The Tech Challenge | Kenya

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Adviser Guide

Welcome to The Tech Challenge! This guide is for team advisers, educators, and parents of participants in The Tech Challenge. Thank you for supporting the young innovators who are the heart of this special program.

Please read this guide, as well as the accompanying **Team Guide**. They contain guidelines, resources, and ideas that will help you and your students get the most out of this program.

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1. The Basics

An Adviser is...	• Any responsible adult, including teachers and parents. • NOT a high school student. • Every team must have an adviser. • Advisers do NOT need technical expertise.	• At least 21 years old. • NOT a Tech Challenge judge. • Their role is to guide, mentor, and encourage the team. • If you do have technical expertise, show restraint. Encourage students to explore and research rather than instructing them.

Remember that this is an activity to help students to build confidence.

A Team is...	Two-six students	Grade 4 - Form 4
Remember	Each adviser can have one or two teams only. No more than that.	Team level is set by the highest grade represented in your group.

Review the Team Guide on the website so you are aware of the expectations, guidelines, and resources for student participants.

Registration basics

- Registration is free!
- Find more information on the website: thetech.org/kenya

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Participant Events

Advisers		Advisers and Team Members	Community
Interest sessions 30-minute Zoom sessions *February 2026*	**Team and Adviser Challenge Kick-off** 90-minute hands-on workshop *February-April*	**Test Trials** Registered time to test solutions and get feedback *March-June*	**Showcase** **Save the date for this culminating event!** *July*

Please see our **website** for more details and to register for these free events.

In addition to events, we have a number of resources available **on the website** to support advisers and teams through the entire Challenge. Check our mini-design challenges, lesson plans, videos, educator resources, and more!

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. We look forward to teams telling us about their journey, even the times when the team felt like quitting. Their journal, interview, and device demonstration do not need to be perfect to be amazing!

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2. Getting Started

I'm not sure how to get the team started. Do you have suggestions?
Many students have never taken on a project like The Tech Challenge. Help them see the big picture by creating a project schedule. Break down the work into stages. For example:

First

Get organized	Plan with your HOI and schedule team meetings. Not all meetings will be productive, but you can help team members stay on track by getting them to set some ground rules such as: • We will attend all team meetings. • We will focus on the project during team meetings. • We will put every team member's skills to use. • We will be open to ideas from all team members. • Most of all, we'll have fun!
Review the website	• **Register for The Tech Challenge.** • Attend the **Interest Sessions** to learn more about this year's challenge. • Register for a **Team and Adviser Challenge Kick-off** with your team. • Check out the activities and lesson plans in **Educator Resources.** • Send any questions you still have to **ttckenya@thetech.org.**
Start thinking	• Have everyone read the **rules**. • Help the team research the challenge and its constraints. • Encourage the team to break the challenge into smaller parts. • Remind them to look at the world around them for ways this problem can be approached.

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Then

Make a plan	Help the team create a timeline with goals and milestones. • Include important dates and parts of the Challenge. • Review the **Team Guide** and this **Adviser Guide.**
Start a Team Journal	Get a new notebook for each team from the school. Help the team start a journal and take notes on everything they are doing: • the plan, all brainstorming ideas, research on those ideas, questions and learning from info sessions, etc. This is part of the story of their Tech Challenge journey and a reference for the team.
Brainstorm	There are many brainstorming resources on our website including: Brainstorming Strategies, Brainstorming Tech Tip, Brainstorming Ideas Lesson. • After they brainstorm, have the team pick three or four favorite ideas to prototype.
Research and Develop	• Help the team research the ideas by looking into the science and engineering of how similar solutions have been developed in the past. • Have teams develop their ideas with sketches, words, and quick prototype models. • Make sure they take notes and document their work in their journal.
Test and redesign	• Guide the team through the design process. • They should test and prototype several times. • Encourage them to persevere through challenges.
Document results	Remind the team to take notes at every meeting and spend time analyzing what does and does not work well. • Test results should be added to the Team Journal. • Writing things as they go is better than trying to do it all at the end.

Next

Choose a design	After the team has prototyped and tested several ideas, have them select one design to work on.
Review criteria	Review the rules, criteria, and constraints. • Help the team analyze how successful their design will be. • Review the requirements for the interview and journal.

