The Tech Challenge | **Kenya**

Rules
The Tech Challenge 2026: Survive the Storm

⚠️ **Important Note About the Rules**

Clarifications and additions to the rules may be made. When changes occur, registered teams will be alerted by email. See the website for more information: **thetech.org/kenya**

WhatsApp No: +254 713 247170
Email: ttckenya@thetech.org
Website: thetech.org/kenya

🌍 Scenario

Sometimes, strong winds and heavy rain can suddenly hit a town or village. When this happened in Kisumu County, Kenya, roofs flew off classrooms, and homes and buildings were damaged. People had to find safe places to stay until the weather got better. This made it hard for students to learn and for families to feel safe, showing how important it is for buildings to be strong enough to survive bad weather. Imagine strong winds, like those in Kisumu, may come to your community. How could you protect your town?

The Challenge

Use locally available materials around you (preferably recyclable and not store bought) to **build, test, and present a small, lightweight structure** that will protect the buildings in a town from strong winds.
You can't build a whole town! So you will use scale models instead.
• Buildings = stacks of paper cubes

Summary

• At events, The Tech will provide a rig that includes a raised build area, fans, and paper cubes.

• Before the event, each team will design and build a structure that can protect **27 paper cubes** from the wind.

    • The structure MUST fit into the large shopping bag provided by The Tech Team.

    • The structure and the shopping bag cannot weigh more than **600 g.**

During the Showcase event each team will demonstrate their structure on the rig.

Each team will have **6 minutes** to:

• Place the 27 paper cubes in stacks on specific sections of the raised build area.

• The team will take their protective structure out of the large shopping bag and assemble it on the build area as directed in the rules.

• The fans will blow towards the paper cubes three times as directed in the rules.

• The team will have an opportunity to restructure and shape the protective structure in-between each timed performance.

What structure will you build to protect this "town" from the wind?

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👥 Teams

1. A team can include 2 to 6 students.
2. Your team level is set by the highest grade represented in your group.
3. Every team member has a responsibility to follow all safety instructions and use tools with care!

🌐 See the **website** to print out and post the **Team Safety Rules Poster** and review the **Team Guide.**

Advisers

1. All teams *must* have an adult adviser. Team solutions must be designed, built, tested, and presented by team members, **not the adviser.**
2. The adviser role is to guide, facilitate, and mentor.
3. The adviser cannot be a Tech Challenge judge.
4. An adviser may work with no more than two teams. It is important that advisers ensure each team receives the necessary level of attention.

🌐 For more information on this role, see the **Adviser Guide** on the **website**.

⭐ Spirit of the Challenge

The Tech admires every student who tackles The Tech Challenge. We value your creative thinking and encourage teams to pursue surprising solutions that are better than anything we might imagine.

Remember that this is a challenge, not a competition. Teams work to beat the challenge, not other teams. Work together and keep trying when the going gets tough. Failures are a normal part of the process. Be ready to tell us about your journey, even the times when your team felt like quitting. Your journal, interview, and device demonstration do not need to be perfect to be amazing!

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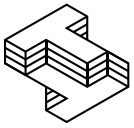
👷📋 Test Rig

The Tech Challenge team will provide a rig for use during the Test Trials and Final Showcase.
Please **DO NOT** bring a rig to The Tech Challenge Test Trials or Showcase Day.
The rig is on two tables, but testing at your school can be done on any table or on the floor.

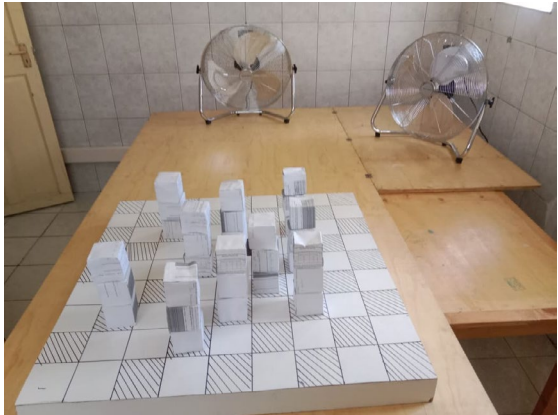🌐 (All dimensions are approximate.) See the website for the **Home Testing Guide** including detailed schematics of the Test Rig.

