

All Wound Up



Power a racecar with a rubber band? Yup! Power it up and then let it zip across the floor. But try not to get a speeding ticket. Ready, set, roll!

What to Do

1 Get what You need.

- 1 drinking straw (or a pencil or toothpick)
- 1 large spool (at least 1 1/4 inches in diameter)
- Masking tape
- 1 metal washer (1 inch or less in diameter works best)
- 1 rubber band (just a little longer than the spool's height)
- 1 small paper clip (shorter than the spool's diameter)

2 Build Your racer.

3 Energize Your racer. At first, the rubber band may be so loose that the straw slips out. Wind up the straw 20 times or so. The rubber band will get tighter and pull everything together.

4 Launch Your racer. Put the racer on the floor or a tabletop and let it go. Does it move in a straight line? Does it spin? Adjust the racer's parts to make it move the way you want.

5 Race Your friends. Test whose racer goes the fastest, farthest, or straightest. Try it on a rug. How do different surfaces affect the way the racer moves?

chew on This

When you wind up the rubber band, you store energy in it. As the rubber band unwinds, this stored energy (called *potential* energy) changes into motion energy (called *kinetic* energy). The more potential energy that gets turned into kinetic energy, the farther and faster your racer will go. Notice that when the straw tries to spin, it hits the table, which stops it from turning. But the other end of the rubber band (attached to the paper clip) can spin freely. When it unwinds, it pushes on the spool, making it spin.

Fold

