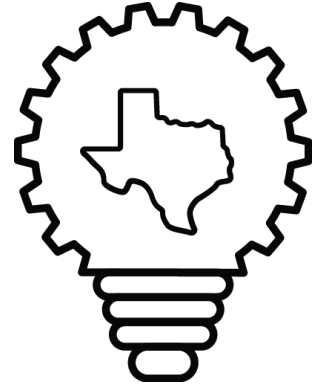


TAME Club Sponsor Guide: Best Practices



TAME Clubs across the Lonestar State empower educators to inspire and prepare the future STEM professionals of Texas.

Clubs are typically sponsored by teachers, librarians, administrators, parents, or community partners. They can be in public schools, private schools, home schools, scout troops, libraries, college campuses, and anywhere that students can meet regularly to explore STEM.

Thank you for Sponsoring a TAME Club!

TAME Staff are inspired on a daily basis by the efforts of educators, parents, volunteers, grassroots organizers, corporate partners, and communities that go above and beyond to support students. We know your time is valuable and work hard to streamline our programs for you.

TAME is like an engineering design challenge spanning decades and adapting to new opportunities to change and improve. We welcome feedback with enthusiasm at programs@tame.org, knowing that it will take the whole TAME Family to build a future where Texas students can dream big.

Contents of this Guide

- Engineering inclusion since 1976: TAME’s Mission
- The flexibility of the TAME Club program
- Timing your club meetings
- Funding your TAME Club
- Suggested TAME Club guidelines for students
- Recruiting new club members: Hidden in Plain Sight
- Suggested meeting “recipes” and activity ideas

Engineering inclusion since 1976: TAME's Mission

TAME's mission is to enable Texas students to pursue careers in Science, Technology, Engineering, and Math (STEM) by:

- Creating partnerships among educators, industry, government and families to inform, educate and motivate students
- Implementing classroom and extra-curricular programs and activities
- Focusing on populations that remain underrepresented in fields of STEM
- Promoting diversity in STEM careers

What do TAME Clubs do? Is there a format we have to follow? How often do we have to meet?

The TAME Club program is flexible. We understand that there is no “one-size-fits-all” format that will work for students in different communities around Texas. That’s why TAME does not require clubs to meet a certain number of times or use a particular format.

Some TAME Clubs meet several times a month, some meet a few times a semester. Because many students ride the bus and aren't able to stay after school, some clubs meet during lunch or homeroom, or even count class time toward the club meetings.

Club Sponsors do not need to report back to TAME about their meetings, although we love to hear about fun and interesting STEM projects and often feature photos on TAME's Facebook, Twitter, and Instagram to inspire other clubs. Many of our best practices come from our TAME Club Hall of Fame, available at tame.org.

Timing your TAME Club meetings

When do TAME Clubs meet?

- before or after school
- during homeroom or lunch
- during class
- on the weekend

How often do TAME Clubs meet?

- once a week
- multiple times a month
- once a month
- a few times a semester

Funding Your TAME Club

While you can organize many activities with typical classroom supplies on hand, extra funding can help cover snacks, field trips, etc. TAME Staff is ready to support you in your efforts as you approach local funders and school districts for extra support and new ideas. Please see our **TAME Club Community School Guide** for infographics, student narratives, suggested fundraising levels, and more.

If you're seeking additional funding, a good place to start would be a free trial on [Instrumentl](#) to search for small grants. TAME Clubs have also had some success with the local grants available through [Walmart](#), [Target](#), and [BestBuy](#).

Suggested TAME Club guidelines for students

- **You're not going to get things right on the first try.** Scientists and engineers “fail” all the time, go back to the drawing board, and try again until they get the product they want. The more “oops” moments you collect, the more often you'll see success.
- **You don't have to tackle any problem alone.** In the STEM world, we have to work with each other to share ideas, draw on different strengths, learn from mistakes, and present our concepts. Why reinvent the wheel by yourself when you can build on other inventors' work and skip to the fun part where you redesign the whole car?
- **Everyone has a voice at the table.** Someday you will work with people who are different from you. They will be different from you in age, gender, height, hometown, and more. A STEM Club is a great place to practice listening to voices you're not used to hearing. If someone in the group isn't speaking up, ask what they think. More voices at the table means more ideas to solve problems and maybe even one day change the world.
- **The goal is fun, not grades.** Even at STEM Competitions, the goal is to explore and celebrate STEM. Good grades and awards are secondary to having fun and finding out what inspires you.

