

OUBLEK OR QUICKSAND

SLIME

WHAT YOU NEED:

- Cornstarch
- Water
- A big bowl



WHAT YOU DO:

1. In the plastic mixing bowl, combine small amounts of water and cornstarch together to form a mixture that looks like heavy whipping cream and has the consistency of honey. The approximate ratio of the cornstarch to water mixture is 2 cups of cornstarch to 1 cup of water. So if you use all of a regular-sized box of cornstarch (about 16 oz.), you will use about 1½ cups of water. It is best to start with less water and slowly add it until the desired consistency is reached.
2. After making your mixture, gently lay your hand on the surface of the cornstarch-water mixture. You should notice that your hand sinks in the mixture like you would expect it to do. Move your hand through the mixture, slowly first and then trying to move it really fast. Was it easier to move your hand slowly or quickly through it?
3. If your mixture is deep enough to submerge your entire hand in it, try grabbing a handful of the mixture and pulling your hand out quickly. Then try again, this time relaxing your hand and pulling it out slowly. Did you notice a difference?
4. Try punching the cornstarch-water mixture. (Be careful not to hurt yourself on the bowl!) Make sure to hit the substance hard and pull your fist back quickly. Did the substance splatter everywhere or did it remain in the bowl? (If it splattered, add more cornstarch.)
5. Whenever you gently and slowly move your hand through the cornstarch-water mixture, it behaves like a liquid. But when you try to move your hand through it quickly or forcefully hit the substance, it behaves like a solid. This cornstarch-water mixture behaves similarly to quicksand.

WHAT HAPPENED:

The flow and movement of a fluid is affected by its viscosity, or how sticky and thick it is. Quicksand and the cornstarch-water mixture are both non-Newtonian fluids. Non-Newtonian viscosity changes with the type of force applied to it. The viscosity of Newtonian fluids (such as water and honey, which follow Sir Isaac Newton's law of viscosity) is dependent only on the temperature and pressure of the fluid, not the force applied to it. For instance, warm honey (less viscous) flows much more freely than cold honey (more viscous).

Since the ability of a non-Newtonian fluid to move depends on the force or stress applied to it, these fluids do not act like ones we are more familiar with (e.g., honey or water). A light pressure, such as pouring or gently pressing the cornstarch-water mixture, allows it to move like a liquid.