The Rattleback is a tactile curiosity whose ancient and mysterious properties grab the attention of people of all ages. With a flick of the finger you can demonstrate Newton’s Laws of Motion.

Place the Rattleback on a hard, smooth, level surface with the elliptical side down. Lightly tap one end and notice in which direction it rotates. Spin the Rattleback in that direction. Now try to spin the Rattleback in the opposite direction (clockwise). Due to its offset center of gravity, the Rattleback has preferred direction of rotation; it wants to spin counterclockwise. It’s spin bias is so strong that when it is spun clockwise, it will turn through a few revolutions, stop, “rattle” or rock up and down on its long axis and then automatically reverse itself and spin counterclockwise.

Turn the Rattleback upside down (flat side down) and use it as a magnifying glass. The cylinder lens magnifies vertically and you will notice some distortion due to its uneven curvature.

Rattlebacks are also known as rattlerocks or ovals. They were rediscovered by archaeologists studying the forms of prehistoric axe and adze heads (axlike tool for dressing wood, etc.). Naturally formed rattlerocks can be found along river banks and near bodies of water where action of the water has smoothed them into ellipsoidal shape that has a spin bias.