Arkansas High School Competitive Events Guide

2025

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TSA Honor Statement

All work must be created and completed by individual competitors or teams. Plagiarism, the use of Generative Artificial Intelligence (GenAI) software, copyright violation, cheating, and falsification of information are prohibited. Participants may NOT use any generative artificial intelligence (GenAI) tools (e.g. ChatGPT, Google Gemini, GitHub Copilot, etc.). Any attempt to gain an unfair advantage will not be tolerated. Competitors at any level of TSA competition understand and agree to abide by the TSA Honor Statement. If it is determined that a student violated the TSA Honor Statement, the entry will be disqualified.

Judge Pro Submission Instructions

File Naming Conventions

For Team Events:

Event Abbreviation_Chapter ID Number_Team Number

- Example*: *ADHS_2992_3.pdf*

Note: First 4 digits are the Chapter ID Number. In the example above ADHS_2992-3 the ADHS is the event (Architectural Design); 2992 is the school; and the 3 is the team number (team number 3). If you are unsure about your chapter ID and team number for the contest you are in, see your advisor.

For Individual Events:

Event Abbreviation_Participant ID Number (ask your advisor for your number)

- Example: *CADEHS_2992299.pdf*

Events with Pre-Submissions and Their Abbreviations

Event name	Level	Abbreviation	Event name	Level	Abbreviation
Architectural Design	HS	AR_ADHS	Video Game Design HS	HS	VGDHS
Audio Podcasting	HS	APHS	Virtual Reality Visualization (VR)	HS	VRVHS
Biotechnology Design	HS	BIOHS	Webmaster	HS	WEBHS
Board Game Design	HS	BDHS	Biotechnology	MS	BIOMS
Children's Stories HS	HS	AR_CSHS	Career Prep	MS	CAPMS
Data Science & Analytics	HS	AR_DSAHS	Children's Stories	MS	CSMS
Debating - Technology Issues	HS	DTIHS	Community Service Video	MS	CSVMS
Digital Video Production	HS	DVPHS	Construction Challenge	MS	CONCMS
Drone Challenge (UAV)	HS	AR_DRCHS	Data Science & Analytics	MS	DSAMS
Engineering Design	HS	AR_EDHS	Digital Photography	MS	DPMS
Fashion Design and Technology	HS	AR_FDTHS	Mass Production	MS	MPMS
Flight Endurance	HS	AR_FEHS	Mechanical Engineering	MS	MEMS
Future Technology & Engineering Teacher	HS	FTTHS	Medical Technology	MS	MTMS
Geospatial Technology	HS	AR-GEOHS	Microcontroller Design	MS	MDMS
Manufacturing Prototype	HS	AR-CIMHS	Off the Grid	MS	OTGMS
Music Production	HS	MPHS	Promotional Marketing	MS	PMMS
Photographic Technology	HS	PTHS	STEM Animation	MS	SAMS
Promotional Design	HS	PMDHS	Video Game Design	MS	VGDMS
Transportation Modeling	HS	TMHS	Website Design	MS	WEBMS

For Advisors

Advisors must select the "Export Judges System Student Submission Information" button from their state conference registration for participant IDs and contest passwords.

Advisors may elect to upload files and URLs on behalf of students at https://judgepro.registermychapter.com/org/jpar-tsastate/conf/jpar-tsastate. Advisor log-in is the participant ID and password as you used to create your state conference registration.

Pre-Conference Events

For the events below, students will log into https://judgepro.registermychapter.com/org/jpar-tsastate/conf/jpar-tsastate/student using the Participant ID listed on the Conference Registration invoice and the password set up by their chapter advisor in the Conference Registration System. Students can log in at any time and can open the event at any time after 12:01 am on 3/3/2025, but once the event is opened, it must be completed in the allotted amount of time. After the allotted amount of time, the submission window will close, so make sure students have a solid block of time to work. Submissions will automatically close at 11:59 pm on 3/7/2025 regardless of how much allotted time is left. For CAD events, it is recommended that advisors schedule time in their classrooms for students to work. Students should not be using any print or online resources to help them with the design problem.

Event	Level	Allotted Time	Event Abbreviation
CAD- Architecture	HS	3 hours (180 minutes)	CADAHS
CAD- Engineering	HS	3 hours (180 minutes)	CADEHS
On Demand Video	HS	36 hours (2160 minutes)	ODVHS

Preliminary Tests

For the events below, all of your student teams will need to take their tests at the same time. Each test is 60 minutes long and timed by the testing system. The tests will be available each weekday from 3/3/2025 to 3/7/2025 (inclusive) between 7:00 am and 5:00 pm. You will get an email from Allison Carter that has your student testing tickets. Be aware that if a student starts the test and moves to a different window/tab for more than 3 seconds, the test will automatically submit. The test will work best in Chrome browsers, but is compatible with all browsers EXCEPT Internet Explorer.

Event name	Level	Abbreviation	Event name	Level	Abbreviation
Technology Bowl	HS	TBHS	Coding	MS	CODMS
Forensic Science	HS	FSHS	Forensic Technology	MS	FTMS
Chapter Team	HS	CHTHS	Technology Bowl	MS	TBMS
Cybersecurity	MS	CYMS	Chapter Team	MS	CHTMS
Electrical Applications	MS	EAMS			

For Students

Prepare your Documentation Portfolio as a single, multi-page PDF document and upload it at https://judgepro.registermychapter.com/org/jpar-tsastate/conf/jpar-tsastate/student. The PDF document is limited to a file size of 30mb or less.