Recruiting new club members: Hidden in Plain Sight

TAME Clubs are inclusive to all students who want to join. Because part of [TAME's mission](#) is to promote diversity in STEM careers, we focus recruitment on young women and under-represented minority populations (African American, Hispanic, and Native American).

We welcome any student who wants to pursue their interest in STEM. Also, our Club membership is not limited to students in public school; we welcome home-schooling networks, community groups, and more.

Who's not in the room? Who won't seek out a STEM Club without your help?

Many students hear about a STEM Club and know immediately that they want to join. They might already consider themselves “a math person” or know that they have a knack for chemistry. However, in order to fulfill TAME’s mission, TAME strongly urges Club Sponsors to actively recruit students who might not end up in a TAME Club on their own.

Who isn't in the club yet? Who doubts whether they belong in STEM? Some questions to ask:

- What **creative, artistic students** haven't yet learned what an engineer is, and how desperately engineering needs creative minds to solve problems and envision new futures?
- What **young writers or debate enthusiasts** don't yet know that scientists with good communication skills can help make science accessible, interesting—and maybe even poetic?
- What **sociable, outgoing students** would thrive on an Engineering Design Challenge Team, helping all the different members of the team connect and feel heard?
- What **passionate volunteers** might light up when they learn that STEM fields usually focus on helping people, improving lives, and solving the problems facing the future of humanity?
- What **adventurous, athletic students** haven't considered that a career in STEM could take them outdoors, into different habitats and environments all over the world—or even beyond it, into the next generation of space explorers?

Perhaps the first person to walk on Mars is currently walking the hallways at your school but has never thought of themselves as a STEM person. They may never walk into your TAME Club unless you actively encourage them to join.

“We try to intentionally create these communities of diverse students, diverse teachers. Diversity is an incredibly important part of an effective team. When you have a diversity of opinion, a diversity of experiences, the end product that you create is so much bigger than what any one person could create by themselves.” – Savita Raj, Executive Director of TAME, 2010-2019

Recruitment criteria

Remember, you must recruit at least 8 registered students grades 6-12 for your club to receive an invitation to participate in TAME’s free Divisional STEM Competitions. See our tips on recruiting from other successful Club Sponsors: [21 Ideas for Recruiting Diverse Students into STEM Clubs](#).

Your TAME Club must represent a rural area or Title I school (this covers most TAME Clubs, and can be checked under [NCES](#) locale code). If you are not a Title I campus AND you are in Austin, DFW, Houston, San Antonio, or the suburbs around these large urban centers, TAME has some additional criteria:

We welcome all students, but we ask that 50% of the students recruited in these clubs:

- would be part of the first generation in their family to graduate from college
- or would qualify for reduced fees or free/reduced meals

See more information on the recruitment criteria [here](#).

TAME Educator Workshop

Want more strategies to help? To generate understanding for the need to challenge STEM stereotypes and develop soft skills in STEM students, TAME created a unique program with original subject matter called [Hidden in Plain Sight: Discovering STEM Potential](#).

This workshop makes the connection between the need for breaking stereotypes and how that creates inclusion for underrepresented groups. It provides teachers with tools to nurture non-stereotypical STEM students and methods to create a classroom atmosphere which encourages these students to explore and become engaged in STEM learning.

“It really made me think about how some of my kids might feel in different situations and how I might structure my classroom/lessons to create a “safer” learning environment.” Dawn R., Middle school STEM teacher, Fort Stockton, TX

STEM Competitions

TAME’s annual Divisional and State [STEM Competitions](#) bring together thousands of high-performing TAME Club students in grades 6-12 from across the state to test their STEM skills through collaborative engineering challenges and individual timed tests. The competitions celebrate achievement in math and science, and encourage the development of a peer and mentor network.

All STEM Competitions are free—but you need to register and sign up!

The [Student Registration](#) deadline for students in grades 6-12 who want to participate in STEM Competitions is at the end of October, so get your registration in soon.

Once the dates for Divisional Competitions have been announced, the TAME State Office will reach out to Club Sponsors to confirm which students are planning to attend. Students who sign up to attend will be added to Design Challenge Teams and receive free t-shirts at the event.

An engineer for an afternoon

At the 14 Divisional STEM Competitions that take place around the state in January or February, participants take a timed math and science test administered by grade level. Students also compete in an Engineering Design Challenge on a team with students from other schools at the event. Team assignments are strategically balanced by race, gender, age, and geography to bring diverse voices to the table and give each student a fair chance to step into the role of a real engineer for an afternoon.

