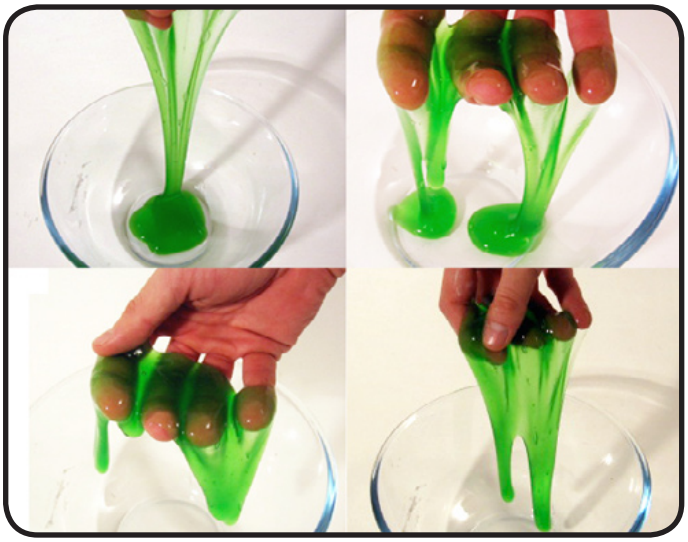
Play at Powerhouse make & do activity kit

Science with Zoe & Cogs - Experiment 6

Super Slime

Is your slime a solid or a liquid? Actually it's neither! It's what is know as a "non-Newtonian fluid".



Ingredients
Borax powder (laundry section of supermarket)
Guar gum powder (health food stores)
Glycerol/glycerine (pharmacy or supermarket)
Food colouring (optional)
Warm water

Equipment
Measuring jug
2 teaspoons
Popstick for stirring
Plastic bottle (plastic squeeze sauce bottle is ideal)
Mixing bowl
Jar or ziplock bag (to store your slime)

What to do:

Preparing your borax solution

1. Label your bottle "borax".

2. Add 250ml (1 cup) warm water to the bottle.

3. Add 4 slightly heaped teaspoons borax to the water.

4. Place the lid on the bottle.

5. Dissolve the Borax by shaking the bottle.

6. Add some more borax until you can dissolve no more.

Making your slime

1. Add 125ml (1/2 cup) of warm water to the bowl.

2. Add 3 drops of food colouring to the water. (optional)

3. Add 1g guar gum powder (approximately ½ teaspoon) to the water and stir until dissolved. (if it turns into a paste try again and add less guar gum!)

4. Add 2 teaspoons of glycerine/ glycerol to the guar gum solution and stir.

5. While stirring, slowly add the borax solution to the guar gum solution, a few squirts of your bottle at a time. Continue stirring until it thickens and you can lift the slime up with your spoon/popstick.

6. For different degrees of sliminess, experiment with different amounts of borax solution and guar gum.

phm powerhouse museum science+design
500 Harris St Ultimo
PO Box K346 Haymarket NSW 1238 Australia
tel: 02 6217 0111
web: http://play.powerhousemuseum.com

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What's going on?

When you add the borax solution to the guar gum solution it joins together the dissolved guar gum molecules.
Scientists call this joining together cross-linking.
The more borax you add the firmer the slime becomes.
Eventually all the molecules are stuck together and the water is trapped inside.
But is your slime a solid or a liquid? Sometimes it behaves like a liquid just like when it flows to take the shape of the container you've placed it in. Other times it acts like a solid when it sits like a blob in your hand.
So which is it? Actually it is neither, and scientists have given substances like these a special name a "non-Newtonian fluid".

IMPORTANT STUFF

Handle the borax with care. **Please read the safety instructions on the container** it came in. Once the slime itself is made you can safely play with it with bare hands. But wash your hands after playing with it.

Slime is not a food **so don't eat it**.

Making and playing with slime can be extremely messy! Make sure you are wearing old clothes and be careful around furniture and carpet!

Store your slime in a jar or ziplock bag in the fridge.

What else do you see?

Use this space to write about, and draw anything else you noticed while doing this experiment.