

# Before we begin:

- We want to know who is here! Please introduce yourself in the chat: Name. School.
- Please mute your microphone to reduce background noise.
- We will leave time for Q & A. Please submit your questions via the Google form that will be shared in the chat.
- This presentation, along with the questions and answers, will be posted on the WESO website.





# On Target

**WESO  
2022**

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# Event Format

- GRADES: 2, 3, 4, 5
- TEAM SIZE: 3 participants (per grade)
- DURATION: 30 minutes

The detailed event description can be found at: <https://wesoscience.org/events/>

# Concepts Covered

- Factors affecting the flight of the rockets
- Consistency in the build and launch
- Understanding of the forces acting on the rocket in flight
- Ability to work as a team

# EVENT SUMMARY

- Teams build exactly six rockets using available materials.
- Teams will launch rockets one at a time trying to get closer to a target with each launch.
- 4th & 5th graders will also take a short 5 question quiz. (*multiple choice*)
- Final placement is determined by total distance from the target (the best 3 out of the 6 launches) discounted by the quiz

# EVENT FLOW

- Teams will check in and wait in the on deck area
- 4th & 5th graders will take a quiz.
- Teams will proceed to the build area to build their straw rockets.
- Teams will move to the Range when they are ready to launch their rockets.

# EVENT FLOW CONTINUED

- Teams will have 6 launches
- They will receive their launch measurements from the range judges.
- When they are finished launching they will take their measurements and exam to the scorer's table.

# Building

## Materials Provided

- Straws
- Clay
- Tape
- Index Cards
- Pencil
- Scissors
- Ruler
- Measuring Spoons (you may bring your own)
- Plastic Knife

- No Strict Time Limit
- Rockets must be between 10 cm and 25 cm in length.
- Can use Materials provided to make:

Launch Guides

Measuring Guide

Aiming Guide



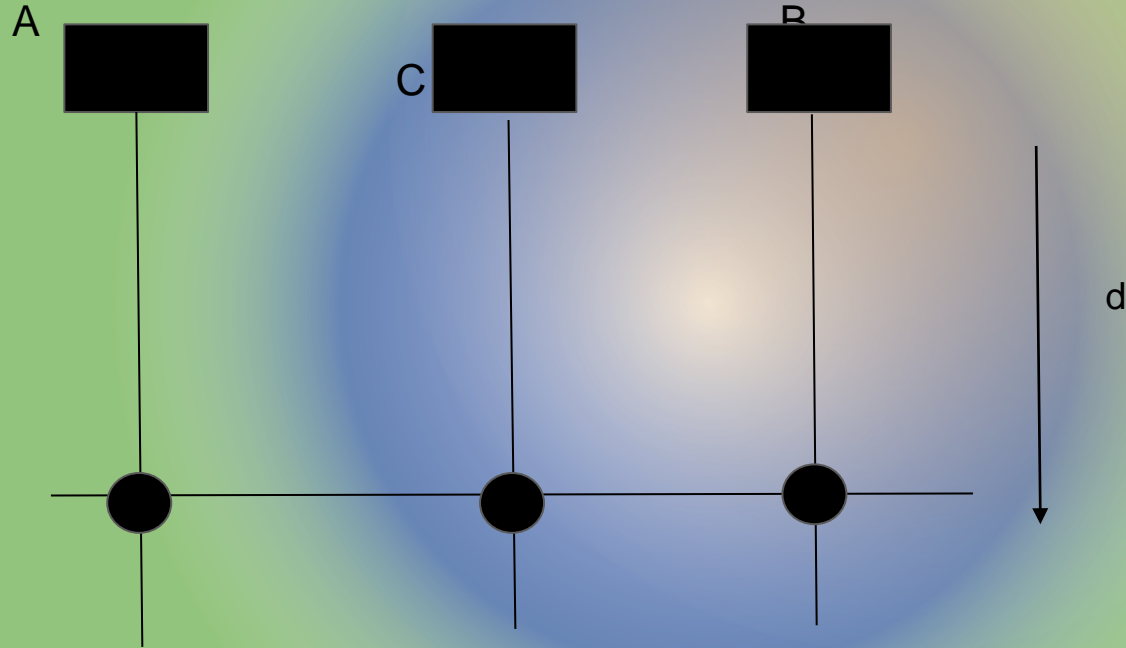


# LAUNCHING

- MUST share launch duties equally among team.
- Must wait for ready-to-launch signal before each launch.
- No time for major modifications to rockets once at the launch pad. Minor repairs are okay.
- Judges will give feedback that should be incorporated into subsequent launches.

