

Lever: Catapult Launch



Materials

- *Simple Machines* Video: <https://bit.ly/littlesteamersvirtual>
- Large mixing spoon (wood or plastic is best)
- Paper Towel or Toilet Paper roll
- Rubber Band
- Objects to launch
 - Pom poms, cotton balls, wadded kleenex, etc...
- Data Table (attached)

Learning Objectives

- I **can** build a catapult and use it to launch objects
- I **can** use my hands or feet to measure how far an object travels
- I **can** identify examples of simple machines in the world around me

Skills



Math Skills



Hand-Eye Coordination

Exploration

Begin this activity by watching the *Simple Machines* video on YouTube—levers are highlighted at the very beginning, around 4:07, and again at 9:43. After watching the video clips, ask students:

- **What can you tell me about the levers in the video? Describe them.**
- **Were they all the same? What was similar or different about them?**
- **Have you ever used a lever? Tell me about it.**

Next, tell students that they are going to build a catapult and use it to launch some objects. First, they will build the catapult and **practice using it** to launch their objects (building instructions attached).

When they are ready, they will prepare the catapult by moving the roll, or **fulcrum**, as close to the head of the spoon as possible (fulcrum position #1) and launch their soft objects 5 times. They will use their *hands* or *feet* (pick one to use throughout the lesson) to measure how far the object traveled after each launch and record the data in the Data Table. After 5 successful launches, they will alter their catapult by moving the fulcrum away from the head of the spoon (fulcrum position #2). Then they will complete 5 more successful launches, again, measuring with hands or feet and recording in the data table. When done:







- **We tested two levers by moving the roll, or fulcrum. Which one launched the object *farther*?**
- **How do you know?**
- **How did you *measure* how far the objects went?**
- **Are there any other ways to measure distance?**



Data Table: Catapult Launch



Fulcrum Position #1		Fulcrum Position #2	
Launch #	Distance:  or 	Launch #	Distance:  or 
1		1	
2		2	
3		3	
4		4	
5		5	

Measuring with hands:



Source: Tiverton Primary School

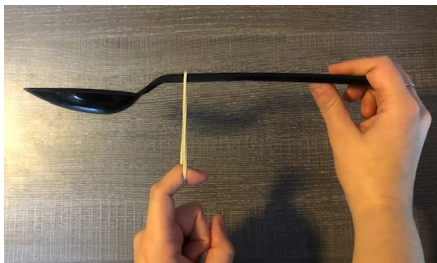
Measuring with feet:



Source: The Diamond Primary School

Building a Simple Catapult:

1.



2.



3.