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Finally

Test and redesign	Go through a final stage of testing and troubleshooting.
Prepare documentation	Encourage the team to organize their notes and review their process. • Remind them of the criteria for success and help them find relevant examples of how they used different parts of the process. • Have them reflect on how their design and teamwork changed since they started the project.
Get creative	Encourage the team members to express their creativity at the Showcase with costumes.
Prepare for the finish line	Have the team get ready for the Showcase by: • making finishing touches to their device. • organizing their Team Journal (make sure to gather all information into one well-organized document). • To help you present your progress, please bring your journal to the Showcase with all your notes and ideas. • practicing the team interview. Encourage them to think about what they learned from both successes and failures.
Celebrate early and often!	There are plenty of milestones if you break things up in steps. • Celebrating can be as simple as getting excited about a small part of the prototype working.

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3. The Adviser's Role

How involved in the project should I be?
Here are some tips:

- Do not direct. Mentor and guide the team. The project should be designed, built, and tested by the students.
- Facilitate conversations to help the team consider the challenge from different perspectives.
- Help the team solve problems by asking open-ended questions. Do not provide answers or solutions.
- "I don't know" or "I'm not sure" followed by "let's find out" are useful phrases.
- When providing assistance with tools, be sure to follow the team's exact directions even when they may be flawed (as long as it's safe).
- Be supportive. Encourage. Be patient.
- Keep your hands off the device, except to ensure safety.

As an adviser, your role will vary based on the needs of your team. The most important job is to encourage the team members and help them solve the Challenge themselves.

What are some questions I should be asking myself as the work progresses?

- Are the students doing the actual work?
- Are the design ideas generated by the team?
- Are you advising and mentoring, or problem-solving?
- Are you asking open-ended questions that allow the team to come up with their own ideas, or have you been steering them toward solutions?

Will I be with my team during the Showcase?

- Advisers will be separated from their teams during all judging. Advisers will not be permitted to assist the team or intervene, teams should be prepared to proceed on their own.
- During the device demonstration, you will be able to observe with the audience.
  - Trust that your team is ready. Your team should be able to handle everything themselves.

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Safety

You are the adult in the room, and you know the capabilities of the students, so take the lead where safety is concerned, especially when using tools.

- Let them do what they can, but step in if you feel your students can't do something safely on their own.
- Print and refer to the **Safety Poster** and review the safety rules with the team

Educators

- Want to know more about how The Tech Challenge aligns with standards?
- Need lesson plans that provide scaffolded support?
- Interested in key vocabulary and terminology?

Look at our **educator resources webpage.**

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4. Materials and Support

Remember: The device needs to be built by the team, so focus on materials the team can use or learn to use with limited support.

What kinds of materials should we use?

- Here is a link for our Sourcing Materials for Tech Challenge Kenya.
- We encourage you to reuse and recycle items found in your community.
- Many common items are useful for prototyping and building a structure. Cardboard can even work well if it is constructed to withstand testing. Think of other materials as support structures.
- Find used items and recyclable items in your environment. Collect and clean them before using them.
- Visit and ask workshops, farmers, motor parts stores, grocery stores and supermarkets, places that sell rubber for example tyres, rubber bands for recyclable materials.
- Find items in your home that are not being used but can be useful - grandma's stools, pots, containers, net, clothes, sticks.

Costumes and team spirit
One of your biggest jobs as an adviser is keeping the team motivated. Helping them develop a team name, costume, or even a chant and team logo can help keep their energy and engagement up. These aspects of the experience can be inexpensive and allow them to express their skills in other ways.

What sort of additional support can my team seek out?
Seek help from anyone around your school for example your fellow students, teachers, watchmen, cooks among other school employees.

- Work with local people, like farmers, mechanics, fundis, tailors, shopkeepers, mama mbogas and most importantly itinerant traders could also help
- Ask how they solve daily challenges — for example, how fundis make strong joints, how farmers protect their animals against storms.
- Use these ideas and materials around you to build and create better solutions together.

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5. Showcase

What should we bring to the showcase?

DO Bring	Do NOT bring
• Your journal for the Team Journal • The protective structure your team built for the Structure Demonstration	• A test rig • Your tools for designing

What should we expect at the showcase?
Teamwork in action: How well the group worked together and shared ideas to bring their project to life.

- Creativity and innovation: Unique and practical designs that show imagination and local problem-solving.
- Detailed journals and sketches: Clear records of the team's design steps, drawings, and how the idea developed.
- Use of local and diverse materials: Resourceful use of available materials, from recycled items to locally sourced parts.
- Understanding of your project: Each team member should be able to explain what the structure does, how it works, and why it matters.

On the day of the Showcase, teams will be judged on three categories:

Team **Journal**	Team **Interview**	Device **Demonstration**

Advisers do not accompany teams through the judging process.