Competition Signups help keep STEM Competitions free for all

Some students aren't sure if they want to compete, and prefer to just have fun with friends at the club level. **If there's a chance a student may want to participate, have them register in the fall!** While all registered students in grades 6-12 are eligible to compete, only students who sign up and confirm participation will be invited to attend the Divisional STEM Competition. If a student does not complete the Student Registration form, or does not sign up to confirm they will attend, organizers will not have supplies or team assignments for them and **they will not be able to participate.** However, they are welcome to stay active in the TAME Club year round and register for the next Competition season in the fall.

When a student signs up to attend, we make sure we have the right supplies and food available for that student. If we know ahead of time they cannot attend, we can invest that money in other meaningful ways. Please help us use our donors' money responsibly and keep our programs free for all students.

Celebrate with your students

We ask that TAME Club Sponsors accompany their students to Divisionals or find an alternate chaperone. If your students are selected for the State STEM Competition, we will need your assistance in coordinating their participation. At the State STEM Competition, TAME sponsors cover all costs, including transportation, food and lodging, and great giveaways and prizes.

Learn more about how participating in annual STEM Competitions from grade 6-12 can influence a student's future with [Benefits of a TAME Club – Ana's Story](#).

Suggested TAME Club meeting recipes & activity ideas

Many Club Sponsors ask us for advice on how to structure meetings, schedules, and activities. Here are some optional "recipes" or examples to help you envision some of the ways that your TAME Club can help foster exploration and build a supportive network for your students.

Simple Engineering Activity (1 hour meeting, all ages)

Setup supplies & table space before the meeting (5 minutes)

Welcome students with name tags, snacks, icebreaker activity, etc. (10 minutes)

Engineering challenge with 4-5 people to a team (30 minutes)

Discussion: What worked, what would you do differently next time? (10 minutes)

Clean up, wrap up, and vote on the next TAME Club challenge (5 minutes)

Simple Science, Tech, or Math Activity (1 hour meeting, all ages)

Setup supplies & table space before the meeting (5 minutes)

Welcome students with name tags, snacks, icebreaker activity, etc. (10 minutes)

Plan and execute a science experiment, coding project, or math activity (30 minutes)

Discussion: What worked, what would you do differently next time? (10 minutes)

Clean up, wrap up, and vote on the next TAME Club challenge (5 minutes)

Practice Engineering Design Challenge (2–3 hour meeting, grades 6–12)

Setup supplies & table space before the meeting (10 minutes)

Welcome students with name tags, snacks, icebreaker activity, etc. (10 minutes)

Practice an official Engineering Design Challenge from a past TAME Divisional STEM Competition with 5-6 people to a team (60 minutes)

Discussion: What worked, what would you do differently next time? What ideas did you like from other team designs and why? (20 minutes)

Optional: Round Two of the same Engineering Design Challenge, redesigning prototypes after discussion and feedback (60 minutes)

Clean up, wrap up, and vote on the next TAME Club challenge (5 minutes)

Past Divisional & State Challenges:

- [Channel Crossing Challenge](#), *from the 2019 Divisional STEM Competitions*
- [Wind Turbine](#), *from the 2017 State STEM Competition*
- [Wrap A Fuselage](#), *from the 2016 State STEM Competition*
- [Jet Powered Blimp](#), *from the 2015 State Math and Science Competition*
- [Stunt Plane](#), *from the 2014 State Math and Science Competition*
- [Mars Rover](#), *from the 2013 State Math and Science Competition*
- [Aggie Crane Challenge](#), *from the 2012 State Math and Science Competition*

Practice Tests & Kahoot! Quizzes (1.75 hour meeting, grades 6–12)

Clear tables, set out practice tests, and arrange a screen with Kahoot! before the meeting (5 minutes)

Welcome students with name tags, snacks, icebreaker activity, etc. (10 minutes)

Take a [Practice Test](#) from the TAME website (60 minutes)

Practice answering [Kahoot! quiz questions](#) from the TAME website (20 minutes)

Clean up, wrap up, and vote on the next TAME Club challenge (5 minutes)

Tutoring & STEM Video/Discussion (1 hour meeting, all ages)

Clear table space before the meeting (5 minutes)

Welcome students with name tags, snacks, icebreaker activity, etc. (10 minutes)

Tutoring sessions with peers and/or teachers (25-30 minutes)

STEM Video: select and watch a video from [TED Ed](#), [The Kid Should See This](#), etc. (5-10 minutes)

Discussion about STEM concepts / role models in the video (10 minutes)

Clean up, wrap up, and vote on the next TAME Club challenge (5 minutes)

Guest Speaker (1-2 hour meeting, all ages)

We recommend inviting a local STEM professional or a former club member who is now in college.

