



OKLAHOMA
Agriculture in the Classroom

4-H Innovate Leadership Summit Punkin' Chunkin'

Please log in using the chat box with your:

First/Last Name, County

AND

**Let me know if this is your first Ag in the Classroom
workshop**



OKLAHOMA

Agriculture in the Classroom

Ag in the Classroom

Ag in the Classroom is a program that works by incorporating agricultural production and processing facts into ready-to-use core curriculum subjects such as math, language arts, science and social studies for teachers of grades Pre-Kindergarten through 12th grade. The lessons and activities teach students to be more knowledgeable consumers and reinforce the basics of nutrition and healthy foods.

Oklahoma Ag in the Classroom is a program of:



AITC Website

<https://agclassroom.org/ok/>



OKLAHOMA
Agriculture in the Classroom



ENHANCED BY Google



ABOUT US



LESSONS



RESOURCES



GRANTS



STUDENTS





LESSONS



BY LESSON TITLE



BY AGRICULTURAL
TOPIC



BY GRADE LEVEL



OTHER CATEGORIES



LESSONS IN SPANISH



CURRICULUM MATRIX

Lessons by Title

[View all lessons with all descriptions and links](#)

All Lessons are aligned with Oklahoma Academic Standards

- [About Pumpkins](#)
- [AC Magruder and the Magruder Plots](#)
- [Ag Education and Extension: William Bentley](#)
- [Ag in My Classroom](#)
- [Ag in My Community](#)
- [Ag in the Outfield](#)
- [Ag in the Playing](#)
- [...](#)

Lessons by Title

A

[About Pumpkins](#)

Grades 1-3: ELA

Students will read about pumpkins and answer questions to show comprehension.

[Pumpkin Lessons and Resources](#)

[AC Magruder and the Magruder Plots](#)

Grades 3 and 9: SS, ELA

Students will read about the Oklahoma Red Dirt Groundbreakers who is best known by the OSU Experimental Winter Wheat Plots named in his honor.

[Oklahoma Red Dirt Groundbreaker Lessons](#)

[Ag Education and Extension: William Bentley and Bermuda John Fields](#)

Grade 3: SS, Math

Students will read about two of Oklahoma's Red Dirt Groundbreakers and discover the impact they had on Oklahoma Extension Offices.

[Oklahoma Red Dirt Groundbreaker Lessons](#)

- ▶ Pumpkin Globes
- ▶ Pumpkin Seed Art
- ▶ Pumpkins by the Pound
- ▶ Pumpkins, Squash, and Other Cucu
- ▶ Punkin' Chunkin'
- ▶ A Purple Cow

- ▶ A Rafter of Turkeys
- ▶ Read Before You Eat

Punkin' Chunkin'

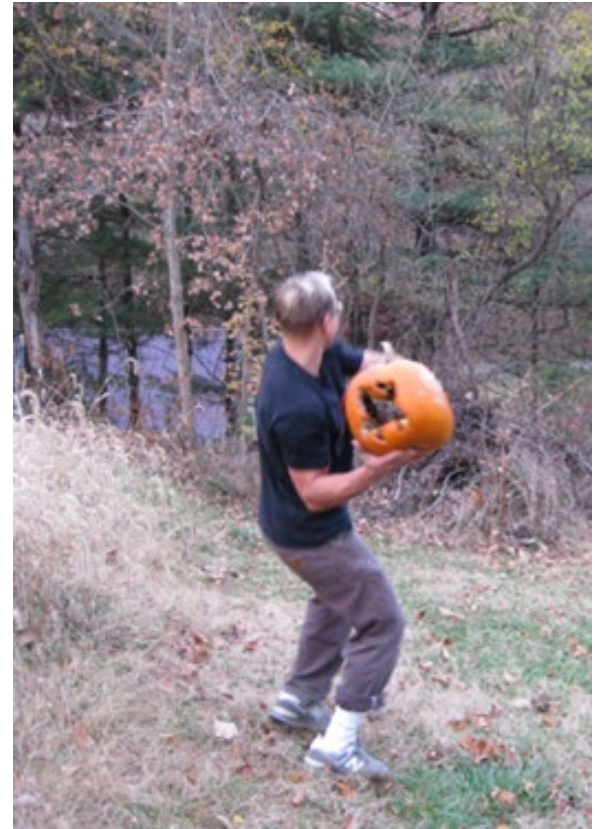
Grades 3-5: Science, STEM

Students will design and build prototypes of pumpkin catapults to launch mini pumpkins while exploring the phenomenon of force and energy. Students will measure and record the results of launching the pumpkins to discover the effect of force on the motion of the pumpkin and to predict future motion of the pumpkin. Students will design, test, and revise the catapults based on the measurements while discovering ways to convert energy from one form into another and learning that gravitational force is directed down.

Have you ever chunked a pumpkin



Have you ever chunked a pumpkin



<https://www.youtube.com/watch?v=Q44gcKANlow>

Discuss the Video

1. What did you notice in the video that made the pumpkin launching successful?
2. What caused the pumpkins not to launch well?
3. How can we design a catapult that will launch a pumpkin?

