

Presented by



SKEWERING A BALLOON

Overview and Objective

A Polymer is a useful chemical made of many repeating units. The most common 'backbones' for polymers are chains of carbon or silicon, each of which can bond to other atoms.

A balloon is made up of long chains of latex molecules. With this experiment, if you pierce the points of the latex balloon that is under the least amount of stress, the long strands of polymer molecules stretch around the skewer instead of popping.

WHAT YOU WILL NEED:

- **Bamboo BBQ skewers**
- **Vegetable oil**
- **Large latex balloons**
- **Safety goggles**

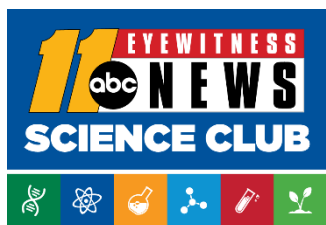
Process:

1. Fill up a balloon so its still squishy to the touch.
2. Tie a knot in it.
3. Dip the sharp point of a BBQ skewer into the vegetable oil until well soaked.
4. Find the darkest point on the balloon, the spot where the polymers are not as stretched. This will likely be near the knot.
5. Using a twisting motion, poke the end through the balloon until the skewer has gone all the way through.
6. Still twisting, push through the other side of the balloon, again searching for the darkest part in the latex.

What have you found?

What happened? Because the balloon was not fully inflated, there was room remaining for the polymers to stretch.





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Take it Further

Try this experiment through the center of the balloon. What happens?

Try again. This time, using a piece of tape at the point of puncture. What happens? Why?



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