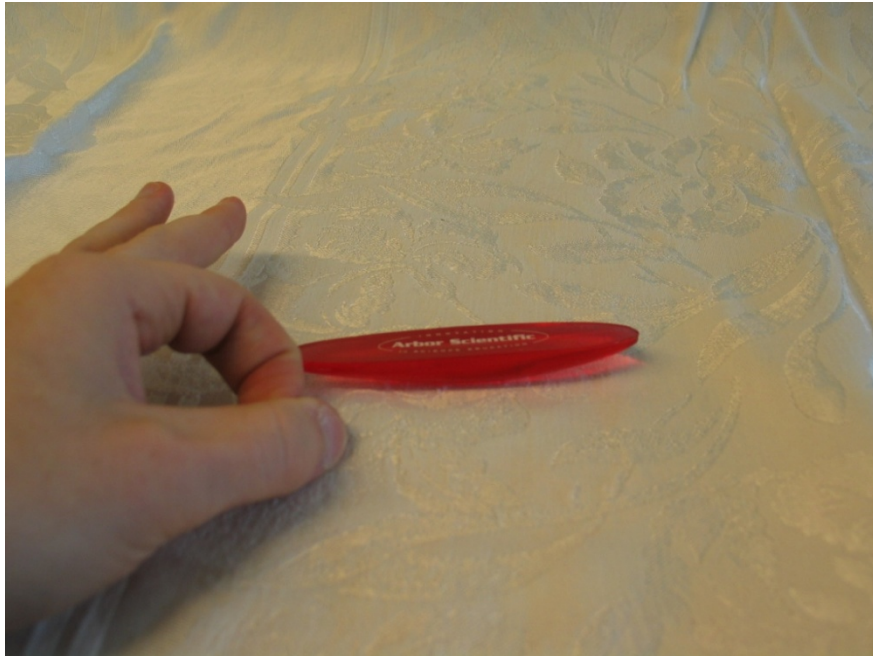


Rattleback (Celt)



Purpose: To demonstrate a surprising effect in rotational dynamics

Location: room 136, shelf O3

When spun in one direction, the “rattleback” (also known as a “Celt”) simply keeps spinning in that direction until it slows to a stop due to friction, as would be expected. But when spun in the other direction, it mysteriously slows, rocks, and reverses direction, appearing to violate the law of conservation of angular momentum. The “secret” lies in the slightly asymmetrical shape of the curved bottom, which couples some of the initial rotational energy into a rocking motion, which in turn results in a torque causing it to rotate in the opposite direction.