Will It Dissolve?

Estimated Time: 35 – 45 minutes

SUMMARY
In this experiment, students will discover that some substances dissolve in water and some do not. They will make predictions.

WHAT YOU'LL LEARN

- When a substance "dissolves," it becomes part of a liquid so that the substance cannot be seen.
- Sugar and salt will dissolve in water, but cornstarch will not.
- It is easier to dissolve most things in warm water than cold water.

Materials Used	
● Transparent cups (3) ● Sugar ● Salt ● Cornstarch	● Water ● Spoons or straws for stirring ● Magnifying glasses (optional) ● Paper and pencils for notes

WHAT TO DO

1. Before starting the experiment, ask the student what "dissolve" means and how you can know that something is dissolving. Consider a "parking lot" for ideas that come up in this discussion. You can use a piece of paper or marker board to write down the student's ideas. To help this discussion, demonstrate dissolving by adding a teaspoon of salt to a full glass of water and show that it disappears from view.
2. Add small samples of salt, sugar, and cornstarch, about a teaspoon's worth, and add them to water. Note differences (possibly with a magnifying glass) and make predictions about whether each will dissolve.
3. Add 1 cup of cool water to a cup and then add ½ teaspoon of salt to the water. Stir until no more salt dissolves (this is known as the saturation point). Continue to add ½ teaspoons of salt to the water until the salt no longer dissolves in the water (the granules of salt will remain intact and visible at the bottom of the cup). Make sure to record the amount of salt you were able to add to the water until it no longer dissolves or reaches its saturation point.
4. Repeat step 3 using sugar and cornstarch. Which substance dissolves the most completely water? Which dissolves the least?
5. Empty the cups and wash them out, then repeat steps 3 and 4 with *warm or hot* water. Does more of a substance dissolve or less? Does it happen faster or slower?
6. Revisit your "parking lot" of ideas to see if you want to add any additional questions about dissolving or water. If age-appropriate, add some rules for how to use water temperature to predict how much and how quickly something will dissolve.

TIPS

- The “parking lot” of ideas is a great way to come up with ideas for future activities. Are there other substances around the house that the student might want to try to dissolve in water like flour, baking soda, or glitter?
- It helps to place the clear cup on a dark surface, like black construction paper. This helps students see whether there are any particles left at the bottom of the cup.
- If the “hot” tap water available isn’t hot enough, consider filling a glass of water and heating it up in the microwave.