# Catapult Competition

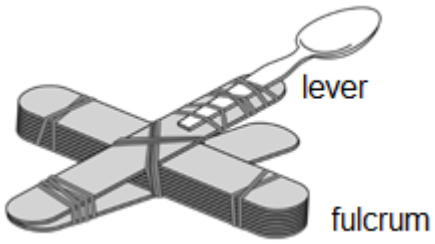
Students design a simple machine – the catapult – and use it to launch a ping pong ball across the room. Teams present their design to the class at the end of the activity and then launch their ball to see which goes the furthest.

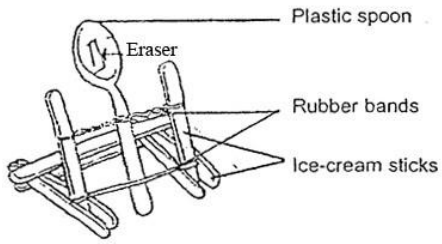
**Grade Range:** 5-8

**Time:** 45 min

**Synopsis:** This activity helps to teach simple machines, energy and motion, and it uses engineering and design skills.

Simple machine – Catapults use a lever and fulcrum. Some examples are below.




*Potential energy* is the stored energy that something has in it, like a stretched rubber band or a wound-up spring.

*Kinetic energy* is the energy of something in motion, like a bowling ball hitting pins.

**Materials:** Popsicle sticks, plastic spoons, rubber bands (all sizes), masking tape, light weight ball (ping pong, plastic golf ball) to launch.
Optional items: paint stir sticks, paper rolls tube, plastic water bottle, bottle caps to hold ball. Wooden clothes pins can also be used to create the potential energy (spring).

**Experiment:** Divide all the supplies evenly in the classroom. Work in teams to design and test catapult. At the end, each group describes their design to the class and then tests their catapult in a competition to see which launches furthest.

**Questions:** What would you change to make your catapult better? What causes the catapult to launch the ball Highest? What supplies would you use to design a catapult to launch water balloons in the summer?