

## SCIENCE FESTIVAL FACILITATOR'S GUIDE



### Strange Acting Goop

#### BEFORE THE EVENT

#### 1. Make sure you have the materials you need.

- Plastic table cover and paper towels to wipe up spills
- Cornstarch
- Bowls (one for each student-adult pair)
- Pitchers of water
- Plastic spoons for mixing (one for each student-adult pair)
- Plastic cups (around 5 oz.)

#### 2. Watch this video on your smartphone:

<https://www.youtube.com/watch?v=idCFb3DqWkk>

#### 3. Prepare your station.

- Cover your table with plastic to protect it from spills.
- Fill a pitcher with warm water. (You or a helper will probably need to do this several times throughout the evening.)
- Distribute bowls and spoons for each student-adult pair. (You may need an assistant to help you clean and rinse bowls and spoons between groups.)
- Place shared cornstarch and water pitchers where they can be easily shared.
- Make sure to discard the goop in the trash can only. DO NOT POUR DOWN THE DRAIN, it will clog the sink.

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## DURING THE EVENT

### Questions to ask participants before they start:

- What do we know about liquids and solids?
- What are some examples?
- Can something be both a liquid and a solid?
- Let them brainstorm and share their ideas for a few minutes—remember, there are no wrong answers!

### Instructions:

Please read each set of instructions out loud. Make sure that you direct the correct person to complete each assigned task.

- **Adult:** Fill the plastic cup halfway with cornstarch and pour into the bowl. Fill a separate plastic cup a quarter of the way full with water and pour into the bowl.
- **Student:** Mix the cornstarch and the water well in the bowl.
- **Both:** Experiment with your goop!
  - Slowly dip your finger into the gooey mixture.
  - Grab some in your hand and pour it back into the bowl.
  - Slap it hard with your hand or a heavy spoon.
  - Grab some in your hand again and squeeze.

### How It Works:

The strange acting goop allows us to learn about molecules. When slapped quickly, the strange acting goop molecules, because they are all tangled up, prevent any splattering. In this way the mixture behaves more like a solid. When you slowly squeeze the mixture in your hand, the goop feels like a solid inside your hand, yet it slides out through your fingers back into the bowl. That's because the mixture now behaves more like a liquid. This concoction is an example of a suspension one of which is finely divided and dispersed in the other. In the case of this goop, it's a solid dispersed in a liquid.

### Vocabulary:

**Molecule:** The smallest particle of a substance, like a tiny building block.

**Suspension:** A mixture of solids and liquids that act like both states of matter.

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## Real-World Application:

This strange acting goop is very similar to how quicksand acts, if you move it in certain ways it sticks more than others. In solids, the molecules are tightly packed together and don't move around. This comes in handy when you need a solid chair to sit on! In liquids, molecules are still close together, but they move around more (much better for swimming!). What are some other examples of liquids and solids?

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