2016 Western Region NC TSA Conference
February 26, 2016
Appalachian State University

Below is a summary description of the 2016 and 2017 MIDDLE school level TSA competitive events. Detailed specifications and rules regarding each event can be found in the *2016 & 2017 Middle School Technology Activities, National TSA Conference Competitive Events Guide.*

Biotechnology Design Participants (**three teams per chapter**) conduct research on a contemporary biotechnology issue of their choosing, document their research, and create a display. The information gathered may be student-performed research or a re-creation or simulation of research performed by the scientific community. If appropriate, a model or prototype depicting some aspect of the issue may be included in the display. *No Onsite Presentations or Interviews.*

Career Prep Participants **(three individuals per chapter)** conduct research on a selected technology-related career and use the knowledge gained to prepare a letter of introduction and a chronological skills resume. Top 5 Semifinalists participate in a mock interview.
> In 2016, students choose one (1) of these careers:
> > • Civil engineer
> > • IT manager
> > • Computer programmer
> > • Project manager

Catapult Design Participants (**three teams of up to four individuals per chapter)** design and produce a working catapult that is adjustable and propels hollow plastic golf balls at a scoring target.

Children's Stories Participants **(three teams per chapter; a team of one individual is permitted)** create an illustrated children's story that will incorporate educational and social values. The story must revolve around the theme for a given year that is posted on the TSA website. Top 5 semifinalists will present their stories to the judges.
> Theme: The marine life of our oceans, lakes, rivers, and/or streams

Community Service Video Participants **(three teams per chapter; entries may be submitted by an individual or group)** create and submit a video that depicts the local TSA chapter's service with the American Cancer Society, national TSA's community service partner.

Construction Challenge Participants **(three teams per chapter)** submit a scale model/prototype with a portfolio that documents the use of their leadership and technical skills to fulfill an identified community need related to construction. *No Onsite Presentations or Interviews.*

Digital Photography Participants **(three individuals per chapter)** produce an album of color or black and white digital photographs (representing or relating to a chosen theme) and place the album on a storage device for submission. Semifinalists produce a series of digital photographs taken at the conference that are edited appropriately for an on-site task. *No on-site problem.*
> Theme: Family

2016 Western Region NC TSA Conference
February 26, 2016
Appalachian State University

Dragster Participants **(five individuals per chapter; one entry per individual)** design and produce a CO_2-powered dragster according to stated specifications, using only specified materials. *No on-site interview.*

Environmental Engineering Participants **(three teams per chapter)** conduct research on a posted environmental engineering topic, document their research, and develop a multimedia presentation on the topic. *No Onsite Presentations or Interviews.*
    Topic: Water supply and treatment

Flight Participants **(five individuals per chapter, one entry each)** study the principles of flight and design in order to fabricate a glider that stays in flight for the greatest elapsed time. Flight duration of the gliders and documentation of the design process are the primary elements of evaluation.

Inventions and Innovations Participants **(three teams of at least three individuals per chapter; one entry per team)** investigate and determine the need for an invention or innovation of a device, system, or process, and then brainstorm ideas for a possible solution. Top 5 Semifinalists make an oral presentation to a panel of judges (who act as venture capitalist investors) to persuade the panel to invest in their invention/innovation.

Junior Solar Sprint Participants **(three teams per chapter, one entry per team)** apply STEM concepts, creativity, teamwork, and problem-solving skills as they design, construct, and race a solar-powered model car.

Mass Production Participants **(one team of at least two individuals)** manufacture a marketable product related to the current year's theme. The team submits a documentation portfolio of the activities involved and three identical products made during the manufacturing process.
    Theme: A desk organizer that includes the TSA logo

Medical Technology Participants **(three teams of at least two individuals per chapter; one entry per team)** conduct research on a contemporary medical technology issue of their choosing, document their research, and create a display. If appropriate, a model or prototype depicting an aspect of the issue may be included in the display.*No Onsite Presentations or Interviews.*

Microcontroller Design Participants (three teams of three to five individuals per chapter) develop a working digital device with real-world applications. Through a multimedia presentation, product demonstration, and documentation, the team demonstrates in detail its knowledge of microcontroller programming, simple circuitry, product design, and marketing.
    Challenge: Create an educational toy for a preschool-aged child (ages 2-4 years old)

Prepared Speech Participants **(two individuals per chapter)** deliver a speech that reflects the theme of the current year's national conference.
    (Conference) Theme: Building a Legacy

Problem Solving Participants **(one team of two individuals per chapter)** use problem solving skills to develop a finite solution to a problem provided on site.

2016 Western Region NC TSA Conference
February 26, 2016
Appalachian State University

Promotional Marketing Participants **(three individuals per chapter, one entry per individual)** design a three-part **TSA Marketing Toolkit** that must include a national conference promotional poster, a state delegation fact sheet, and a chapter t-shirt design.*No on-site problem.*

STEM Animation Participants **(three teams per state, one entry per team)** use computer graphics tools and design processes to communicate, inform, analyze, and/or illustrate a STEM topic, idea, subject, or concept. Semifinalists give a presentation.

Structural Engineering Participants **(three teams of two individuals per chapter)** apply the principles of structural design and engineering through basic research, design, construction, and destructive testing to determine the design efficiency of a structure. *No on-site construction.*
Structural Engineering Continued:
> *LInk to 2016 Challenge:*
> *http://www.tsaweb.org/sites/default/files/2016%20MS%20Structural%20Engineering%20problem%20statement.pdf*
>
> *Link to Verification Form:*
> *http://www.tsaweb.org/sites/default/files/MS%20STRUCTURAL%20ENGINEERING%20Verification%20Form.pdf*

Tech Bowl Participants **(one team of three individuals per chapter)** take a written objective examination to qualify for the oral question/response, head-to-head team competition phase of the event.

Video Game Design   Participants **(three teams of two to six individuals per chapter)** develop, build, and launch an E-rated game that focuses on the subject of their choice. The game should be interesting, exciting, visually appealing, and intellectually challenging. The game and all required documentation will be evaluated pre-conference. *No on-site interview.*

Website Design Participants **(three teams of three to six individuals per chapter, one entry per team)** design, build, and launch a website that features the team's ability to incorporate the elements of website design, graphic layout, and proper coding techniques. *No on-site interview.*
> *Link to 2016 Challenge:*
> http://www.tsaweb.org/sites/default/files/2016%20MS%20Website%20Design_design_brief_FINAL.pdf
> **To submit your URL, please use this link:** http://goo.gl/forms/kEBEVQBQ0a
> **Be sure to submit your URL on or before 11:59 PM on February 25, 2016**

VEX VRC - Teams must be registered with Roboevents.com in order to compete. Limit of two teams per chapter. Additional information is located at
http://www.roboticseducation.org/vex-robotics-competitionvrc/tsa-vex-robotics-competition/

Be sure to refer to the following site for competition updates:
http://www.tsaweb.org/Competition-Updates