

Dear Jax,
 Why does a rubber ball bounce?
 Tianna Nelson
 Castro Valley, California

Dear Tianna,
 When you drop a ball and the ball falls to the ground, the energy of the fall actually collapses the bottom of the ball. When the ball reshapes itself, that falling energy is changed into lifting energy. After you do today's experiment, *You Can* read the reason it works by holding the newspaper up to a mirror.

Jax Place
 Jax Place

experiment #1

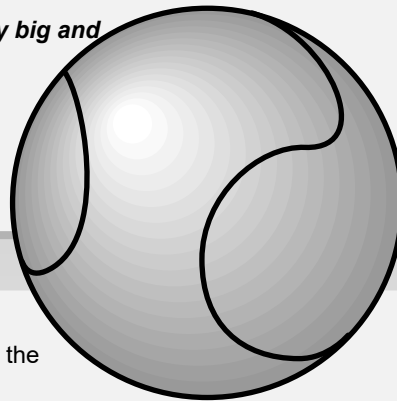
The Way The Ball Bounces

WHAT YOU NEED: Basketball - tennis ball

Optional: Any other 2 balls that are about the same sizes – 1 very big and 1 quite small. They both should bounce.

WHAT TO DO:

Put a ball in each of your hands. Gently turn your hands over at the same time. Let the balls fall to the ground. Do not add any energy by pushing or throwing them down.



MORE STUFF TO DO:

Now place the tennis ball on top of the basketball. Let them drop together. Again, *do not* add any energy by throwing the balls down to the ground.

SO WHAT:

The balls bounced at about the same height during the first part of your experiment. But when you did the second part, the tennis ball zoomed off and jumped as high as a house. Why?

WHAT IS GOING ON?

When you bounced the balls separately, they both popped back up about the same height. And that's important if you think about it. The basketball is much bigger and is a lot heavier than the tennis ball. That means a lot more energy is needed to lift that ball up in its bounce. The tennis ball takes less energy to lift in its bounce. When you put the two together, the greater lifting energy from the basketball was transferred to the tennis ball. It was so much, the ball shot off like a rocket.

P.S. from Beakman: Try it with the basketball on top of the tennis ball. Use what you just learned to figure out why it loses almost all its bounce.