A. 2 Fans	**B.** A Build Area	**C.** Paper Cubes
Figure 1: Photograph of The Rig from the side	Figure 2: Photograph of The Rig from the Build Area	

The Rig Includes:
Fans
- At the Showcase wind will be made with two fans that are provided by The Tech.
- Both fans are 50.8 cm three-speed high-velocity fans (Maxx Air HVFF20S or equivalent). They stand upright on the table.
- The two fans are placed as shown in Figure 1, with a 45 degree angle between them.
- For Grade 10-F4 (For SS) only, the raised build area is moved 30 cm closer to Fan 1.

FAN 1 ← Build Area moved 30cm closer to Fan 1 for Grades 10-Form 4   **BUILD AREA**

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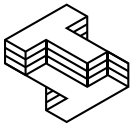
Build Area

The raised build area is where you place the paper cube stacks and put your protective structure.

- It is shaped like a square with each side measuring 91.4 cm long.
  - This is about the size of a small desk, or three standard 30 cm rulers placed end-to-end.
- The raised area sits 7.9 cm above the table.
- The top surface is smooth with 81 grid squares.
  - Each grid square is a 10.2 x 10.2 cm square. The grid squares consists of 1 black square, white squares and grey shaded squares
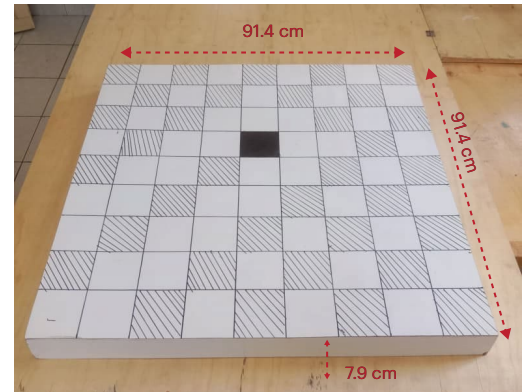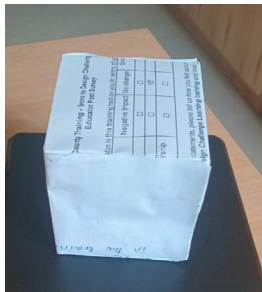

Figure 5: Photograph of Build Area

Paper Cubes

- The paper cubes are the "buildings" that you are protecting from the wind with your protective structure.
- Paper cubes used during the Showcase will be provided by the Tech Team.
- When testing at home or school, teams are expected to build their own paper cubes.

	• Each paper cube is 7cm (L) x 7cm (W) x 7cm(H). • Each cube weighs approximately 5 grams. • Each team will use 27 paper cubes.

Cubes can be placed in stacks of 2 or 3.
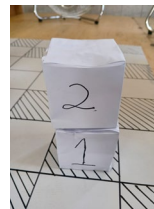
🌐 See the website for the **Home Testing Guide** and directions to build a paper cube.

During the Structure Performance at the Showcase event each team will decide where to place the paper cubes in the build area. When placing the cubes, the team will need to follow these rules:
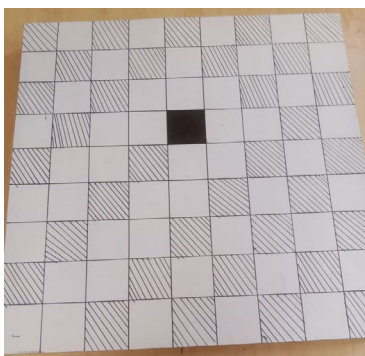
	1. You are **required** to fill the black square with a cube stack. 2. Teams may place their other cube stacks anywhere on the grey shaded squares. 3. Cube-stacks cannot be placed on any white squares.

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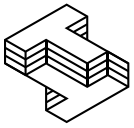
⚙️ Protective Structure Rules

Each team will design and construct a protective structure to be placed on a raised build area. These structures must shield the paper cube stacks from wind, ensuring their stability and use safeguard to secure them. It can be anything you can imagine, as long as it follows these rules:

Size and Weight Rules

1. All parts of your structure must fit inside the provided shopping bag at the start.
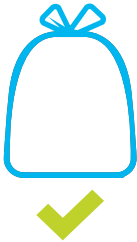   - At the beginning of the performance period, the shopping bag must be tied up with all structure pieces inside.
2. The shopping bag should only contain your structure.

The Bag dimensions are:
Height: 45 cm
Width: 32 cm

The bags weigh 32 grams

The protective structure inside the shopping bag will be weighed at Showcase.

It cannot weigh more than 600 grams.

- The shopping bag weighs 32 grams.