HINT: this is a great opportunity to welcome the whole school to attend & recruit students.

Welcome guest and setup space before the meeting (5 minutes)

Welcome students with name tags, snacks, icebreaker activity, etc. (10 minutes)

Guest presentation / conversation (20-40 minutes)

Encourage the guest to bring props, photos, or any other type of visual aid that will provide students with a better understanding of their career/college experience. Encourage them to keep things light, conversational, and positive overall—it's okay to talk about struggles, too. Honesty is important, and so is inspiring students to consider new career paths. We recommend [the Role Model training from Techbridge Girls](#).

Some questions to ask:

- What school subjects help you most in your job?
- Did you always know what you wanted to be? How did you choose your career?
- What education/training would students need to follow in your footsteps?
- What problems do you solve with your job? Who do you help with your work?
- What are some situations where you had to be creative in your job?
- If your job didn't exist, how would the world be different?
- What tools do you use? Who do you work with?
- What is the best part of your job?

- Does your employer offer paid internships, tours of the facility, or volunteer opportunities? If so, what are your tips for students interested in applying?
- What do you wish you had known when you were a student? What advice can you give?

Questions from students (15 minutes)

Host a Competition for Younger Students (3–6 hr meeting, grades 6–12)

Work with students to plan the schedule and challenge in advance. Connect with a local TAME Club or school with students younger than those in your club and arrange time to meet for an Engineering Design Challenge.

Students setup supplies & table space before the meeting (10 minutes)

Welcome both groups of students with name tags, snacks, icebreaker activity, etc. (10 minutes)

Practice an official Engineering Design Challenge from a past TAME Divisional STEM Competition with 5-6 people to a team and older students acting as judges (60 minutes)

Student-Led Discussion: What worked, what would you do differently next time? What ideas did you like from other team designs and why? (20 minutes)

Optional: Round Two of the same Engineering Design Challenge, redesigning prototypes after discussion and feedback (60 minutes)

Clean up, wrap up, and vote on the next TAME Club activity (5 minutes)

STEM Leadership Discussion (1–2 hours, grades 6–12)

We recommend this activity after your students have had a chance to get to know each other. Host a discussion session where students can talk about their experience in STEM classes, activities, and events like competitions. Ask students to draw a scientist or an engineer, then use that as a jumping off point to talk about stereotypes.

- How many students drew a “mad scientist” in a labcoat? What other stereotypes appear?
- What messages are these stereotypes sending about who gets to be a scientist, or what skills it takes to be an engineer?
- Can you imagine a scientist who is social and outgoing?
- Can you picture an engineer who is creative and artistic?
- How old do you have to be, in order to be a good scientist?
- Can an artist or photographer be good with numbers and formulas?
- Can an engineering major also play college basketball?
- Do you have to look, act, or think a certain way to change the world?

Studies show that STEM professionals generate more innovative and effective ideas in diverse teams. How can your TAME Club recruit more students who might not yet see themselves as a science or math person, or who may not yet know much about engineering? What new kinds of creative voices or artistic talents can you bring to the team? How can they inspire and mentor younger students? Talk about ways club members can lead by example and encourage others by setting small STEM leadership goals such as:

- to raise their hand a certain number of times in their STEM classes during a week
- ask questions to see if other people at school or in the community might want the help of a STEM club to solve a problem or design and build something new
- bring a friend to a TAME Club meeting
- see how many club members they can recruit to attend the Divisional STEM Competition
- when the club goes to the STEM Competition, each member makes a point to meet and talk to one student from another school to get ideas for other club activities

STEAM Art Project & Contest Day (1 hr meeting, all ages)

Organize a STEAM (Science, Tech, Engineering, Art, and Math) art project day to help students submit artwork for the [annual T-Shirt Design Contest](#). Coordinate with an art teacher to talk about the many ways art, design, and STEM overlap and depend on each other for creative pursuits across many disciplines. Consider asking the school theater department about props, smoke, steam, or lighting effects, and other tech-related ways to bring a stage production to life with your students' STEM skills.

