



MAKE GLOOPY SLIME

A liquid that's also a solid? Impossible! Try this simple experiment and make a weird slime that proves it's true

ACTIVITY

Suitable for Beavers, Cubs and Scouts

You will need (per team)

- scales
- cornflour 250g
- large bowl
- measuring jug
- water 150ml–250ml
- food colouring
- spoon
- plastic gloves (optional)

Instructions

- 1 Divide your section into small teams or pairs.
- 2 Using the scales, have each team measure out 250g of cornflour and place it in a large bowl. Next, ask them to measure out 250ml of water.
- 3 Ask your young people to add a couple of drops of food colouring to the cornflour and then slowly pour 150ml water into the bowl, stirring constantly.



4 Once 150ml of water has been added, keep pouring in water slowly. Tell your section the slime should have the consistency of honey.

5 Now it's time to put the theory to the test. Encourage your section to handle the slime by running their fingers through the mixture and seeing if it acts like a liquid. If they punch the slime, it acts as a solid.

6 Suggest they pick up some of the slime and roll it into a ball in their hands – it will look and feel a little like play dough. But if they stop rolling, the slime will return to liquid form.



WOGGLEBOX



Efa says:
'This worked much better than I expected. You need a lot of gloop to make it dance!'

TOP TIP

If your slime starts to dry out or crack, add a little more water and mix thoroughly – it'll be back to its slimy best in no time

THE SCIENCEY BIT

Newton's Law of Viscosity describes how fluids behave, so when you throw a rock into water, the water displaces and splashes out of the way. But a non-Newtonian fluid – like this gloop – doesn't do that because it can also behave like a solid. When you mix cornflour with water, the larger flour particles don't dissolve but stay suspended in the water. Just like when you mix water with sand. Quicksand is another non-Newtonian fluid that is liquid enough that you can fall into it, but becomes solid when you apply pressure and try to get out. When the mixture is moving slowly or is under a small amount of pressure, the particles flow over each other and it behaves like a fluid. But try moving the liquid quickly, or apply greater pressure, and the particles lock together, the water flows away, and it behaves like a solid.

DID YOU KNOW

Ketchup is a non-Newtonian fluid, that's why it sticks to the bottom of the bottle!



BADGE



Rolls-Royce partners the Cub Scientist Activity Badge.

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OUTCOMES

Your section will conduct a simple experiment to create a non-Newtonian fluid and discover its unusual properties.

TAKE IT FURTHER

Watch how non-Newtonian fluids react to a vibrating surface by wrapping a speaker in clingfilm and placing the mixture onto the speaker. Play different types of music at different volumes and note how the fluid responds.

MORE INFORMATION

Rolls-Royce partners the Cub Scientist Activity Badge to inspire young people about science, technology, engineering and maths. Fun and educational activities like this aim to take the fear out of science for Cub Leaders and support Cubs themselves in achieving their Scientist Activity Badge.

See: scouts.org.uk/rollsroyce.