Punkin' Chunkin' Challenge

You are entering the Punkin' Chunkin' Challenge. You can only use supplies provided to build the catapult. The challenge is to design a pumpkin catapult which will launch your pumpkin farther than anyone else's.



Materials:

- craft sticks of varying sizes
- rubber bands, yarn, masking tape, pipe cleaners, etc.
- water bottle caps, condiment cups, spoons, etc. for bucket of catapult
- cool temp hot glue guns
- target (bulls-eye, bowl, solo cup wall, tape line, etc.)
- yardstick, ruler, or tape measure
- pumpkins (pom poms)

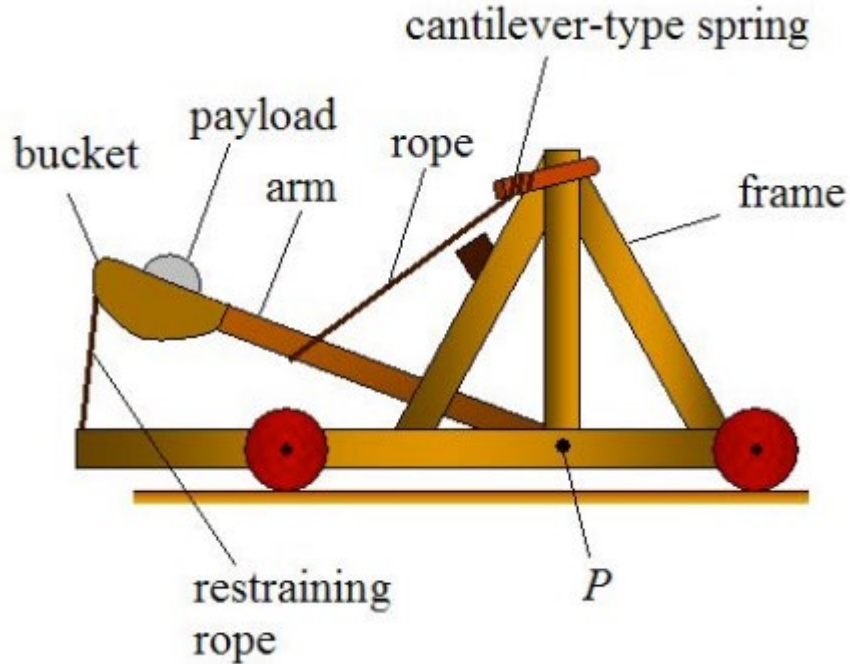
Explaining Pumpkin Catapults

When you pull down the craft stick or pull back the spoon (your lever arm), you add energy to the catapult.

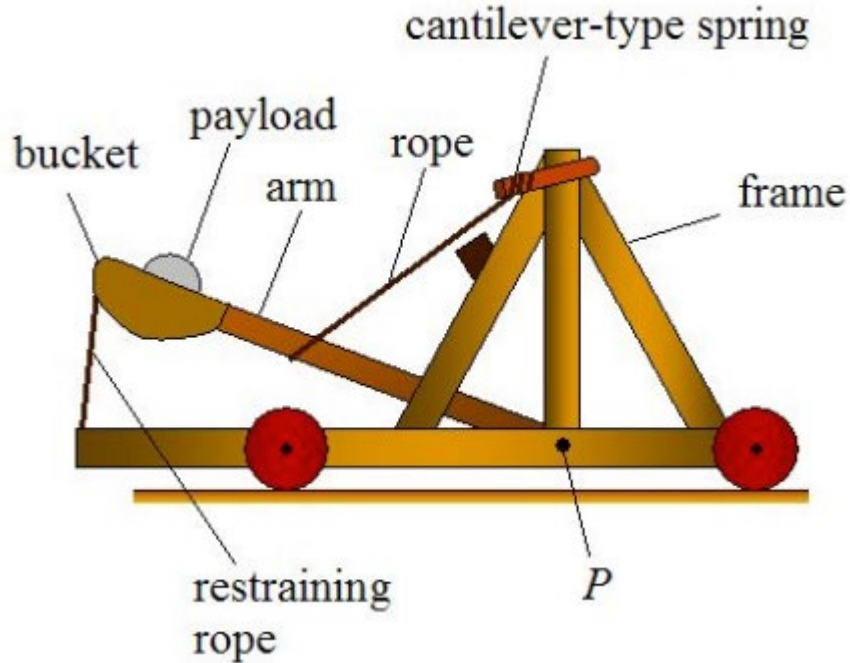
This energy is stored in the lever arm as potential, or stored, energy.

The catapult uses potential energy stored in a craft stick or spoon as you bend it.

When you let go, this stored energy is released, converted into kinetic energy and transferred to the pumpkin, which then flies through the air.