College & Scholarship Workshop (1 hr meeting, grades 11–12)

Invite 12th graders to fill out TAME Scholarship Application during the club meeting, and offer constructive feedback on their essays. Remind students they need to take ACT or SAT to get into college, and help them brainstorm ways to sign up for and prepare for those tests. It's a great opportunity to welcome the school counselor or career counselor to give a talk to the students about applying for colleges—don't forget to include 11th graders who might be interested in the conversation.

Daytime Nature Walk (1–3 hours, all ages)

Scope out a safe place to bring students on a nature walk to study concepts like biology, geology, and ecology. Nearby [State Parks](#) may offer guided tours, handouts, maps, and scavenger hunt activities for spotting native wildlife. Apps like [LeafSnap](#), [Project BudBurst](#), [iNaturalist](#), [eBird](#), and [Project Noah](#) can make your students citizen scientists as they help photograph and document insects, birds, trees, and native plants. We recommend encouraging all students to wear the same color t-shirt and nametags, as well as sunscreen, bug spray, hats, comfortable walking shoes, and

long pants to protect the skin. Consider accessibility and students' mobility needs when choosing a location, so all students can take part. Research what jobs are available in this area to help students get excited and see the possibilities of a future in this area.

Nighttime Star Party (1-2 hours, all ages)

Do you know anyone who owns a telescope, spotting scope, or binoculars? Students can plan a star party to observe stars, meteor showers, planets like Mars and Venus, or celestial events like lunar eclipses. Apps like NASA's [Meteor Counter](#) can make your students citizen scientists as they document the timing, direction, and brightness of meteors. To see the most stars, you may want to wait for a clear night with a new moon, and meet in a place away from city lights like streetlights. Consider accessibility and students' mobility needs when choosing a location, so all students can take part. Research jobs in this area to help students get excited and see the possibilities of a future in astronomy, aerodynamics, or space exploration.

Community Volunteering Trip (half day to full day, grades 6-12)

Encourage students to brainstorm ways that they could give back to their school or community, such as planting trees, running a recycling drive, a park cleanup day, or building something like a Little Free Library. TAME Clubs have connected with [Elequa](#), a TAME partner in southwest Texas that offers online curriculum and \$50 open source water testing kits for free so students can check the chemistry of local waterways and run other experiments and challenges ([makewater.org](#)). Consider accessibility and students' mobility needs when choosing a location for your volunteering experience, so all students can take part. Discuss related job opportunities to help students get excited and see the possibilities of a future in this area.

Discussion: Science Fiction & STEM Ethics (1-2 hours, grades 6-12)

Host a discussion session where students can use their favorite sci-fi films, shows, books, and comics to [consider the human impact of progress in STEM fields](#). What are the social and ethical impacts of the technology they or their fellow students will someday invent?

This is an exercise with multiple benefits, as it encourages students to visualize themselves in a career where they make a lasting impact on humankind—and it asks them to consider what sort of impact they want to have.

Film / fiction examples and TED-Ed lessons for discussion starting points:

- Nebula Award nominated short story "[Today I am Paul](#)" by Martin Shoemaker, grades 6+; pair with TED-Ed lesson, [Can Machines Read Your Emotions?](#)

- Film *Big Hero 6*, grades 2+; TED-Ed lesson [The Turing test: Can a computer pass for a human?](#); [STEM activities](#) from Disney
- Film & book *The Martian*, grades 6+; TED-Ed lessons, [Could we actually live on Mars?](#) and [Could human civilization spread across the whole galaxy?](#)
- Film *Interstellar*, grades 6+; [educator's guide](#) and [TED-Ed lessons](#)
- Film *Black Panther*, grades 9+; [Afrofuturism](#) and representation in STEM; TED-Ed lessons, [Why should you read sci-fi superstar Octavia E. Butler?](#) and [How fiction can change reality](#)
- Film & book *Hidden Figures*, grades 6+; TED-Ed lessons, [Why do people get so anxious about math?](#); [The exceptional life of Benjamin Banneker](#); and [Eyes on the stars](#), on Ronald E. McNair, the second African American in space

College, Museum, or Career Day Field Trip (full day, grades 6–12)

Visit a local college, museum, or STEM employer. Consider accessibility and students’ mobility needs when choosing a location, so all students can take part. We recommend all students wear the same color t-shirt and nametags. Bring the list of questions from the “Guest Speaker” meeting recipe to help students get excited and see the possibilities of a future in this area.

Looking for more ideas? See more at tame.org/clubs