



Below is a summary description of the 2019 and 2020 high school level TSA Competitive Events. Detailed specifications and rules regarding each event can be found in the *TSA High School Competitive Events Guide for the 2019 and 2020 National TSA Conference*.

3D Animation Participants (two [2] teams of two [2] to six [6] members per chapter) demonstrate their knowledge of 3D animation technology and design skills to creatively solve the challenge posted on [Themes and Problems](#).

Animatronics Participants (two [2] teams per chapter) demonstrate knowledge of mechanical and control systems by designing, fabricating, and controlling an animatronics device that will communicate, entertain, inform, demonstrate and/or illustrate a topic, idea, subject, or concept. Sound, lights, and a surrounding environment must accompany the device.

Architectural Design Participants (two [2] teams, or two [2] individuals, per chapter) develop a set of architectural plans and related materials for an annual architectural design challenge and construct a physical, as well as a computer-generated model, to accurately depict their design.

Biotechnology Design Participants (three [3] teams per chapter, two to six [2-6] members per team) select a contemporary biotechnology problem (that relates to the [current year's published topic](#)) and demonstrate understanding of it through documented research, the development of a solution, a display (including an optional model or prototype), and an effective multimedia presentation.

Board Game Design Participants (two [2] teams per chapter) develop, build, and package a board game that focuses on the subject of their choice. The game should be interesting, exciting, visually appealing, and intellectually challenging. Each team will have to design the packaging, instructions, pieces, and cards associated with creating and piloting a new board game. Semifinalists for the event will set up the game, demonstrate how the game is played, and explain the game's features.

Chapter Team Participants (one [1] team of six [6] members per chapter) take a written parliamentary procedures test in order to qualify for the semifinals, in which they complete an opening ceremony, items of business, parliamentary actions, and a closing ceremony within a specified time period.

Children's Stories Participants (three [3] teams or three [3] individuals per chapter – or a combination of teams and individuals that equals three [3] entries per chapter) create an illustrated children's story of high artistic, instructional, and social value. The narrative may be written in prose or poetry and take the form of a fable, adventure story, or other structure. The physical story book should be of high quality and designed to meet the [year's given theme](#). The story must have a science, technology, engineering, and mathematics (STEM) focus.

Coding Participants (one [1] individual, or one [1] team of two [2] members, per chapter) respond to an annual coding-related design challenge by developing a software program that will accurately address an on-site problem in a specified, limited amount of time.

Computer-Aided Design (CAD), Architecture Participants (two [2] individuals per chapter) use complex computer graphic skills, tools, and processes to develop representations of architectural subjects, such as foundation and/or floor plans, and/or elevation drawings, and/or details of architectural ornamentation or cabinetry.

Computer-Aided Design (CAD), Engineering Participants (two [2] individuals per chapter) use complex computer graphic skills, tools, and processes to develop three-dimensional representations of engineering subjects such as a machine part, tool, device, or manufactured product.

Computer Integrated Manufacturing (CIM) Participants (two [2] teams of two to six [2–6] members per chapter) design, fabricate, and use Computer Integrated Manufacturing (CIM) to create a promotional TSA product that will showcase the current conference city and/or state.

Debating Technological Issues Participants (three [3] teams of two [2] members per chapter) work together to prepare for a debate against a team from another chapter. The teams will be instructed to take either the Pro or Con side of a selected subtopic.

Digital Video Production Participants (three [3] teams per chapter; an individual may participate solo in this team event) develop a public service announcement and a digital video (with sound) that focuses on [the given year's theme](#).

Dragster Design Participants (two [2] individuals per chapter; one [1] entry per individual) design, produce a working drawing for, and build a CO²-powered dragster.

Engineering Design Participants (three [3] teams of three to six [3 - 6] members per chapter) develop a solution to a National Academy of Engineering grand challenge that is posted on the national TSA website. The solution offered will be informed and designed by precise problem definition, thorough research, creativity, experimentation (when possible), and the development of documents and appropriate models (mathematical, graphical, and/or physical prototype/model). Semifinalist teams present and defend their proposed solution to a panel of judges.

Essays on Technology Participants (three [3] individuals per chapter) write a research-based essay (using two or more sources provided on-site) that makes insightful connections about a current technological topic.

Extemporaneous Speech Participants (three [3] individuals per chapter) verbally communicate their knowledge of technology or TSA subjects by giving a speech after having drawn a card on which a technology or TSA topic is written.

Fashion Design and Technology Participants (three [3] teams of two to four [2-4] members per chapter) research, design, and create a portfolio and wearable prototype that reflect [the current year's theme](#). Semifinalist teams participate in a presentation/interview in which they present their garment designs to judges.

Flight Endurance Participants (two [2] individuals per chapter; one [1] entry per individual) analyze flight principles with a rubber band-powered model aircraft.

Forensic Science Participants (one [1] team of two [2] members per chapter) take a written test of basic forensic science theory to qualify as semifinalists. Semifinalist teams will examine a mock crime scene and demonstrate their knowledge of forensic science and crime scene analysis. Students will be expected to survey the scene and use proper techniques to collect evidence from the mock crime scene. Students will then collect their data and perform a detailed written analysis of the crime scene.