Explaining Pumpkin Catapults

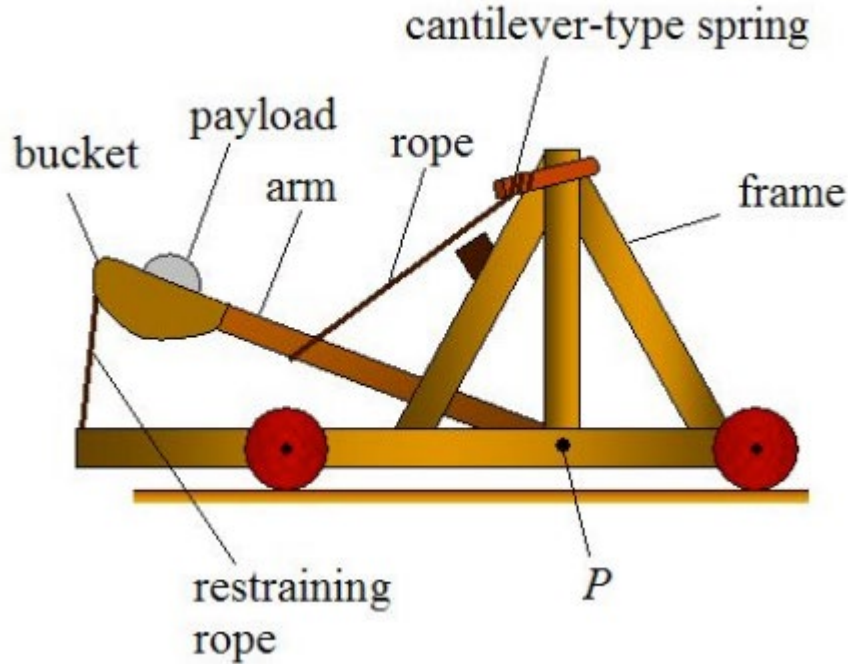


The position of the lever arm when the pumpkin becomes airborne determines the aim of the pumpkin.

Does the amount of energy with which you're pulling down the lever arm factor in as well?

Do you predict your pumpkin will fly higher and farther when you push your lever arm down farther?

Explaining Pumpkin Catapults

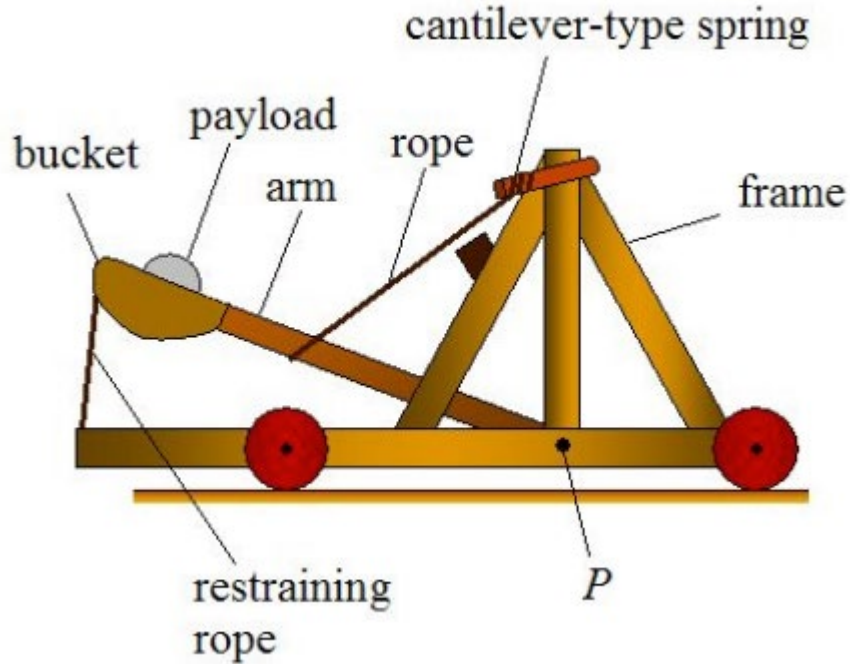


When you bend your lever arm, you load your lever arm with energy.

When you let go, this energy is released and converted to kinetic energy, or energy of motion.

Most of this energy transfers to the pumpkin, which launches through the air.

Explaining Pumpkin Catapults



Pushing the lever arm down farther takes more effort from you.

Bending farther means more potential energy gets stored in the lever arm, and when you let go, all this potential energy is converted into kinetic energy, so the pumpkin flies through the air at a higher speed, or with more force.

Watch to see if your pumpkin flies higher and farther.

Trial Launch Data for Distance

After building your catapult, you need to test it. You get 4 trial launches. Remember the goal is to launch your pumpkin the farthest.

The purpose of the trial launch is to work out all the "bugs" in your catapult.

Each time you launch the pumpkin, analyze the results.

Final Launch Data for Distance

Measure the distance your pumpkin traveled through the air and record it. Do not include the distance it rolled.

What modifications did you make to increase your launch distance?

What worked?

What did not work?



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AITC is a cooperative program of the Oklahoma Department of Agriculture, Food and Forestry, the Oklahoma State Department of Education and the Oklahoma Cooperative Extension Service.

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