



Building a Simple Catapult and Measuring Projectile Distance



GOAL

Build a simple catapult and test how far it can launch a projectile. Measure and record the distance.



MATERIALS

- 7 craft sticks (popsicle sticks)
- 1 plastic bottle cap
- 2 rubber bands
- 1 plastic spoon
- Tape
- Small projectiles (pom-poms, marshmallows, or crumpled paper balls)
- Measuring tape or meter stick
- Masking tape or chalk (for a starting line)
- Scissors (optional)



SAFETY FIRST

- Always launch away from people, pets, and breakable objects.
- Use small, soft projectiles only.
- Keep fingers away from the spoon when launching.



TESTING PROCEDURE

1. Place your catapult on a flat surface.
2. Use masking tape or chalk to mark a starting line for the front of the catapult.
3. Place a projectile in the spoon.
4. Pull down the throwing arm and release to launch.
5. Measure the distance from the starting line to where the projectile lands.
6. Record your result in the data table.
7. Repeat 5 more times.
8. (Optional) Try launching different projectiles or changing how far you pull back the arm. Record any changes you make.



THINK ABOUT IT

1. What was your farthest distance? _____
2. What do you think affected the distance of your projectile? (Examples: how far you pulled back, projectile size/weight, etc.)

3. How could you improve your catapult to make it launch farther?

BUILD YOUR CATAPULT

Follow these steps:

1. Stack 5 craft sticks together.
2. Wrap a rubber band tightly around each end of the stack.
3. Place 2 craft sticks across the top of the stack, near one end. Wrap a rubber band around them to secure.
4. Place 2 more craft sticks across the other end of the stack and secure with a rubber band. This forms the base.
5. Tape the plastic spoon to another craft stick to make the throwing arm.
6. Slide the end of the throwing arm under the front cross piece and rest it on the top cross piece.
7. Place the bottle cap in the spoon. Your catapult is ready!



DATA TABLE – Projectile Distance

Trial Number	Projectile Used	Distance (cm or m)
1		
2		
3		
4		
5		
6		
Average Distance		