



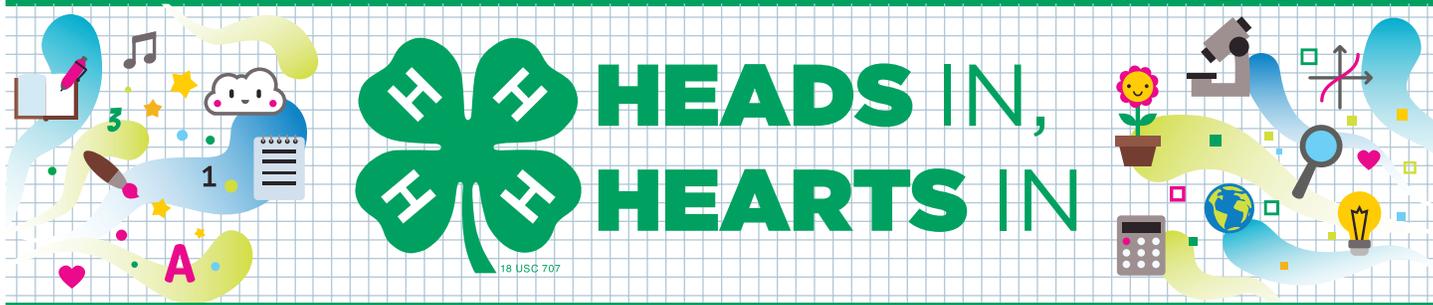
## Supplies

- ❑ “Guide for Families” handout
- ❑ Clear plastic standup display (optional)
- ❑ 2 small bowls
- ❑ Two 1-gallon containers of water
- ❑ 2 different colors of liquid food coloring
- ❑ 10–15 boxes of sugar cubes
- ❑ Aluminum foil, ripped in pieces approximately 2 inches by 2 inches (1 per participant)
- ❑ Display table

## Activity Preparation

- ▶ Purchase or locate items on supply list.
- ▶ Print one copy of the “Guide for Families” handout. Laminate or place in a clear plastic standup display to allow participants to see it more readily.
- ▶ Color the water in each of the gallon containers a different color using the liquid food coloring.
- ▶ Set up the display table and arrange needed supplies.





# Fun With Sugar Cubes

## Guide for Families

### Learning Objectives

#### What you need to know:

Did you ever wonder why sugar dissolves in water? Sugar dissolves because water molecules are polar. A molecule happens when two or more atoms join together. Water is made up of atoms of hydrogen and oxygen. A water molecule can break the bonds that hold together sugar molecules.

#### What you will do and learn:

You will explore some unique characteristics of water.

### Instructions

1. To one small bowl, add some colored water and to the other small bowl, add some water of a different color. Add just enough to fill the bottom of the bowl.
2. Get 6 sugar cubes. Three for each bowl.
3. Don't do it yet, but in one bowl, you will stack three sugar cubes on top of each other. In the other bowl, you will also stack three sugar cubes on top of each other, but in this second bowl, you will put a small piece of foil in between the bottom cube and the two stacked on top of it.
4. Discuss and predict:
  - When each stack is placed in the colored water, what do you think will happen?
  - Will one dissolve faster than the other? Which one? Why?
5. Now do the experiment by following the instructions in point number 3.
6. Think about why the cubes dissolved differently.

Water is absorbed by the sugar cubes and you can see the colored water rising through the sugar. When there is no barrier to prevent the water from being absorbed, the water weakens the sugar cube and the cubes fall. By placing the piece of foil in between the layers of sugar cubes, the water cannot go through and just weakens the bottom sugar cube. However, because the bottom sugar cube is weak, the entire stack of cubes will still fall.