Think about some of these examples below of things that weigh about 600 grams.
Your structure should not weigh more than some of these examples:
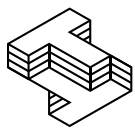

Try using a scale like this to weigh your structure

💡 **Tip**: Attending a **Test Trial** is a good way to make sure your device meets all the requirements! See the **website** for in-person and virtual options.

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📅 Final Showcase

This is your team's chance to share your final design with hundreds of excited parents, industry volunteers, and fellow students. Judges are interested to learn about these aspects of your project:

Team Structure **Performance on the rigs**	Team **Journal**	Team **Interview**

📋 Team Structure Performance at the Rig

When your team demonstrates your structure on Showcase Day, keep this process and all requirements in mind:

Process

- Bring your bag to the rig and greet the judges.
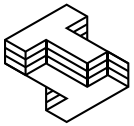- When the judge starts the 6 minute timer...

1. Your team will:
   - ☐ Untie the bag and take out the protective structure.
   - ☐ Assemble the protective structure & set it up on the build area.
   - ☐ Place the paper cube stacks in 2s and 3s on the designated area (black square and grey shaded area).
2. When you are ready for each Test:
   - ☐ Move to the safety area.
3. The judges will begin the fans for each 30 second test once your team is in the safety area

Test 1	Test 2	Test 3
Fan 1 Medium speed	Fan 2 High speed	Fan 1 and 2 High speed

- ☐ Teams can reset and adjust the protective structure and cube stacks in between each Test.

Complete this entire process in 6 minutes!

Then celebrate that you have completed the entire Tech Challenge!
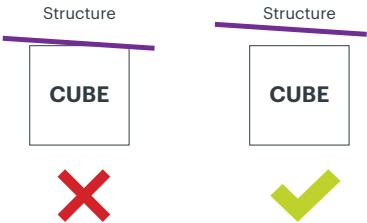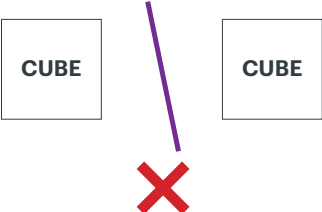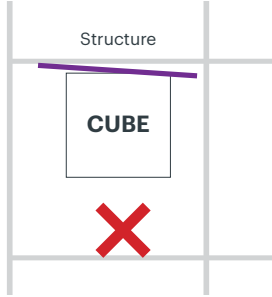

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Detailed Requirements

1. **Building your structure:**
   - Assemble your structure only during the Team Structure Performance.
   - During the performance, the structure may only touch the top surface of the raised build area, **it must not** stick out, extend beyond, or hang down the edges of the build area.
   - The part that touches the build area should not be glued, taped, or fixed down—it should just rest gently on top of the build area.

2. **Protect, don't block:**
   - The structure must be constructed so the judges can see that the success criteria are met, without anyone touching the structure.
     - In other words, your paper cube stacks must be visible throughout the Team Structure Performance.
   - **The structure is NOT** allowed to:

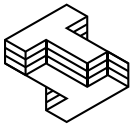| Touch paper cubes	Occupy space between paper cube stacks	Be in the same grid square as a paper cube
Structure ❌ CUBE Structure ✔️ CUBE	CUBE CUBE ❌	Structure ❌ CUBE

3. **Safety**: Team members must follow all safety rules. See the **Safety Poster** for more details.
   - Judges may stop you before or during the Structure Performance if they determine it is unsafe to continue.

4. **Time:**
   - Judges will start the Test period once the participants are ready and have moved to the defined safety area.
   - Each Test time is 30 seconds maximum from the time the fan is turned on.
   - Teams can reset and adjust the protective structure and cube stacks in between each Test. However, the 6 minute timer is not paused during this time.
   - If a Test is in progress at the end of six minutes, the run will be allowed to finish.

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Success criteria

Judges will score success at the end of each Test.

	10 Points	5 points	0 points
Cube Stack Scores	All cube stacks remain standing.	1- 2 cubes fall over.	More than 2 cubes fall over.
Protective Structure Scores	All of the protective structure remains standing.	Part of the protective structure remains standing.	None of the protective structure remains standing.

This is the perfect time for your team to celebrate your success! Whether your final structure worked or not, remember that the Structure Performance is just one of many things the judges will notice about your team. Every team excels in its own way.

