

Name

Investigating the Rattleback Bowl Student Worksheet

Data Table 1

	Observations
Initial Bowl Spin	
First Clay Position	
Second Clay Position	
Clay on Same Side	
The "Best" Rattleback	
Additional Experiments	

- 1. According to your observations, what conditions are necessary for the rattleback to switch rotational directions? Is an initial wobble necessary for the rattleback to reverse directions?
- 2. Describe the motion of the rattleback as it changes direction.
- 3. What conditions were required for the "best" rattleback?
- 4. From your experiments and observations, develop a hypothesis to explain the bowl's change in rotational direction.
- 5. Would the same behavior occur with a completely spherical bowl? Why or why not?

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Investigating Surface Tension Student Worksheet

Data Table 2

	Observations
Part 1, Tap Water	
	Total amount of water added:
Part 2, Soapy	
Water	
	Total amount of water added:

- 1. Define the term surface tension.
- 2. How did the tap water in the beaker react as more weight (water) was added to the bowl?
- 3. How did the soapy water in the beaker react as weight was added to the bowl?
- 4. Which liquid, tap water or soapy water, has stronger surface tension? Explain how surface tension helps to support the bowl.