

ABSORPTION PROPERTIES

Test the properties of different materials to see which ones absorb water and which protect the sugar cubes from dissolving.

INSTRUCTIONS:

STEP 1: Predict which materials will best prevent the sugar cube from dissolving and write down your predictions.

STEP 2: Place a sugar cube into each cup.

STEP 3: Cut a square from each material and place them over each sugar cube to test how well it protects the cube from dissolving.

STEP 4: Use an eyedropper or spoon to add water to the material. Ensure the water doesn't touch the sugar cube directly.

STEP 5: Watch and record how the water interacts with each material.

Materials

Sugar cubes

Small cups

Water

Eyedropper

Scissors

Various materials
(cotton, coffee
filter, foil)

THE SCIENCE

Materials that are absorbent, like paper towels or sponges, have tiny spaces, or pores, that allow water to soak into them. This happens because water molecules are attracted to the fibers in these materials, spreading throughout the pores. On the other hand, materials like plastic wrap and aluminum foil

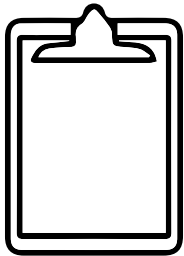
are water-resistant because they don't have pores or absorbent fibers, so water stays on the surface and doesn't soak through. When testing these materials with sugar cubes, absorbent materials let water reach the cube, causing it to dissolve.

Water-resistant materials keep water away, protecting the cube from dissolving.



Absorption Properties Observations

Use this worksheet to process and evaluate your work.



RECORD

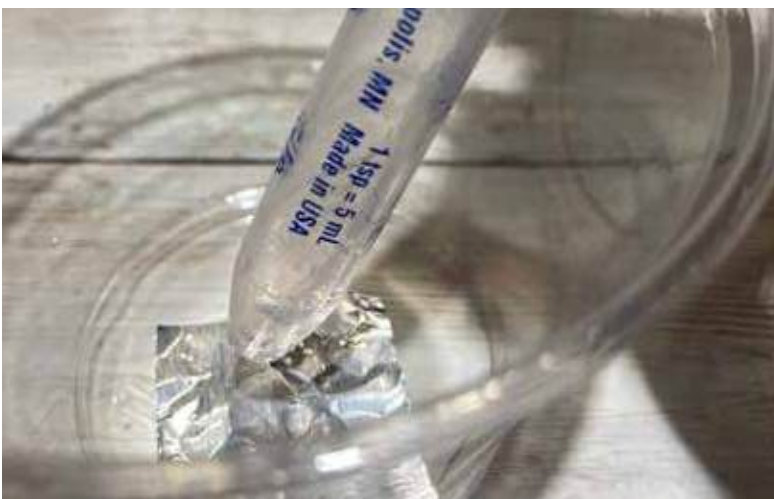
Which material do you think will protect the sugar cube the best? Why?

What do you think will happen to each material when water is added?

Which material do you think will absorb the most water? Why?

What happened when you add water to each material?

Which material did the best job of keeping the sugar cube dry?



DISSOLVING SUGAR

Introduce students to basic scientific observation through hands-on play with this simple experiment using sugar cubes!

INSTRUCTIONS:

STEP 1: Stack 2-3 sugar cubes in a shallow dish.

STEP 2: Using an eyedropper, carefully add water mixed with food coloring just enough to touch the bottom of the sugar cube stack.

STEP 3: Observe how the water travels upward through the sugar cubes.

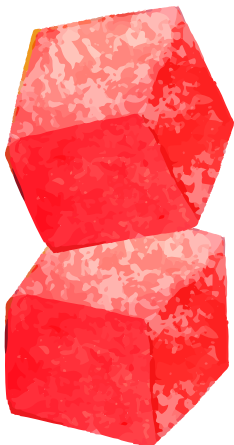
Materials

Sugar cubes
Shallow dish
Water
Eyedropper
Food coloring



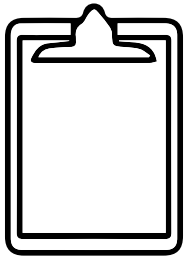
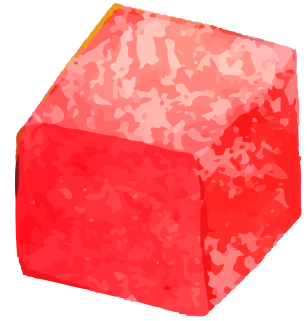
THE SCIENCE

In the colored water dissolving sugar cubes experiment, the science is about how things mix together. When a sugar cube is dropped into water, the water molecules bump into the sugar and break it apart, making the sugar spread out and disappear into the water. The color in the water helps us see how the sugar spreads. Warmer water can make this happen faster because the water molecules are moving more quickly. This experiment shows how dissolving works, which is when a solid mixes into a liquid and disappears.



Dissolving Sugar Cube Observations

Use this worksheet to process and evaluate your work.



RECORD

What do you notice happening to the sugar cubes?

How quickly does the water move up?

How are the cubes changing as they absorb the water?

What would be different if you had used clear water?

What did you learn about liquids dissolving solids?

