PROJECT!

BUILD A CRAFT STICK CATAPULT

Ancient armies used catapults in battle. But the catapult has been used as recently as World War I. In that war, soldiers used catapults to toss hand grenades at the enemy. Today, catapults are used to launch planes off the decks of huge ships called aircraft carriers. Because the runway is short on an aircraft carrier, the catapult helps get the plane into the air quickly. Try making your own!

SUPPLIES

- 7 craft sticks
- 3 rubber bands
- milk carton cap or water bottle cap
- glue
- cotton balls, marshmallows, or small candy pieces
- science notebook

Caution: Never launch any object toward an person or animal.

1 Stack five craft sticks and fasten them with rubber bands tightly wrapped on both ends.

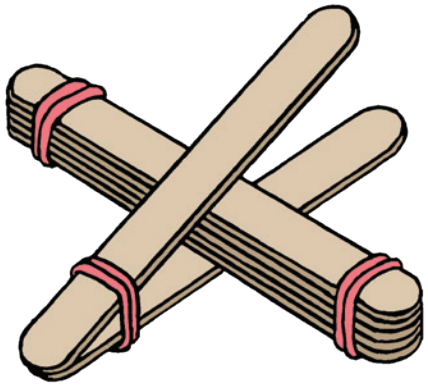
2 Place two craft sticks together and fasten them together with a rubber band tightly wrapped on one end.

ENGINES IN NATURE: JET PROPULSION CEPHALOPODS

Not all jet engines fly through the skies. Some jet engines move through ocean waters. The octopus, which is a cephalopod, uses jet propulsion to move its body. Cephalopods jet themselves through the water by pumping water into their bodies. Then, they push the water out through their siphon, or a kind of tube in the octopus' body. Some cephalopods can move at speeds above 25 miles per hour, using their built-in, jet propulsion engine!

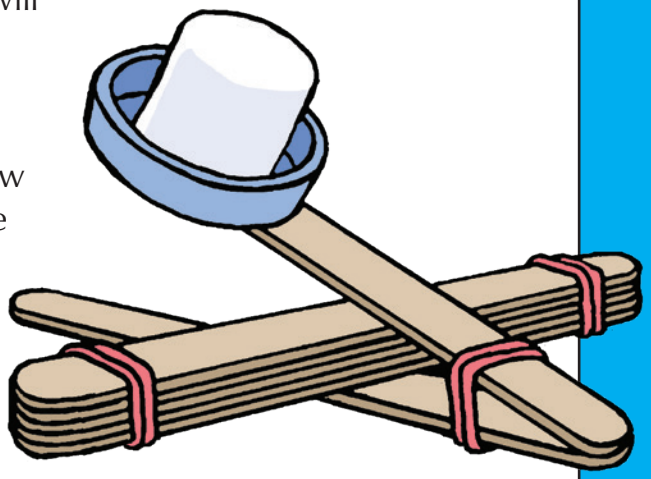
PROJECT!

3 Spread the two craft sticks apart (use your fingers to separate the ends that are not fastened with the rubber band). Slide the stack of five craft sticks between the two craft sticks you have spread apart.



4 Glue a plastic milk cap or water bottle cap to the catapult. This cap will hold the object you launch from the catapult.

5 Place a cotton ball or marshmallow in the plastic cap. Press down on the top craft stick and then release it to launch the object from the plastic cap.



TRY THIS! Launch the cotton ball or marshmallow several times. Measure the distance it travels each time. Then launch slightly larger or heavier objects—like a ping pong ball or a coin. Does the size and weight of the object launched make a difference in how far it travels? Make a sketch of your catapult in your notebook and record what happened as you launched objects.

WORDS TO KNOW

cephalopod: a group of highly intelligent ocean-dwelling creatures, which includes the octopus.

jet propulsion: the movement of an object in one direction, produced by ejecting a stream of fluid in the opposite direction.