# DRMS TSA SUGGESTED EVENTS
2026 Competition Summaries & Themes

★ **Career Prep** **(INDIVIDUAL)** - Based on the annual theme, participants conduct research on a technology-related career, prepare a letter of introduction to a potential employer, and develop a job-specific resume. Semifinalists participate in a mock job interview. **2026 THEME:** Select a career from Career Clusters Energy & Natural Resources category within one of the following subclusters:

- Resource Extraction
- Conservation & Land Management
- Ecological Research & Development
- Clean & Alternative Energy
- Environmental Protection
- Utilities

★ **Coding** **(TEAMS OF 2)** - To qualify for the semifinal round of competition, participants take a test that concentrates on computer science and coding. Semifinalists demonstrate their programming knowledge by developing a solution to an onsite coding challenge.

- **THEME/PROBLEMS**: To prepare for MS Coding competition, teams should have knowledge of concepts (software development, computer science, and coding topics) that will be on the Coding written test.
- They also should be familiar and comfortable with using the Scratch programming language. Scratch is a free visual programming language available from the MIT Media Lab (https://scratch.mit.edu/download). An offline version of the Scratch tool should be downloaded and available on each team's laptop.
- Teams that advance to the semifinalist level, based on written test performance, will perform a challenge using the Scratch programming language. Semifinalist teams will receive the challenge on site and will have two hours to complete it. (PLEASE NOTE: Semifinalist teams MUST have a version of this program available for offline use, as there will be no Internet access available during the semifinalist level of the competition.)
- Examples of the types of challenges students may be asked to complete can be found at this link: https://scratch.mit.edu/starter-projects

★ **[Digital Photography](#) (INDIVIDUAL)** - Participants produce and submit a digital photographic portfolio that relates to the annual theme. Semifinalists participate in an onsite photographic challenge and a presentation/ interview.
  ○ **2026 THEME: Students will take four photographs that fit the theme "Through the Eye of an Animal."**

★ **[Inventions/Innovations](#) (TEAMS OF AT LEAST 3)** - To address the annual theme, participants research a need - and brainstorm a solution - for an invention or innovation of a device, system, or process. Participants document their work in an interactive display and the creation of a model/prototype. Semifinalists deliver a presentation about their work and participate in an interview.
  ○ **2025 THEME: Create a product that enhances the daily productivity of a middle school student.**

★ **[Mechanical Engineering](#) (TEAMS OF 2-3) -** Participants design, document, and build a mechanical device (working catapult) that incorporates the elements of the annual theme/problem. Finalists are determined based on an evaluation of the documentation portfolio and participation in a head-to-head bracket.
  ○ **2026 Problem Statement:** The distance for the contest field for 2026 will be eleven feet (11'). The front of the cornhole, regulation size (4ft. x 2ft) board will be 11' from the front of the firing line. Please refer to the official rules for specifications on the cornhole board and bean bags. The scoring area will consist of a 2' x 4' regulation cornhole board and 1' perimeter on the floor around the front and sides of the cornhole board
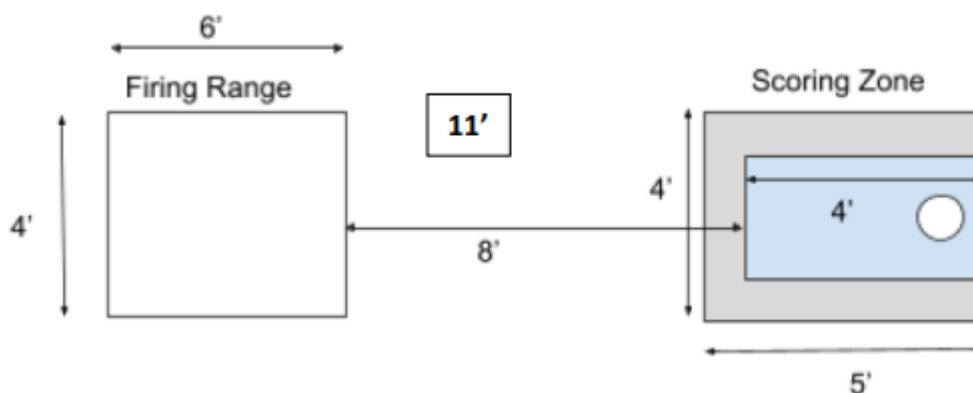
★ **[Off the Grid](#) (TEAM/INDIVIDUAL)** - Based on the annual theme, participants conduct research on a sustainable architectural design for a home in a country not their own. Participants produce a portfolio and create a display and a model. Semifinalists present their design and participate in an interview.