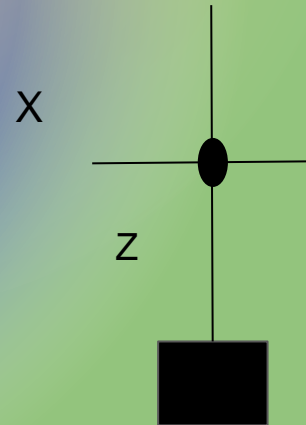
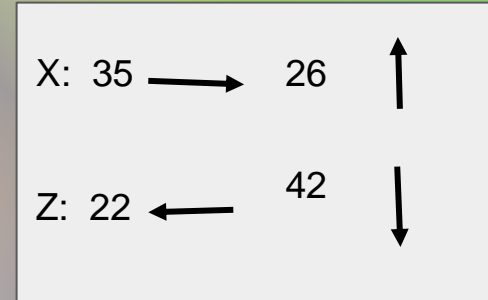


# The Range



# Feedback

- Judges will measure distance from target line, distance from center line, and distance from target.
- Judges provide feedback graphically after each launch



# SCORING

- Total of Best 3 Launches
- 4th & 5th Grade Launches reduced by quiz score
  - 5 questions (each correct answer will reduce distance by 2cm)

## Example:

Launch Distances: 91 cm, 52 cm, 19 cm, 2 cm, 11 cm, 15 cm






Best 3:  $2\text{cm} + 11\text{cm} + 15\text{cm} = 28\text{ cm}$

Quiz Score: 4 right answers ( $4 \times 2\text{cm} = 8\text{cm}$ )

Team Total Score:  $28\text{cm} - 8\text{cm} = \underline{20\text{ cm}}$

## WESO Equipment and Supplies for On Target

Supplies (consumables) given annually, thus far.

<p>Straw Rocket Launcher Supplied in 2022</p>		<p><a href="http://www.pitsco.com/Straw_Rocket_Launcher">http://www.pitsco.com/Straw_Rocket_Launcher</a></p>
<p>Balance Arm Scale</p>		<p>Hand made – given out in 2015 - 2018</p>
<p>Precision Straws</p>		<p><a href="http://www.pitsco.com/Precision_Straws">http://www.pitsco.com/Precision_Straws</a></p>
<p>Clay</p>		<p>Crayola Modeling Clay. Also available in crafts sections of many stores locally. <a href="http://shop.crayola.com/modeling-compounds/clay/crayola-modeling-clay-5703001004.html">http://shop.crayola.com/modeling-compounds/clay/crayola-modeling-clay-5703001004.html</a></p>
<p>Index cards Oxford Ruled 3x5 cards</p>		<p><a href="http://www.amazon.com/gp/product/B002OB49J">http://www.amazon.com/gp/product/B002OB49J</a> Ω</p>

# Event Materials distributed by WESO

Ask your Head Coach for  
these items!

# Additional Resources

- Study guides
- Websites
- YouTube
- Prior Students

## COACHING ADVICE

- Help students discover the variables (1 at a time) and help them develop the tools to fix or control them.
- Focus on teamwork and problem solving
- Help students figure out how to build 6 similar rockets.
- Try to launch rockets at every meeting.
- Make sure they support each other.
- Have a mock competition between team members
- Have Fun!!

# Questions after tonight?

**Please submit questions about this event to [weso.events@gmail.com](mailto:weso.events@gmail.com). Enter the event title in the subject line. Answers will be posted on the WESO Blog. You can sign up to receive the blog posts at [wesoscience.org](http://wesoscience.org).**

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# QUESTIONS NOW?



- Please submit your questions now using the Google form that was shared with you in the chat.
- We will answer live and post all questions and written answers to the website following the meeting.

Thank you for serving as an event coach and helping us bring back WESO to our community!