydrogen atoms and one oxygen atom, or H₂O, and voila! You've got a clear, odorless, tasteless liquid vital to all living things! I can be quite bubbly or very still. I fill drinking glasses, clouds, bathtubs, pools, lakes, rivers,

and oceans, and I'm lots of fun if you have a boat (toy or real-life size), pool floats, water skis, or scuba gear!"

Around 60 percent of the human body is water. It comprises about 71 percent of the Earth's surface, and oceans contain about 96.5 percent of its water.

Clouds are masses of condensed water vapor floating in the sky. They are made up of tiny water droplets or frozen crystals. When they combine and become too large and heavy to remain suspended, they fall to the ground as rain or snow.

Water can exist as a gas (water vapor), liquid, or solid. Water vapor or "steam" happens through evaporation when water molecules are warmed by a heat source like a stove or the sun, move rapidly apart, and escape into the air. You can see steam rise from a pot of boiling water on the stove or from a swimming pool when cold water is heated by the sun.

When water freezes, it becomes a solid we call "ice." Water molecules slow down and get closer, organizing themselves into a fixed position. Ice forms at temperatures at or below zero degrees Celsius or 32 degrees Fahrenheit.

Liquid water is used in cooking to boil or poach foods like eggs, rice, vegetables, and meat. Steam can also cook some of these same foods and keep more of the nutrients in vegetables from being lost in the cooking water.

Iced is used in cooking as an ice bath to freshen and crisp up raw vegetables and quickly stop the continued cooking of eggs or vegetables. Putting hard-boiled eggs in ice water may make them easier to peel. Ice cubes help remove fat from gravy and soup and keep cold food fresher for a longer time. Adding an ice cube or two to the top of cooked rice before reheating it in the microwave will add moisture and make it come out softer and fluffier. Last but not least, ice is essential in creating ice cream!