

## SPACE – THE POSSIBILITIES ARE LIMITLESS!

From figuring out how to redirect asteroids to finding planets that could support life, scientists are always collecting information about our universe. Scientists are on a quest to learn more about a distant planet and its largest moon. Can your team deliver fragile, but highly important supplies to this moon's surface?

## THE CHALLENGE: Deliver multiple payloads to different locations.

### Device Specs and Performance



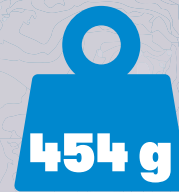
Each payload must contain **one standard tennis ball**

**1**

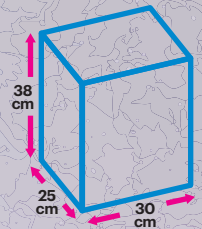
**Only one payload per launch**



**5 min** max including setup and all launches

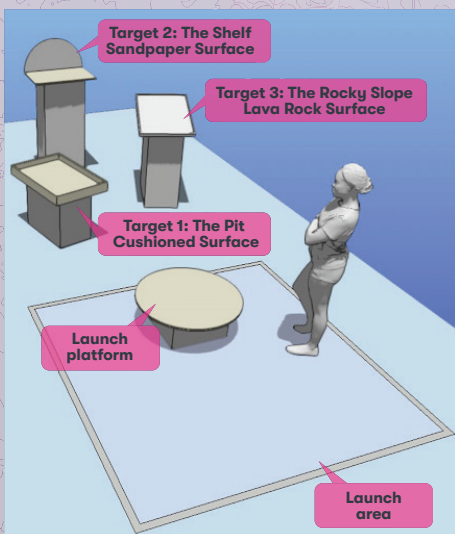


Maximum weight per launch: **454 g**



Max size of payload prior to launch: **25 cm x 30 cm x 38 cm**

### Rig Diagram



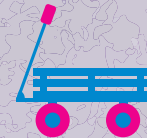
### Launcher Specs

**1**

One launcher per team




Must be triggered from launch area



Must be able to transport and set up on your own

### Success Criteria

- The entire tennis ball must be on the target surface. 
- The minimum number of payloads to be delivered is listed below.

Grade(s)	Payload on Targets	Distribution
4-5	3	1 on each target
6	4	2 on target of your choice + 1 on each of other two targets
7-8	5	2 on 2 targets of your choice + 1 on remaining target
9-12	6	2 on each target



# 2024

## Tech Challenge Safety Guidelines

# DO

### Wear protection

ANSI-approved goggles, helmets and close-toe shoes must be worn while testing.



### Listen and be alert

Pay attention and follow the judges' directions.

### Have a Safety Officer

Identify one student to oversee safe design and implementation.



### Transport safely

You must have a safe way to transport your device without help.

# STAY SAFE

# DON'T



No flammable liquids or gases



No pressurized gases > 5 psi



No animals



No horseplay



Don't ignore safety labels



No climbing

## Spirit of the Challenge

The Tech Challenge emphasizes the importance of engineering solutions that would be practical in real life. Test rigs involve small-scale representations of real-world conditions. Teams should develop designs that represent real-life solutions.

The Spirit of the Challenge is an important factor in scoring. The best engineering journals document an understanding of real-world factors and contain a detailed explanation of how your design might have practical, real-life applications. Teams should expect judges to press them on this issue and will be asked questions such as "How would your design work in real life?" A good explanation of how their design approach is compatible with the Spirit of the Challenge will have a positive influence on the team's score.

While store-bought solutions are not prohibited, they are not in the Spirit of the Challenge.

## Engineering Journal

- Submit one journal as a PDF
- Handwritten or typed/must be legible
- Keep a detailed record of all your teams' activities

Don't forget to read the full rules at [thetech.org/thetechchallenge/rules](http://thetech.org/thetechchallenge/rules)