

Summer Science Activity: Make-Your-Own Popsicles

Materials:

- Paper cups or recycled yogurt containers
 - Popsicle sticks (new or recycled)
 - Scotch® Magic™ Tape or Scotch® Masking Tape
 - Juice, water and other ingredients (see recipes below)
-

Procedure:

- Make one of the popsicle recipes below and pour the mixture into paper cups. Fill the cups $\frac{3}{4}$ of the way so they don't spill.
 - Figure out the most efficient way to secure the popsicle stick in place. Try one of the following ideas, or come up with your own:
 - Cut 4 four-inch strips of tape for each popsicle. Place two parallel strips of tape in each direction, leaving a slit in the middle for the stick.
 - Cut one long piece of masking tape. Use scissors to make a popsicle-stick-size slit in the middle, wrap it around the cup from top to bottom, and stick the stick in the top.
 - Use an empty cup to trace circles in index cards or construction paper. Cut out the circles, fold them in half, make a small slit with scissors in the center of the fold. Tape the circles securely to the top of the cups and insert a popsicle stick in each slit.
 - What other ways can you think of to secure the stick in place?
-

Recipe Ideas:

- Chunks of watermelon (remove seeds first) pureed in a blender
- Plain water with a few berries or chunks of fruit tossed in
- Your favorite flavored yogurt
- Vanilla pudding with sliced bananas
- Different combinations of juice: orange and pineapple, pineapple and coconut milk, etc.
- Root beer
- Flavored Gelatin (make according to directions but pour into cups before it sets)
- Make up your own!



Design Your Own Popsicle Experiment

At what temperature do popsicles freeze? Many people would automatically answer “32 degrees Fahrenheit!” (or “0 Celsius” if they’re from Canada or from a family of scientists). But that is the freezing point of pure water, and different solutions have different freezing points.

So what is the freezing point of popsicles? Or does it depend on the ingredients? Design an experiment to test the freezing point of different solutions. You can test different ingredients, and also different concentrations of that ingredient mixed with water. Formulate a hypothesis, and be sure to have a control for each experiment (such as pure water).

Here are some ideas:

- Water vs. grape juice
- Water vs. 50% grape juice + 50% water
- Water vs. 25% grape juice + 75% water
- Grape juice vs. grape flavored Kool-aid

Line up your cups in the freezer so they’re easily visible. Leave them for a half hour, then check every 15 minutes after that. See which cup freezes first, second, third, etc.

For more resources, visit www.discoveryeducation.com/sciencefaircentral.

