



Building Catapults at the Central Oklahoma Math Circle

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About the Central Oklahoma Math Circle

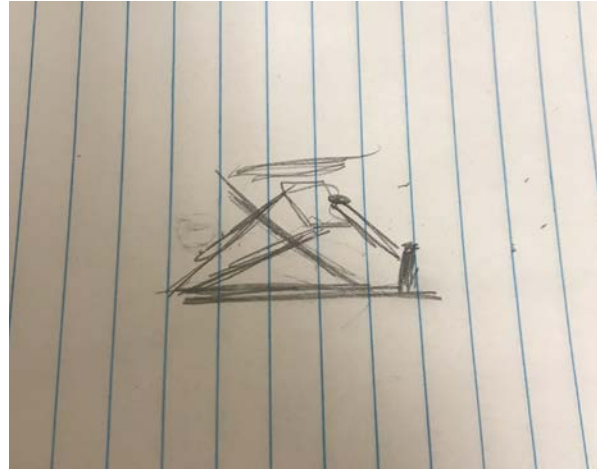
- U.S. Grant High School
- Target audience is females
- Two hour meetings
- We've grown!
- Our website:
<https://elizabethlaneharvard.weebly.com/central-oklahoma-math-circle.html>
- We are Funded by the National Association of Math Circles

Why build catapults?

- It provides a connection between applied mathematics and physics.
- It is a hands-on activity that takes students through the experimental process.
- The unprompted discussions that come up are great.
- It is an adaptable activity.

Our Instructions

- Plan/sketch your design for 5 minutes
- Build your catapult.
- Test the catapult.
- First Goal: 6 ft.
- Adjust.
- Re-test catapults
- New Goal: 8ft
- Final Goal 10 ft.



Materials



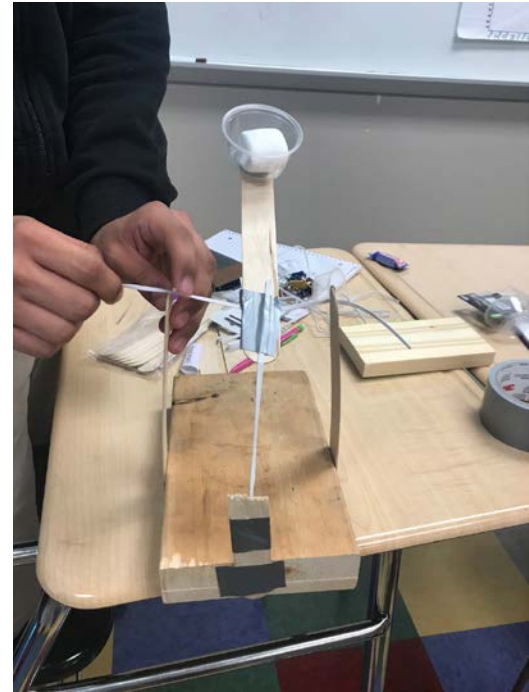
- Scissors
- Velcro
- Wire
- Blocks of wood



- Yarn
- Toothpicks
- Popsicle sticks
- Stapler

Adaptability

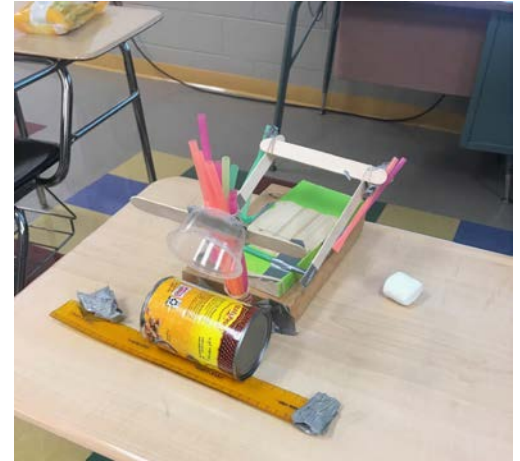
- Can be shortened by cutting planning and simply reaching goal one.
- Can be more involved by encouraging discussions about potential problems prior to building the catapult.
- Can be more thorough by requiring approval of plan before building, discussing topics such as the angles of projection, weight, force, etc.



Observations



- Most groups worked well together.
- One group had poor communication and required the most adjustments.
- One group that had excellent communication had the sturdiest and more accurate catapult.



Resources

<http://www.cpalms.org/Public/PreviewResourceLesson/Preview/127966>

https://www.scholastic.com/content/dam/teachers/blogs/genia-connell/migrated-files/catapult_challenge.pdf

<https://elizabethlaneharvard.weebly.com/central-oklahoma-math-circle.html>



Thank you!