

# Bouncing slime

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Round measuring spoons are good for making slime balls. It stops them from going flat on the bottom. The ball in the spoon was put in the fridge for an hour to cool it.

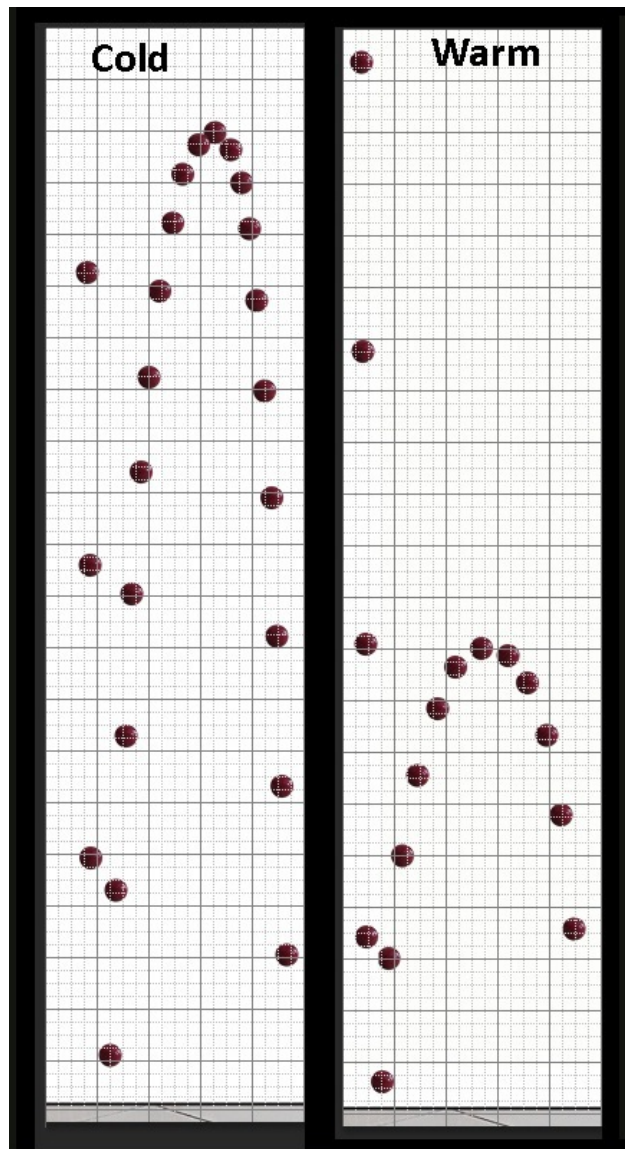


The ball was taken out of the fridge and dropped on the tiled floor. We let it warm up, remade it in our hands, and dropped it again. The ball bounced higher when cold than when warm. Sometimes just looking is enough, but to do this properly with measurements, we put the ball back in the fridge and found a phone with a video camera.

This time we were careful to drop the ball from the same height of 180 cm each time. The video showed the ball bouncing close to a wall with a ruler taped to it. The temperatures in the fridge and in the room were measured with a thermometer.

The drop and bounce heights are shown frame by frame on the next page. *We made the diagram from videos by hand, but a free download called Tracker will save you time. If you can get access to a Vernier program called Logger Pro that's even better for tracking video frame by frame. Ask your school: if they have it they can give it to you free.*

## Bounce heights for my Horse-glue slime



Each small square on the diagram represents one cm. The drop point was 180 cm above the floor and is not shown. When cold (at 5°C) the rebound height was 76 cm. When warm (at 28°C) the rebound height was 36 cm. The slime ball bounces higher when cold.

*If you do this experiment yourself you can expect your slime to be more bouncy when cold, but how bouncy will depend on the temperature, the water content at the time, your choice of glue, and how much borax you put in. By changing the slime mixture you could try to get higher bounces, but probably not as high as the rebound of a bouncy solid rubber ball.*

## Bouncing PVA slime

PVA slime will bounce too.

We put a ball of PVA slime uncovered, in a spoon, in the fridge over night to cool and dry it. Dropping the PVA ball the same way that we dropped the Horse-glue ball from 180 cm above the tiled floor gave different rebound heights. The firm cold ball rebounded 40 cm and the ball when warmed to room temperature (30 C) bounced only 20 cm. PVA slime bounces less than Horse-glue slime, but it too bounces better when cold.

### Next moves

Make slime and let it dry until it's sort of firm like rubber, but still soft enough to make it into bricks and balls. Be sure to write down the quantities of your ingredients, the way you made it and the time you left it to mature. These things don't matter so much when you're just playing but they are very important for a *science* project.

**a** Make about six balls of different sizes from 5 to 50 mm in diameter. Measure the rebound heights at room temperature when dropped from 1 and/or 2 metres. *What have you discovered?*

**b** Find a glass marble. Make a marble sized slime ball and make the rest of the slime into a flat pad about 2 cm thick. Drop the slime ball on tiles and the marble on the pad. Measure the rebound heights. *What have you discovered?*

**c** Would dropping a marble on a floor pad be a way to measure the rebound properties of slime as the temperature changes? Use this method with a marble to measure the rebound heights of your slime as a function of temperature between zero and a higher temperature. Can you get above room temperature? Plot a graph.

If you find something cool, email us (please), at [ian.jacobs96@gmail.com](mailto:ian.jacobs96@gmail.com).