📝 Team Journal

Start the Team Journal when you first begin thinking about the Challenge. Make a journal entry every time something important happens (meeting held, decision made, action taken, etc.). Your completed journal should feature well-organized notes, photos, sketches, and dimensioned drawings.
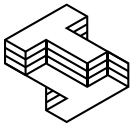
1. On event day, each team must submit one team journal.
2. The journal must be an organized and detailed notebook or binder.
3. Journals may be typed or handwritten. Legibility and organization are important.
4. In your journal, you must identify any content that was generated using AI tools.
5. The team journal is a record of the design process. It should show how the team works to-gether to research, brainstorm, build, test, document, revise and repeat (iterate).

Journals might include:

What teams are working on that day	*Brainstorms and ideas*	*Research and examples for inspiration*
What they learned	*Labeled sketches and drawings of prototypes*	*Test results, detailed measurements and data*
What they want to try next	*Problems and how they fixed them*	*Iterations, notes, and analysis*

🌐 See the **Team Guide** for more information about the journal.

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💬 Team Interview

During the showcase interview, tell our volunteer judges how your team made plans, worked together, and solved problems.

- Every team member should be ready to describe the work they did.

- It is fine if some team members speak a language other than English.

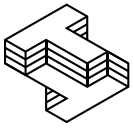- Please let The Tech Challenge team know in advance if any special accommodations are needed.

⚠️ Important Note About the Rules

Clarifications and additions to the rules may be made. When changes occur, registered teams will be alerted by email.

Changes will also be noted in the rules on The Tech Challenge website: **www.thetech.org/kenya**

The website also includes answers to frequently asked questions (FAQs) which are posted and updated periodically.

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? FAQ (Frequently Asked Questions)

- **Can we buy materials from the store to use in our structure?**

  - Although you may buy materials from the store, we encourage the use of recyclable materials and the use of resources in your communities and surrounding areas. See **www.thetech.org/kenya** for Kenya guides and more ideas of what to use. Try not to buy a pre-made kit, instead use your creativity to use a variety of materials.

- **Can we research ideas online or in books?**

  - Yes! Research existing ideas for reference and inspiration. Write down the information you find and where you found it in your engineering journal.

- **Can we dress up as a team?**

  - Yes! Show your team spirit and collaborate on costumes or matching clothes.

- **What happens if we don't follow the rules and criteria of the challenge?**

  - We prefer that you keep to the regulations. Marks will be taken off for not following the rules.

- **Can I invite my family and friends to the Tech Challenge Showcase?**

  - YES! Of course you can! Your family, friends, and others are invited to the showcase! The structure performance and interview sections are restricted to teams and volunteers of the Tech Challenge. However, the audience can watch everything on screens and see the team receive their medals and awards.

- **Can we write a story relating to our scenario?**

  - Yes, you can write a story telling how and why your structure is needed (spirit of the challenge).

To register for The Tech Challenge go to the website **www.thetech.org/kenya**

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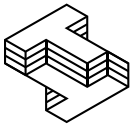
⚠️ Safety

Safety is a top priority during all phases of The Tech Challenge.

ALL team members are responsible for safety

Identify a Safety Manager for your team who will make sure everyone is practicing the safety guidelines.

ALWAYS
wear safety gear when using tools, building, or testing your device.

Eye protection	Head protection	Closed-toed shoes	Tie or tuck back long hair

Ask advisers for help when using new tools!

DON'T
forget the following are not allowed around tools and test rigs.

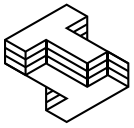| No flammable liquids or gases	No pressurized gases > 5 psi	No animals	No running and unsafe play

Advisers and judges can stop any activity they think is unsafe.

⚠️ Post this at your school!

For more rules and resources go to **thetech.org/kenya**

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Detailed Reminders for Test Trials and Showcase

	Judges have full authority to stop any activity they view as unsafe. The judges' word is final.
	Safety gear must be worn when in designated areas.
	Eye protection is required and will be available. • Teams may provide their own ANSI-approved eye protection (e.g., glasses, goggles, mask). • Regular eyeglasses do not provide the necessary level of eye protection and are not an acceptable substitute for ANSI-approved eye protection.
	Head protection is required and will be available. • Teams may provide their own head protection (e.g., bump hats, bicycle helmets, hardhats, or athletic helmets). • Head protection must be worn at all times when in designated areas around test rigs or when constructing/testing devices.
	• AC power is not allowed at Test Trials or Showcase. • Batteries used must be sealed and in good condition.
	• Team members may not sit, stand, climb on or go under rigs, or be lifted by other team members during the set-up and device demonstration periods. • No ladders, step stools, or other equipment will be allowed to lift team members.