What is involved in the interview process?
Teams of judges will interview the team. During the interviews, team members should be prepared to:

- Discuss their roles, process, and experiences working on the Challenge, including how they dealt with failure and what they learned.
- Point out elements of their documentation that highlight their process and experience.
- Explain their innovations in design and/or use of materials.
- Explain the real-life applicability of their designs.
- Show off their creativity, inventiveness, and style using costumes, songs, and/or cheers.

Teams should prepare by practicing with their adviser.

See the **Team Guide** for some sample interview questions and the webpage for lesson plans and other resources.

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How does device demonstration work?

The team will demonstrate their device on a test rig for judges to evaluate. Power outlets will not be available.

What else do we need to know?

The showcase can be hectic, so make sure everyone knows what they're supposed to do. Have the team practice. Some guidelines:

- Make sure all the parents know well in advance the date and time of the showcase. Invite parents to attend if they can.
- Have the team make a list of everything they need for judging.
- The team should practice demonstrating their structure multiple times, including setup, operation, and cleanup.
- The team should practice the interview and structure demonstration in front of parents or other supportive adults.
- Teams need support and encouragement from you and their families. Keep the focus on the fun of participating in The Tech Challenge, not the stress of competing to win an award.

Celebrate the team's accomplishments regardless of the day's outcome. Have fun!

6. HELP! What do I do when...?

We have our first team meeting! How should we organize it?

- Each meeting should have an agenda and goals.
- Keep track of time and make sure there is room in the schedule for cleanup.
- Keep in mind that most students can work on an activity like this for about two hours before their productivity drops. Snack time can help break up longer meetings.

The team has an idea they want to build. How do we start prototyping?

Some tips:

- Have the team mock up their **top ideas** using cardboard or other easily found materials.
- After thinking of some designs encourage the team to **build a prototype that will work as a first draft.** This does not have to be the final design.
- **Testing is very important.** The team should test their prototypes multiple times and adjust or rebuild as necessary. Don't forget to document the prototyping and testing processes in the Team Journal.

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The team is spending a lot of time building, but we haven't tested their ideas yet. How important is testing?

Very important! Test early and often.

- Create a makeshift testing area in your school or home where your team can test often.
- Have the team document the tests in their Team Journal.
  - What did they observe? What happened? What could they improve?
- Be sure to test team prototypes as many times as possible
- See the **website** for details on events. There may be some opportunities for the team to get feedback from Tech Challenge staff..

It's important to make sure the team doesn't get discouraged by failure. Remind them how much they're learning about what doesn't work, and encourage them to persevere. Failure is part of the design process.

We've been working on this for a while, and the team is losing focus. What should I do?

- Students may lose motivation mid-way through the project, particularly if they are feeling stuck. It is important to encourage them by asking them open-ended questions and giving them time to think through the solutions and then rebuilding, redesigning and retesting.
- Help guide them around this problem by having them look elsewhere for inspiration such as books, toys, other teams, games or TV shows, or back at their original brainstorms in their Team Journal.

Keeping a Team Journal is a challenge for our team. Any suggestions?

- To make journaling seem less difficult and help get the team's thoughts organized, ask these questions at the beginning of each meeting:
  - *"What are we going to do today? What do we want to accomplish?"*
- At the end of the meeting, teams should answer:
  - *"What did we learn today? What do we need to do at the next meeting?"*
- These answers can be in words, photographs, or sketches. This is the beginning of a great Team Journal! Be sure to add detail and information to drawings and sketches such as dimensions and construction notes.
- Have the team work on the journal as they go along. At this stage, a journal doesn't have to be a professional-looking, "finished" document. It's important just to take notes.
- If your team is still stuck, review the checklist in the Team Guide for some ideas of things they could include.

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What do I do when my team is having trouble collaborating?

Students sometimes need a little nudging to get out of the "all about me" phase. When communication breaks down, give them hints about how to talk to each other:

Common phrasing	More productive phrasing
We should...	What if we tried...
My idea is...	Remember when you came up with the idea that...
I think...	What do you think we should try next?
We need to...	Have we looked at all of your options?

If you are advising a mixed-gender team, keep an eye on who takes on which roles.

- Each team member should have experience in all stages of the project.
- Make sure all students have an equal chance to learn new skills.

It seems like one or a couple of team members are running the show. What should I do?

- Some students may take over the project, leaving others' voices unheard.
- Some will disengage on their own, while others are pushed out.
- Don't let this happen. Say things like, "Have you taken a vote on this?"

Additional Resources

Looking for more ideas of how to support your team throughout the design process? Check out the website for mini-design challenges, adviser resources, educator resources, videos, lesson plans and more!
www.thetech.org/kenya