

CRAZY CATAPULT

PROJECTILE MOTION SOUNDS LIKE A BORING PHYSICS TERM BUT IF YOU ARE A LOVER OF GAMES SUCH AS ANGRY BIRDS THEN YOU ARE GOING TO LOVE THIS AWESOME EXPERIMENT!

WHAT YOU WILL NEED:

- Icypole sticks
- Strong glue suitable for wood or hot glue with adult supervision
- Masking tape
- Matchbox, spoon or bottle Lid
- Rubber bands
- An adult to help



BUILDING YOUR CATAPULT

There are many different designs you can make, ask an adult to help you search online for images of popsicle catapult or icypole catapult, you will be amazed at how many variations there are. We have pictured a few for you here.

Once you have decided what you would like your catapult to look like you will need to start building. First of all you will need to create a sturdy frame, this may need to be stuck down to a table or a heavy base before you fire your catapult or you may find it takes off along with your projectile.

Once you have created a sturdy frame you can now use your rubber bands to attach a matchbox, spoon or bottle lid to your frame to act as the launcher. You will need to adjust the tension of your rubber bands to get them just right to launch your item. You will find that you may have to balance the tension of your rubber bands against the strength of your frame. If the rubber bands are too tight and the frame is not reinforced well enough then you may bend or snap it.



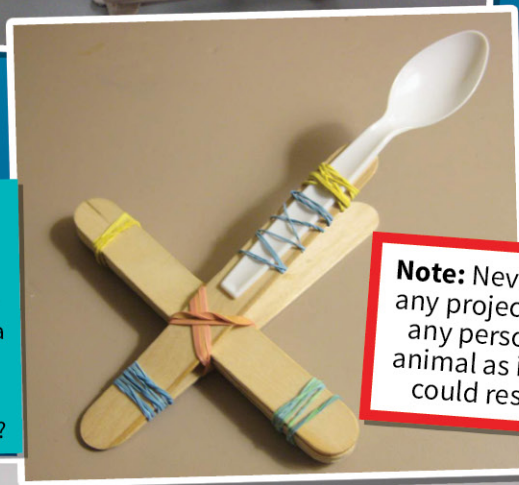
THE CHALLENGE

Once your masterpiece has been created and you are confident that it will launch the intended object then set yourself a few challenges and record the velocity and distance achieved by each. Here are a few to get you started:

Wind – Try using a free standing fan to one side of your trajectory, how far do you have to alter your aim to still hit your target?

Materials – Try using different materials to see how this affects the trajectory of your projectile. Materials you can change include rubber bands, spoon or even the actual projectile itself. Try using a ping pong ball, a rolled up piece of paper or even a marshmallow.

Just for fun – Try setting up a game by using a plastic cup or a bucket as a target. How many projectiles can you land in your cup?



Note: Never aim any projectile at any person or animal as injury could result.

GLOSSARY

Projectile: A fired, thrown, or otherwise propelled object.

Trajectory: The path of a projectile or other moving body through space.

Motion: The act or process of changing position or place.

Velocity: The speed of something in a given direction.

Tension: The state of being stretched tight.

