

# BOUNCY BALL

## Materials

2 cups  
Borax  
Corn Starch  
Elmer's glue  
Warm Water  
Measuring cups/spoons

### Did you know?

Engineers not only invent things, but they also make sure they are produced correctly. Biomedical Engineers are using polymers to help grow heart tissue.

## Borax Solution:

1. Pour 2 tablespoons of warm water in a cup
2. Add  $\frac{1}{2}$  teaspoon of borax
3. Stir until borax dissolves

## Make Bouncy Ball:

1. Pour 1 tablespoons of glue into the second cup
2. Add  $\frac{1}{2}$  teaspoon of the borax solution and 1 tablespoon of corn starch
3. **DO NOT STIR** for 15 seconds
4. Now Stir!
5. When it gets too difficult to stir, pull the mix out and begin kneading it- it will start sticky but soon you'll get a bouncy ball

## What's Going On

Engineers often use things called “polymers” as part of their inventions. The interesting thing about polymers is that you can change the big molecules by changing the small molecules. Just like changing a recipe makes a cookie taste differently, changing the ingredients can make a polymer behave differently.

Make 2 more bouncy balls. This time change 1 of the 3 ingredients (borax, corn starch, or glue) Which ball bounces best? Record your results.

*Adapted from: EEK! (a project funded by CELL-MET: an NSF ERC under award number EEC-1647837)*



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**WHAT DID YOU CHANGE? RECORD OBSERVATIONS  
AND CHANGES.**

BALL	CHANGES	OBSERVATIONS	BOUNCE HEIGHT
<i>EXAMPLE</i>	<i>NOTHING- FOLLOWED INSTRUCTIONS</i>	<i>FEELS LIKE... LOOKS LIKE... ROLLS LIKE....</i>	<i>7 INCHES</i>

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