- **2025 THEME**

Design Brief: Water Collection in Kenya

Family Overview: Maya and her family live in a rural village in Kenya. The family consists of Maya (the mother), her husband, and three children. They live in a small, single-story dwelling home made from mud bricks, with a thatched roof. The house has two bedrooms, a living room, and a small kitchen. The family has limited access to running water, and the only available water source is a small, seasonal river a 30-minute walk away. During the dry season, this river often dries up, and Maya must buy water from a nearby vendor; this can be expensive and unreliable.

Challenge: Maya's family needs a sustainable off-grid solution to collect and store water. The current system involves carrying water from the river during the rainy season and relying on expensive water deliveries during the dry season. Your task is to optimize the family's water collection and storage system, using natural resources like rainwater and local materials.

Requirements:

- The system must provide enough clean water for the family's daily needs, including drinking, cooking, and bathing.
- The system should make use of rainwater harvesting to reduce reliance on external water sources.
- The water storage system must be designed to handle both the rainy season and the dry season.
- The system should include a basic filtration solution to ensure the water is safe for drinking.
- The design must be cost-effective and use local materials when possible.

Budget: Your team has a budget of $1,500 to develop and implement the water collection and storage system. This budget must cover materials for rainwater collection, filtration, storage tanks, and installation.

★ **Prepared Speech (INDIVIDUAL)** - Participants deliver a timed speech that relates to the theme of the current national TSA conference. Semifinalists and finalists are determined using the same competition procedure.
  - **2026 National Conference Theme: "Unity Thru Community"**

★ **Problem Solving (TEAMS OF 2)** - Participants use problem-solving skills to design and build a solution to an onsite challenge. Solutions are evaluated using measures appropriate to the challenge, such as elapsed time, horizontal or vertical distance, and/or strength.

★ **STEM Animation (TEAM?)**- Participants design and create a STEM animation video and documentation portfolio to address the annual theme/problem. Semifinalists present their animation and explain the elements of their portfolio/entry.
  - **2025 THEME: "Smart Cities: Technology in Urban Design"**

★ **Structural Engineering (TEAMS OF 2)** - Participants apply the principles of structural engineering to design and construct a structure that complies with the annual challenge. An assessment of the required documentation and the destructive testing of the structure (to determine its design efficiency) determine both semi finalists and finalists.
  - **2026 ANNUAL CHALLENGE:** The problem statement for 2026 is to design a balsa structure that will support the greatest load possible (on the top and in the center) using the least amount of materials. A substructure element is

permitted. The solution must transfer the load to the top of the abutments as efficiently as possible.

★ **[Technical Design](TEAMS OF 2)** - Participants demonstrate their ability to use the technical design process to solve an engineering design problem provided onsite at the conference. Required elements of the entry are presented in a portfolio that includes technical drawings for a minimum of three viable solutions.

★ **[Video Game Design](TEAM OF 2-6)**- Participants design, build, provide documentation for, and launch an E-rated, online game on a subject of their choice. Onsite at the conference, semifinalists deliver a presentation and participate in an interview to demonstrate the knowledge and expertise gained during the development of the game.

★ **[Website Design](TEAM OF 3-6)** - To address the annual challenge, participants design, build, provide documentation for, and launch a website that incorporates the elements of website design, graphic layout, and proper coding techniques. Semifinalists participate in an interview to demonstrate the knowledge and expertise gained during the development of the website.
   ○ **2026 Challenge** – Theme: Community Story - Develop a website that captures the essence of your local community and shares stories, history, or significant events that have shaped your community. The website should include an interactive element (e.g., timeline, map, etc.) that the user can interact with to understand the history or stories of your community. According to the official rules, do not include school or chapter name

★ **POSSIBLY - [Junior Solar Sprint (JSS)](TEAMS OF 2-4)** - Participants apply STEM concepts, creativity, teamwork, and problem-solving skills to design, construct, and race a solar-powered model car. Documentation of the process is required. Learn more about JSS, then register via an Army Educational Outreach Program (AEOP) portal to begin the JSS journey.

★ ~~**VEX IQ Robotics** - Participants collaborate on a robotics project – in which they build a robot that incorporates the relationship among STEM fields– culminating in a robot skills challenge that evaluates the robot's efficency and productivity.~~

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