

Exploring Ooze!

What's Going On!? This stuff can't make up its mind—is it a liquid or a solid? In this activity, children discover the properties of a non-Newtonian liquid, which means that the viscosity—or resistance—of the substance changes as you apply a stronger force. (Unlike water, for example, which is a Newtonian liquid and has an unchanging viscosity).

When you apply a stronger force—like when you're moving your finger fast through the ooze, or rolling it between your hands—it reacts like a solid; it has more viscosity then, more resistance. But when you let up on the force, it reacts like a liquid. Gather your materials and let's make some ooze!

MATERIALS:

Newspaper to cover workspace
Paper Towels, wet wipes or wet towel for cleaning up
Measuring cup
2 cups of dry cornstarch
Large bowl
Food coloring (optional)
1 cup of water

(You can halve the recipe if desired. The cornstarch to water ratio is 2:1)

DIRECTIONS:

Put the cornstarch into the bowl.
Add a drop or two of food coloring (optional).
Add water slowly, mixing the cornstarch and water with your fingers until all the powder is wet.
Keep adding water until the ooze feels like a liquid when you're mixing it slowly. Then try tapping on the surface with your fist. When ooze is just right, it won't splash—it will feel solid.
If your ooze is too powdery, add a little more water. If it's too wet, add more cornstarch.

LET'S EXPLORE THE "OOZE"

Let the play begin! (To minimize the mess, play with the ooze over the bowl)

Pick up a handful of ooze and let it just sit in your hand. What happens? Is it acting like a solid or a liquid?

Now pick up a handful and roll it into a ball between your two hands, keep rolling it. While you're rolling it, does it act like a liquid or a solid?

Stop rolling it. Now what happens?

Try banging on the surface of the ooze with your fist. Does it react like a liquid or a solid?

Spread your fingers, point them down and rest them on the surface of the ooze. Now slowly let your fingers sink down to the bottom of the bowl.

Now, quick (!), pull your fingers out. What happens?

Try to stir the ooze quickly with your finger—what happens?

Then, stir it slowly—what happens now?