



Popsicle Stick Catapults

(Teen)

Supplies

- 5 popsicle sticks, whole
- 5 popsicle sticks, cut in half
- 3-4 Feet of string or Twine
- 1 sheet of paper
- Scissors
- Hot Glue

Instructions

- 1) Make the rectangular base by gluing two half sticks to the ends of two full sticks making a rectangle. Repeat the process by adding two more full sticks on top, then adding two more half sticks. Place the place so that the half sticks are on the bottom.
- 2) Attach two half sticks flat side to the middle of the long side of the base, inside the rectangle. We will call these the uprights moving on
- 3) Take two half sticks and attach them to the inside of the uprights and to the base. With the rounded side of the half sticks glued to the base. We will call these the supports.
- 4) Take one half stick and glue it across the uprights on the opposite side of the support sticks.
- 5) Take your sheet of paper and make a cut to the center. Using this cut fold the piece of paper into a cone, trimming the corners to make a basket.
- 6) Squish the top of the cone flat and glue that to one end of a whole stick, this is your throwing arm.

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Instructions Cont.

- 7) Take the string and fold it in half. Holding the folded tip, twist the string about 20 times. This will be easier if you have a friend to help and hold the folded tip.
- 8) Once you've twisted the string, fold in half and repeat process. Then fold in half once more and twist again.
- 9) Thread the rope in between the two full sticks of the rectangular base in front of the uprights. Use a popsicle stick to help thread if needed. Tie in place with a knot and move the knot to the side, and move the string so that it touches the upright sticks.
- 10) Take the final half stick and cut in half once more. Put the $\frac{1}{4}$ stick with the rounded edge in between the rope.
- 11) Twist the rope using the remaining $\frac{1}{4}$ stick towards the uprights, the more you twist the farther the ball will go.
- 12) Holding the $\frac{1}{4}$ th stick apply a generous amount of glue and attach the throwing arm. Hold for about a minute to ensure the glue sets.
- 13) To fire the catapult place a balled up piece of paper in the basket, pull back on the throwing arm then let go!

Learning Components

- Physics
- Visualize the transfer of potential energy to kinetic energy
- Observe gravitational force

Project Video Link



SCAN ME