The Tech Challenge

GRAVITATE to NAVIGATE 2025

RULES

THE 2025 SCENARIO:

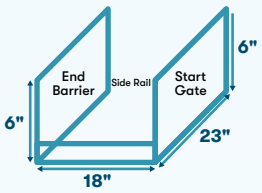
There are many ways to get from here to there and back again. Some vehicles are powered by gasoline, electricity, hydrogen or even solar. In this year's Challenge, teams will use gravity to power their devices. Is your team ready to build a vehicle that can go the distance and document your journey?

THE CHALLENGE: Build a device that uses the power of gravity to traverse multiple tracks.

Device

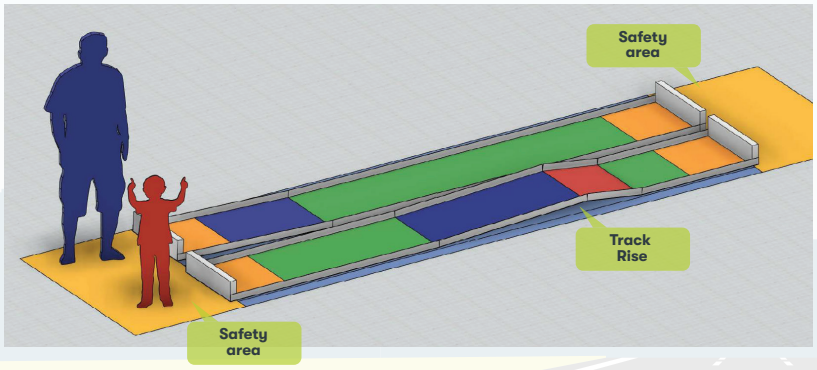
Each device must carry a payload of **one standard tennis ball**

The source of **forward movement must come from gravity**



Device must fit in **18" x 23" x 6"** start box

Rig Diagram



Teams will complete four runs on the two tracks (down and back on each track).

Success Criteria

The run is a success if the payload and parts of the device touching the track cross the finish line into the end box.

Performance

5 min max including setup and all runs

No new materials added between runs

Reconfiguration of existing materials is allowed

The only materials that may be used for the next run are:

- The parts of the device that have successfully crossed the finish line.
- Any materials not touching the track that are carried on the device.

Track Rise by Grade

Grade	Track Rise (H)
4–6	2.5" (6.4cm)
7–8	3.5" (8.9cm)
9–12	4.5" (11.4cm

Don't forget to read the full rules at ***thetech.org/thetechchallenge/rules***

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2025 Tech Challenge Safety Guidelines

STAY SAFE

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.

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 are practical in real life. Test rigs involve small-scale representations of real-world conditions.

The Spirit of the Challenge is an important factor in scoring. The best engineering journals document an understanding of real-world factors. Teams should expect judges to ask questions such as "How can the ideas you've used for your solution be applied in real life?"

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

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