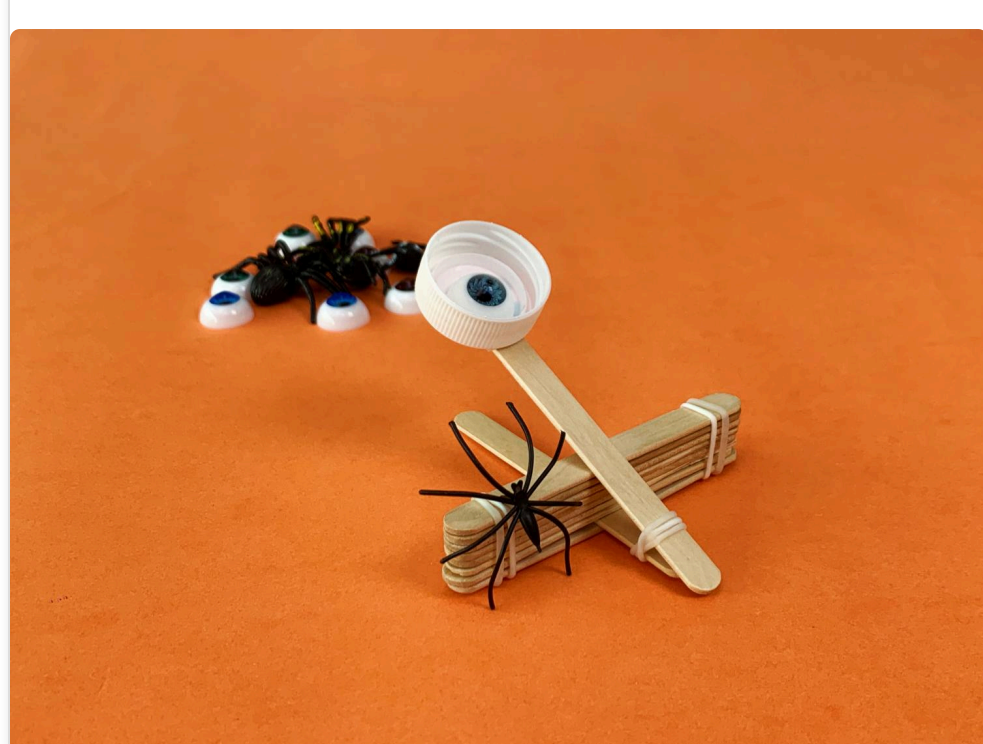


Make a Catapult That Launches Spiders!

October 12, 2024 / DIY / STEM Activities / Marvelous Mechanics Motion / Ages 6 - 8 / Spider Catapult



Make this super simple Halloween-themed catapult at home. Children will use it to launch sweets, spiders, and anything they can think of. They'll love this activity and won't be able to get enough of it. You can start a catapult competition at home to see who can launch items the farthest. Children will learn about levers, measurement, energy transformation, and other STEM concepts in the process.

- Age: 6-8
- Time: Less than 30 minutes

Materials Needed:

- 10 popsicle sticks
- Rubber bands
- Bottle cap
- Double-sided tape
- Eyeballs
- Spiders or sweets



Step-by-Step Instructions:

