# Rattleback

## Try It Out

Place the plastic toy on the museum surface, curved side down. Spin the toy in one direction and observe what happens. Then, spin the toy in the *other* direction and observe what happens. What was different between the two?

**What's going on?**

The **rattleback** toy gets its name from the behavior you may have witnessed. When spun in one direction, it keeps spinning as you'd expect. But when spun in the other direction, it becomes unstable, wobbles, and *reverses direction*. This seems to go against what we know about physics, that an object in motion will continue to move in that same direction.

**What's the big deal?**

Ancient **celts**, tools for chopping or cutting, have been discovered that exhibit this same strange behavior. While it isn't known whether the tools were purposely carved with this in mind, the shape has been a curiosity for over 100 years. This toy is a good reminder about the delicate balance an object in rotation must strike in order to continue rotating freely for as long as possible. (Or as efficiently as possible.)

*An example of a celt. (Image: Madman2001)*

## Wonder While You Walk...

What objects in your daily life can you think of that could become unstable while spinning? What might happen if these objects became unstable?