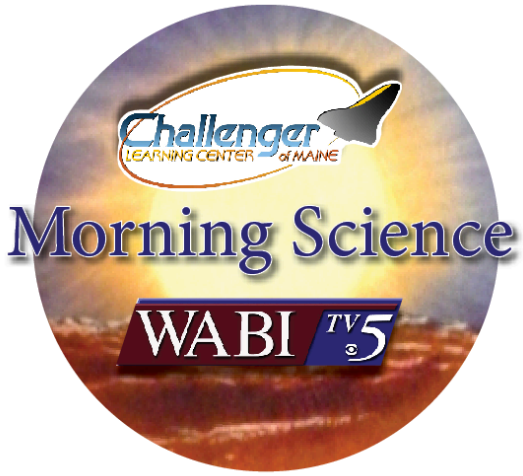

Challenger's Morning Science Segment:

June 1, 2015

Topic: Engineering Catapult Challenge

Build: Catapult

Credit: http://www.connectamillionminds.com/assets/media/downloads/TWC-Studios_History-Catapults.pdf

Building catapults:

Use 6 popsicle sticks and 4 rubber bands to build catapults by connecting two popsicle sticks around a stack of 4 popsicle sticks. First, secure a stack of 4 sticks by twisting a rubber band around each end of the stack, and set aside. Next, take the remaining two sticks and twist a rubber band around one end. Stick your finger between the two sticks and separate into a "V" that can be inserted across the middle of the stack of 4. Push all the way into the stack as close to the narrow end of the "V" as possible. Wrap the remaining rubber band around the "V" and the stack with an "X" twist to secure them together. The catapult can be tested by firing mini marshmallows at a target, or by using any small object from around the house to fling.

The science [credit connectamillionminds.com/New York Hall of Science]:

A catapult uses a lever to amplify force and provide a mechanical advantage. When the lever of the catapult is pulled back, potential energy is created in the lever arm. Then once released, the potential energy is changed to kinetic energy and the firing object flies towards its target!

This activity ties into the following Challenger Camp:

Rovers, Robots & More, July 20-24 & 27-31, 2015 [grades 3-5]

We build catapults like this example at our Engineering camps in July. We also allow campers to build their own versions using different materials. We promote the engineering design process where they use methods such as planning, building and testing. Campers love to fling soft "angry birds" at targets that they have fun building. We also have a giant catapult that campers use (which gets used at various public events also).