Future Technology Teacher Participants (two [2] individuals per chapter) investigate technology education preparation programs in higher education and test their potential as a future technology educator.

Music Production Participants (three [3] teams per chapter; an individual may participate solo in this team event) produce an original musical piece that is designed to be played during the National TSA Conference opening or closing general sessions.

On Demand Video Participants (one [1] team of two to six [2-6] members per chapter) write, shoot, and edit a 60-second video onsite during the conference.

Photographic Technology Participants (one [1] individual per chapter) demonstrate understanding of and expertise in using photographic and imaging technology processes to convey a message based on a theme. Semifinalists record images and then utilize graphic editing software to prepare a single final image as a solution to an onsite prompt.

Prepared Presentation Participants (three [3] individuals per chapter) deliver an oral presentation, using a digital slide deck, on a topic provided onsite.

Promotional Design Participants (three [3] individuals per chapter) use computerized graphic communications layout and design skills in the production of a promotional resource for TSA.

Scientific Visualization (SciVis) Participants (three [3] teams per chapter; an individual may participate solo in this team event) use either 2D or 3D computer graphics tools and design processes to communicate, inform, analyze, and/or illustrate a STEM topic, idea, subject, or concept.

Software Development Participants (one [1] team per chapter) use knowledge of cutting-edge technologies, algorithm design, problem-solving principles, effective communication, and collaborative teamwork to design, implement, test, and document a software development project of educational or social value.

Structural Design and Engineering Participants (one [1] team of two [2] members per chapter) work as a team to build a designated structure that is posted on the TSA website. Teams apply the principles of structural design and engineering through research, design, construction, destructive testing, and assessment to determine the design efficiency of the structure.

System Control Technology Participants (one [1] team of three [3] members per chapter) work on site to develop a computer-controlled model-solution to a problem,

typically one from an industrial setting. Teams analyze the problem, build a computer-controlled mechanical model, program the model, explain the program and mechanical features of the model-solution, and write instructions for evaluators to operate the device.

Technology Bowl Participants (one [1] team of three [3] members per chapter) demonstrate their knowledge of TSA and concepts addressed in the technology content standards by completing a written, objective test; semifinalist teams participate in question/response, head to head team competition.

Technology Problem Solving Participants (one [1] team of two [2] members per chapter) use their skills in problem solving to develop a finite solution to a problem provided on site.

Transportation Modeling Participants (one [1] individual per chapter) research, design, and produce a scale model of a vehicle that fits the annual design problem.

Video Game Design Participants (three [3] teams per chapter) develop a game that focuses on the yearly [theme](#). The game must have high artistic, educational, and social value and be interesting, exciting, visually appealing, and intellectually challenging.

Webmaster Participants (one [1] team of three to five [3-5] members per chapter) design, build, and launch a website that features the school's career and technology/engineering program, the TSA chapter, and the chapter's ability to research and present a given topic pertaining to technology. Semifinalists participate in an onsite interview to demonstrate the knowledge and expertise gained during the development of the website—with an emphasis on web design methods and practices, as well as their research for the annual design topic.

2019-2020 Competitive Event Themes and Problems are located at
<http://tsaweb.org/Themes-and-Problems>

Competition Updates are located at <http://tsaweb.org/Updates-and-Clarification>

Be sure to review the General Rules and Regulations are located in the TSA High School General Rules Guide for the 2019 and 2020 National TSA Conference.



Below is a summary description of the 2019 NC TSA ONLY competitive events. Detailed specifications and rules regarding each event can be found at:

<https://drive.google.com/drive/folders/0B84UxEoLQ8nCUihxeTJIWTFpYkU>

- NEW CHAPTER EVENTS:
 - These select competitive events are designed for chapters that have existed three years or less.
 - Solve the Problem MS and HS
 - Structures MS and HS
 - Robotics MS and HS
 - Comic Strip MS
 - Storyboarding HS
 - Catapult MS
 - Trebuchet HS
 - Beginning February 1, 2019, detailed specifications and rules regarding each event can be found: at
<https://drive.google.com/drive/folders/0B84UxEoLQ8nCUihxeTJIWTFpYkU>

NC TSA State Pin Design - Open to MS and HS participants - Submit by 1/11/19

NC TSA State T-Shirt Design – Open to MS and HS participants -Submit by 3/1/19

NC TSA Design Your Own Competitive Event – HS Only

NC TSA Engineered Dragster Design – Open to MS and HS participants



TSA and VEX Competitions 2019



VEX VRC – Challenge: Turning Point. Limit of TWO teams. Open to Middle or High School

VEX Skills – Limit of TWO individuals. Open to Middle or High School

VEX IQ – Challenge: Next Level. Limit of TWO teams. Open to Middle School Only

Rules and Regulations:

- Visit the National TSA site for additional information located at <http://tsaweb.org/Vex-Robotics-Competition>
- Your team must register for the event on robotevents.com on or before March 1, 2019.
- Your team then should register and pay on the NC TSA site for the conference.
- For information about North Carolina TSA Tournaments, contact NCTSA VEX Coordinator: John Butler at jbutler@rock.k12.nc.us