

First Quarter STEAM Home Project: Pumpkin Catapult

Presentations will be on October 26, 2018 beginning at 10:30 AM

Each quarter students will be expected to complete one STEAM challenge/project at home. Students will most likely need some parental involvement to complete.

Materials needed will often be recycled materials or inexpensive supplies. Some supplies may also be provided from the school if asked for in advance. The use of purchased kits is discouraged, as it limits individual design and creativity.

Projects are meant to be fun, creative learning experiences, and students will get more out of the experiences if they put in more effort. These simple projects all incorporate science, technology, engineering, arts, and mathematics.

Project/Challenge: Construct a catapult that will launch a pumpkin the farthest distance.

Materials:

- Mini pumpkins (real, decorative, or small candy pumpkins) – Heavier pumpkins will require larger and more elaborate catapults.
- Plastic spoons
- Rubber bands in a variety of sizes
- Masking tape or painters' tape
- Popsicle sticks (large and small)
- Measurement tools such as tape measures and yardsticks
- Padded test area such as carpet/rug (can also be launched outdoors)

Assignment:

- Construct a catapult that will launch a pumpkin the farthest distance.
- Complete data record sheet including materials used, blueprint, test results, and answering the following questions: What worked well? What was challenging? How did I improve my design?
- Complete grading rubric and turn in on Friday, October 26, 2018 at the start of school.
 - Projects are worth up to 28 points, based on time and effort put into each project, as well as research and learning outcomes.

Additional Resources:

The History of Catapults (The History Channel): https://www.youtube.com/watch?v=ErW_RVTokbo

Catapult Animations: <http://www.redstoneprojects.com/trebuchetstore/catapultanimation.html>

Storming the Castle: <http://www.cbc.ca/kidscbc2/the-feed/storming-the-castle>

Please contact a teacher with any questions. Sign and date that you are aware of the STEAM project as well as the due date.

★ If you are not in attendance on October 26, 2018 it is your responsibility to schedule a time to present within four school days of the assigned date.

Student Signature

Date

Parent Signature

Date

 Name

Can you construct a catapult that will launch a pumpkin the farthest distance?

<p><u>Materials:</u></p>	<p><u>Tests:</u></p> <p>Distance 1: _____</p> <p>Distance 2: _____</p> <p>Distance 3: _____</p> <p>Distance 4: _____</p>
<p><u>Blueprint:</u></p>	<p>What worked well?</p>
	<p>What was challenging?</p>
	<p>How did I improve my design?</p>

★ You may use the above table or put on a separate page either using lined or blank paper.

STEAM Project Rubric

Name

Date

Category	4 – Excellent	3 – Good	2 – Fair	1 – Needs Improvement
Who Did the Work	Student did more than 75% of the work on the project.	Student did 50-75% of the work on the project.	Student did 25-50% of the work on the project.	Student did 25% or less of the work on the project.
Time Spent on Project	Student spent more than six hours on this project.	Student spent five to six hours total on the project.	Student spend three to four hours on the total project.	Student spent one to two hours total on the project. (This included planning and research). *Please document time, dates, and what you did – can use the back of this paper)
Planning and Preparation	Student worked the project throughout the quarter after assigned.	Student worked on the project for several days during the week it was due.	Student worked on the project for several days before it was due.	Student did the project the day before it was due.
Technology/Research	Students looked at four or more websites to research this project. (Provide a list attached to rubric)	Student looked at a minimum of three websites for ideas for this project. (Provide a list attached to rubric)	Student looked at a minimum of two websites to research this project. (Provide a list attached to rubric)	Students look at a minimum of one website for this project. (Provide a list attached to rubric)
Learning as a Result of the Project	Student learned four or more new concepts. (Provide a list attached to rubric)	Student learned three new concepts. (Provide a list attached to rubric)	Student learned two new concepts. (Provide a list attached to rubric)	Student learned at least one new concepts. (Provide a list attached to rubric)
Student Recording Sheet	Completely filled in, detailed and neat.	One of the following: incomplete, sloppy, or very little information	Two of the following: incomplete, sloppy, or very little information	Incomplete, sloppy, and very little information (all three).
Final Project Appearance	Exceptional effort put into the appearance of the project.	Good effort put into the appearance of the project.	Moderate effort put into the appearance of the project.	Very little effort put into the appearance of the project.

_____ points out of 28 possible points

I, _____, used the above rubric in planning my project and have honestly self-evaluated my effort and project.

Student Signature

Date

Parent Signature

Date