



GET YOUR GEAR



craft sticks



rubber bands



plastic straws



cotton swabs



string or dental floss



Create a bow that can shoot an "arrow" (cotton swab) at a paper heart from within 10 feet.



WHAT'S GOING ON?

A bow is basically a double spring. It uses **mechanical energy**, or the energy of movement. When you pull back the string, you use your muscles to exert a force that bends it backward. You can change the force by bending it more or less. The string now has potential energy. It will turn into kinetic energy when you release the string and launch the arrow.

Real bows are made of materials that bend, such as wood. The string is stretched between the ends.

HINT:



Look up the definition of **energy**. Where does the energy in your design come from?

Is there another material or tool that is not on the list that you would like to use in your design? What is it? Why?

Improve on your design. Can you make the arrow shoot farther?

Design a bow and arrow holder for Cupid.

Try shooting at different angles and distances. How does this affect your aim and the speed of the arrow? Graph it.

