Super Slime

Slime, gunge, goo... It doesn't matter what you call it, few things will gross out your parents more than this wonder material! You can roll it, squash it or hang it off your nose like a booger – but for this record, it's all about stretching it.

TIL
TODAY I LEARNED

Silly Putty was invented during World War II by a chemist who was trying to make artificial rubber for the US military. He came up with a blend of chemicals that was bouncy, non-toxic and gooey at room temperature – all fun things, but no use to the war effort.

THE RECORD: Longest distance to stretch home-made slime in 30 seconds

THE CHALLENGE: This is a record of two halves. First, you have to channel your inner mad chemist to make the slime. This will probably take a few tries to get the perfect recipe – you're aiming for elastic, but not too runny.

Second, you have to stretch a piece of your slime as far as it will go without breaking. For this part of the attempt, you only have 30 sec, so you have to work quickly!

Things can quickly get messy when working with slime, so it's best to attempt this record on a wipe-clean surface like tiles or lino – NOT carpet!

WE USED:
- PVA GLUE
- BAKING SODA
- FOOD COLOURING
- BOWL & SPOON
- LAUNDRY DETERGENT (WITH BORAX)

SHOPPING LIST

GUIDELINES

- The following ingredients can be used to make the slime: glue, water, borax, cornstarch/flour and food colouring. The ingredients list and methodology must be submitted as evidence, along with video footage.
- The slime used must weigh no more than 50 g (1.7 oz). Its weight must be recorded on a scale.
- The challenger starts with their hands flat on a surface. When the time starts, the slime must be stretched with the hands. After 30 sec, the challenger must stop touching the slime; it should be left to rest for 10 sec before any measurements are taken.
- There can be no complete tears/breaks in the slime, otherwise the attempt is invalid.

A lab assistant always comes in handy!

1

We started by pouring our wet ingredients (PVA and washing detergent) with some baking soda into a mixing bowl. If you don't have a lab assistant to provide an extra hand, you can do this in two stages. Mix these together thoroughly. You'll have to experiment with quantities.

2

Food colouring isn't obligatory to the recipe, but it certainly makes the slime more... well, slimy. Once you've stirred this in, you may need to add a bit more powder to counter the gloopiness (see Top Tip! below).

3

Once you're happy with the consistency of your slime (not too wet, not too dry), you're ready to try for the record. Start with it as a ball/blob, then carefully tease it out on a smooth, flat surface. The floor is probably best unless you have a *really* long table. Remember, you're against the clock so work fast!

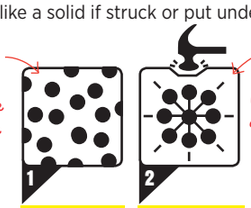
HOW DOES IT WORK?

The key ingredient in this is borax. It sounds like a Pokémon character, but is actually a chemical compound used in detergents, contact-lens solution and a few other household products. You'll need to find a detergent with borax (not all of them do) – otherwise your slime will be a bit rubbish.

The borax – also known as sodium borate – makes the slime slimy by bonding with the PVA (polyvinyl acetate) glue. The vinyl acetate polymers are cross-linked (joined together) by the sodium borate molecules, creating massive interconnected molecule chains.

It's these long chains that give slime its unusual non-Newtonian properties. It's a liquid most of the time, but acts more like a solid if struck or put under pressure.

At rest, the loose structure of the molecules gives slime its soft and flexible feel – behaving much like a liquid



Soft & flexible

Locks on shock

Under pressure (e.g., squashing), the molecules lock together, acting more like a solid; when the pressure stops, they return to their "liquid" state

TOP TIP!
FROM PROFESSOR ORBAX

Is your slime too slimy? Is it running all over the place and generally not co-operating with your attempts to break records? What you need is a thickening agent. We used a bit of cornflour (*not* cornmeal – that's something completely different) to get our slime to behave. A tablespoon or two is enough to get things looking right. Just sprinkle it into the mixture and stir it in.

If you go too far and stiffen your slime into a thick, unbending goop, you'll need to add a little more PVA glue and detergent to balance things out. Careful, though; add it a little at a time or you might end up back where you started!