



Curiosity Guide #309

Inertia

Accompanies Curious Crew, Season 3, Episode 9 (#309)

Inertial Antenna

Investigation #6

Description

Create a crazy antenna and learn more about inertia!

Materials

- Wire coat hangers
- Wire cutters
- 2 tennis balls or balls of clay

Procedure

- 1) Straighten out a wire coat hanger. Clip off the bent ends of the coat hanger with a wire cutter.
- 2) Bend the wire so that the wire forms the shape of a wide lower-case "m". The center of the "m" should be as close to a point as possible, and the outside humps should be wider than your head.
- 3) Pierce a tennis ball on each end of the wire, or form two large balls of clay. Slide the balls of clay on the two outside ends of the wire.
- 4) Balance the center of the hanger on the top of your head. The outside of the hanger should be well beyond your ears.
- 5) Quickly spin around in place.
- 6) What do you notice?

My Results

Explanation

This is a good example of Newton's First Law of Motion, the Law of Inertia. Newton's First Law of Motion says that an object that is still or at rest will stay at rest. An object in motion will keep moving unless another force acts on it. When you first set up the antenna, the antenna is nearly still and balanced. As you begin to spin, the antenna resists that quick change in motion and remains relatively still. The tennis balls increase the antenna's mass and make the antenna more stable.

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