



Ooze

What is this stuff—solid or liquid?

Activity Guide

Try This!

1. Add two measures of cornstarch to the small bowl.
2. Add one measure of water to the bowl. (Optional: Add food coloring to the water before you put it in the bowl.)
3. Use your hands to combine the cornstarch and water.
4. Poke the ooze gently, then stir it slowly with your finger. How does it behave?
5. Now poke the ooze sharply, and drag your finger through the bowl quickly. Does it react differently when you apply more force?
6. Pick up some ooze, and let it run through your fingers. Now squeeze some in your hand. How does it behave?

Note: You can make as much or as little “ooze” as you like, using a ratio of 2 parts cornstarch to 1 part water.



What's Going On?

The cornstarch and water mixture has some pretty surprising properties. The “ooze” looks and feels like a thick liquid when you touch it gently, or let it run through your fingers. But it seems to get hard like a solid when you apply more force, and can even appear dry and powdery.

Ooze is a *non-Newtonian fluid*, meaning that it acts like a liquid when being poured, but like a solid when a force is acting on it. Its viscosity increases with the speed and strength of the force applied to it, so sometimes it feels hard and nearly solid, and other times it feels runny and liquid.

*A **Newtonian fluid** has a constant rate of flow regardless of the forces acting on it.*

*A **non-Newtonian fluid** is any fluid that behaves differently depending on the amount of force acting on it.*

Learning Objective

- A non-Newtonian fluid acts like a liquid when being poured, but like a solid when acted on by a force.

Materials

- Cornstarch
- Water
- Food coloring (optional)
- Bowls
- Measuring cup



Credits

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