

# The Spinning Ball



## YOU WILL NEED:

- Small rubber ball
- Flat table top surface
- Medium size jar (wide mouth) or a jar with a lip/neck (large mayonnaise jar). A drinking glass may work!

## WHAT TO DO:

1. Place the ball on top of the table
2. Place the jar over the ball so that the ball is inside the mouth of the jar.
3. Start spinning the jar around in a circular motion (keeping it on the table).
4. Once the ball starts spinning inside the jar lift it from the table top.
5. The ball is lifted from the table and will continue to spin inside the jar until it loses its speed.

## HOW DOES IT WORK?

This works because the ball spinning inside the jar is trying to escape but the jar itself forces the ball to stay inside the wall of the jar.

Due to the force of the spin or speed, the ball will continue to spin until it loses its speed and gravity will pull it back to earth and the ball will fall from the jar.

## MAKE IT AN EXPERIMENT

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer this question:

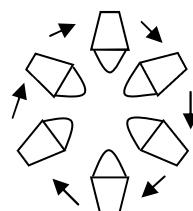
1. Does the size of ball change the force needed to make the ball spin in the jar?
2. Does the size of jar or container affect the ball as it spins?

## EXTRA EXPERIMENT

Take an empty bucket with a handle.

Pour some water into the bucket. (You need to be able to lift the bucket easily)

Now for the science!



Start to swing the bucket back and forth until you have enough speed to make it travel upside down in a full circle.

Does the water come out? It should stay in the bucket. This is because the water is being forced to the bottom of the bucket as it swings, but the bucket is strong enough to keep the water inside. If the bucket stopped at the top of the swing, gravity would pull the water back to earth making you very wet indeed!