1. Use rubber bands to tightly wrap both ends of 8 popsicle sticks, binding them together.



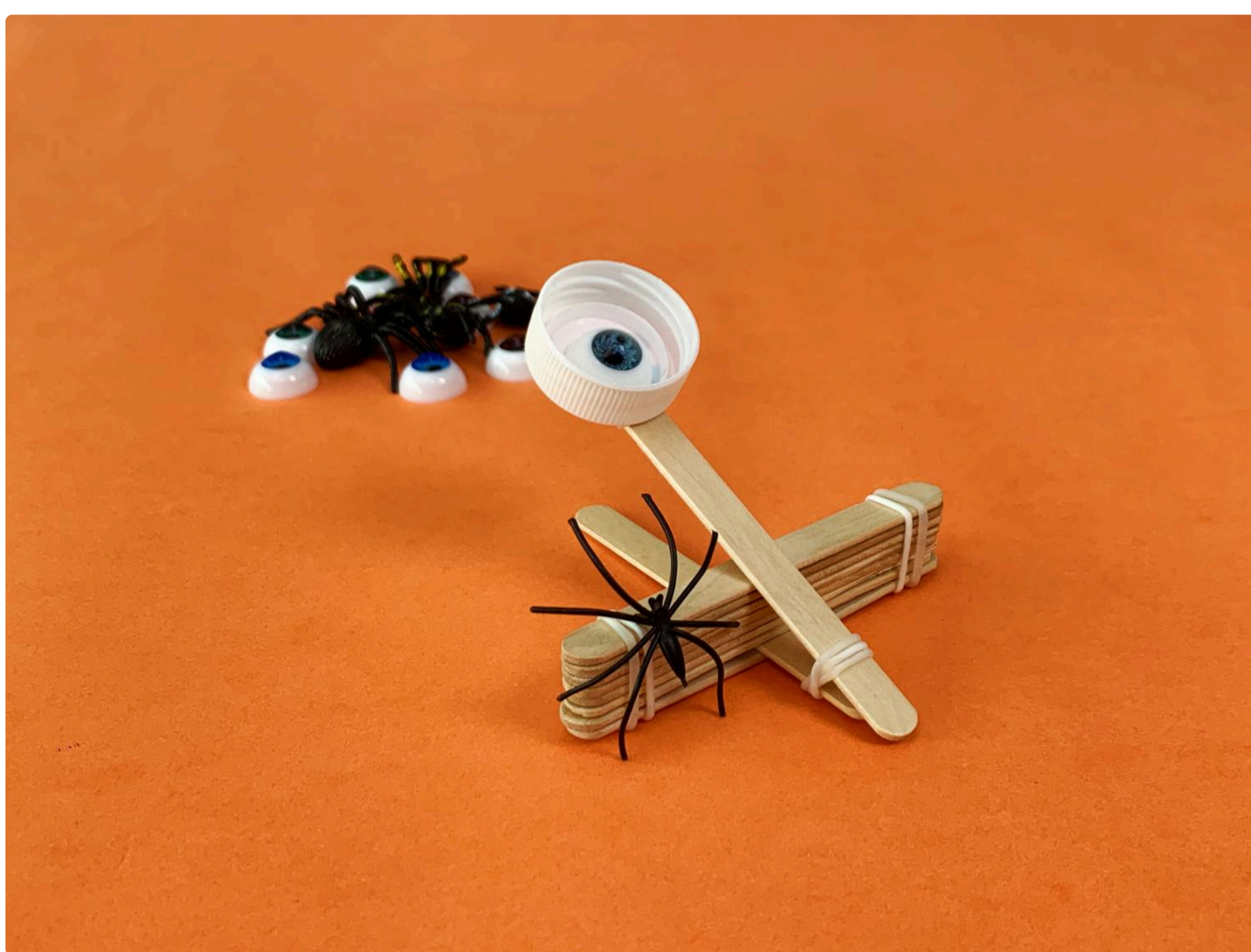
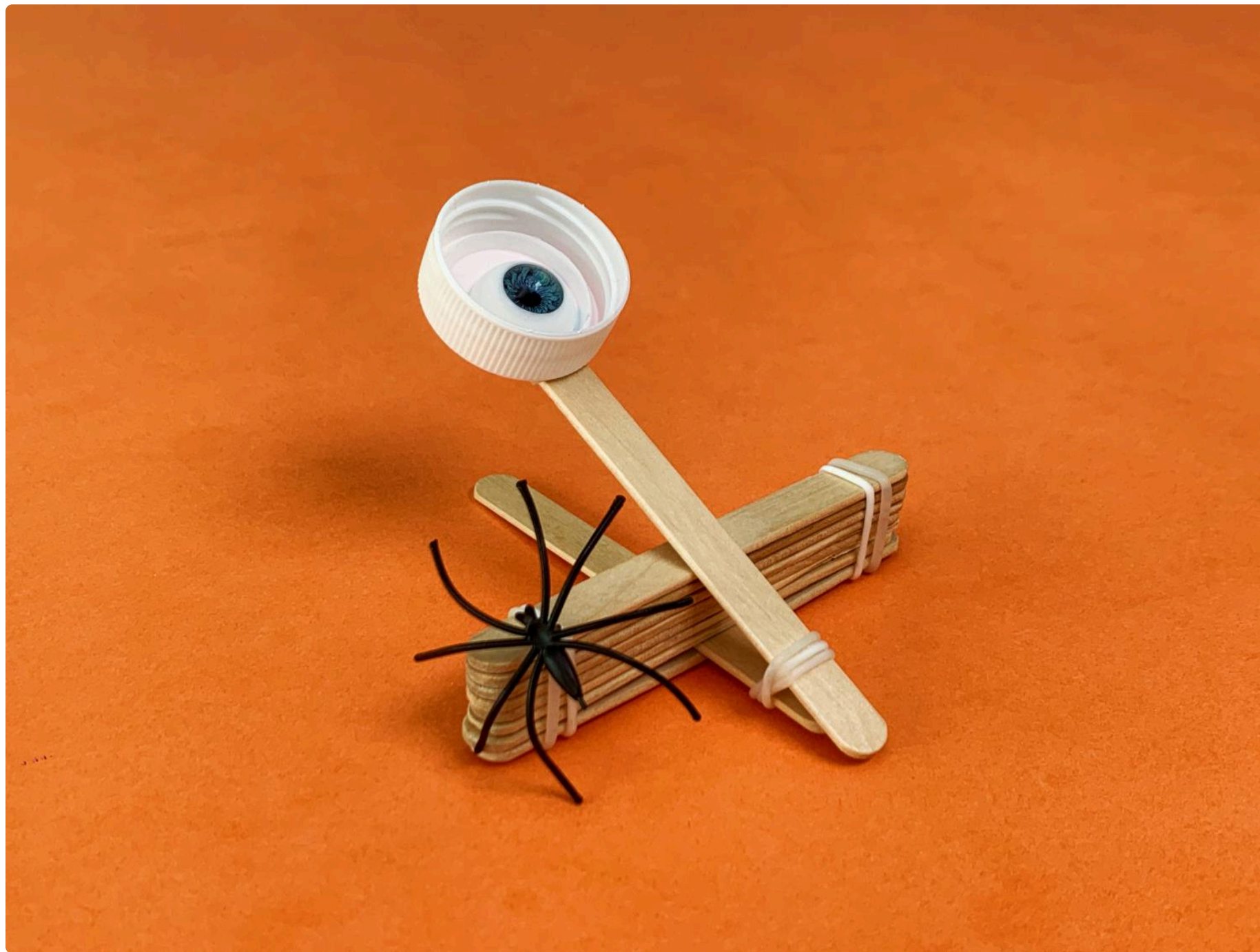
2. Take one popsicle stick and thread it through the middle of the 7th and 8th sticks you just bound together, ensuring the 9th popsicle stick is positioned in the centre.



3. Place the 10th popsicle stick on top, aligning it with the 9th stick.



4. Use glue to attach the bottle cap to the top of the catapult. Now, your Halloween catapult is ready. Try pressing down on the bottle cap and see what happens!



The Science Behind It:

When you've made a catapult, you've also created a simple lever model. Test how adjusting the length of the lever (for example, by tying two popsicle sticks together) or the position of the fulcrum affects whether objects are launched closer or farther.

This simple device utilises basic physical principles, demonstrating the process of energy storage and release: in the experiment, elastic potential energy is stored by stretching the rubber band. When released, the elastic potential energy quickly converts to kinetic energy, propelling the popsicle stick forward. This process showcases energy conversion and the inertial motion of objects. After launch, the popsicle stick experiences air resistance and gravity in the air, eventually slowing down and landing.

Further Exploration:

Can you identify factors that affect the launch distance of objects by changing the structure of the launcher or the magnitude of force applied?