If your contest requires entering a URL, the URL must point directly to your team's entry. Entries that require a software download or a request that access be granted will not be judged.

For the events below, you will log into https://judgepro.registermychapter.com/org/jpar-tsastate/conf/jpar-tsastate/student using the Participant ID listed on your advisor's Conference Registration invoice and the password set up by your chapter advisor in

the Conference Registration System. You can log in and can open the event at any time after 12:01 am on 3/3/2025, but once the event is opened, it must be completed in the allotted amount of time. After the allotted amount of time, the submission window will close, so make sure you have a solid block of time to work. Submissions will automatically close at 11:59 pm on 3/7/2024 regardless of how much allotted time is left. For CAD events, it is recommended that advisors schedule time in their classrooms for you to work. You should not be using any print or online resources to help with the design problem.

Event	Allotted Time
CAD- Architecture	4 hours (240 minutes)
CAD- Engineering	4 hours (240 minutes)
On Demand Video	36 hours (2160 minutes)

Documentation Format Guidelines

See this document for documentation formatting guidelines: 📄 Documentation Guide.pdf

Animatronics

Overview

Animatronics refers to a robotic device that emulates a human or animal or brings an inanimate object "to life." Teams produce an animatronics device complete with an appropriate display. The animatronics device must use control technology in its performance and fulfill the requirements of the theme to communicate, entertain, inform, demonstrate and/or illustrate a topic, idea, subject, or concept. Sound, lights, and surrounding environment are to accompany the device. The annual design problem is posted on the National TSA website under Themes & Problems.

Eligibility

Two (2) teams of 2-3 students per chapter may register.

Time Limits

Up to 10 minutes total for setup, presentation, and questions:

A. Up to five (5) minutes to set up.
B. Up to five (5) minutes for the presentation.
    1. The presentation time begins when students present background information about the project and must conclude on or before the five (5)-minute time limit.
    2. Timekeeper will stop the presentation at five (5) minutes.
C. Up to two (2) minutes to respond to questions from the judges.

Procedure

PRE-CONFERENCE
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants review the design problem on the National TSA website under Themes & Problems.
C. Participants concentrate their efforts on designing an animatronics device that uses control technology.

ON-SITE
A. No more than two (2) team members report to the event area at the time and place stated in the conference program to submit the model entry.
B. Models are evaluated by judges. Neither students nor advisors are present at this time.

C. The team reports at the assigned time and place to participate in the presentation/Q&A.
D. No more than two (2) team members pick up the team's entry from the display area at the time and place stated in the conference program.

Regulations and Requirements

A. The starting position (resting) dimensions of the entry may not exceed 15" deep x 3' wide x 4' high. The device may extend beyond the dimensions of the display during the demonstration.
B. The exterior shell or skin is required. It must be removable in order to show the judges the internal components of the project.
C. The animatronic device must have at least three (3) separate movements that must include:
    1. Fluid power to aid in the movement of the animatronics device. If no fluid power is used, a ten (10)-point deduction will be incurred.
    2. Sound, lights, and sensors in the project model.
    3. Gearing systems, linkages, and/or cabling systems, etc., to aid in the movement of the device.
D. Control technology must be used during the performance.
E. A wet cell battery may not be used in the animatronics device.
F. The animatronics device may use AC power, but the team will only have access to an AC outlet during the demonstration/presentation.
G. Should the device suggest anything that is inappropriate by language, sound, or movement, immediate disqualification will result.
H. A team that fails to appear for its demonstration forfeits evaluation.

Evaluation

A. The device
B. The presentation/Q&A

Refer to the official rating form for more information.

Architectural Design

Overview

Participants develop a set of architectural plans and a portfolio in response to an annual architectural design challenge. They also construct physical and computer-generated models to accurately depict their design.

Participants must demonstrate an understanding of and aptitude for architectural design, the development of plans, modeling techniques and practice, and the awareness of the role that the built environment can play in human behavior and interactions. The design problem for the current school year will be posted on the National TSA website under Themes & Problems.

Eligibility

A. Three (3) teams of 1-6 students per chapter may register.
B. Fifteen (15) teams will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
Up to ten (10) minutes for the presentation/interview broken down as follows:
A. One (1) minute for setup
B. Seven (7) minutes for the presentation
C. Two (2) minutes to respond to questions from the judges

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants access the annual design challenge found on the National TSA website under Themes & Problems.
C. Participants prepare the documentation portfolio according to the regulations.

D. Participants prepare their architectural design model.
E. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
F. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. No more than two (2) team members report to the event area at the time and place stated in the conference program to submit the model entry.
B. Models are evaluated by judges. Neither students nor advisors are present at this time.
C. The team reports at the assigned time and place to participate in the presentation/Q&A.
D. No more than two (2) team members pick up the team's entry from the display area at the time and place stated in the conference program.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
Documentation materials (comprising a "portfolio") are required and must be submitted as a multi- page PDF document with pages in this order:
A. Title page with the event title, the team identification number, the conference city and state, and the year; one (1) page
B. Table of contents; pages as needed
C. A description of the individual/team's interpretation of the design challenge and an explanation of the style and merits of the design concepts; one (1) page
D. List and description of each of the construction systems (any and all that apply) and their incorporation and application to the solution: delivery, construction methods and materials, electrical wiring, plumbing, HVAC, and site requirements; maximum of six (6) pages
E. A schedule of finish materials for all exterior and interior surfaces of the architectural design (this is not a list of the model construction materials); one (1) page
F. A complete set of student created drawings (can be CAD drawings); pages as needed. Drawings must be appropriately scaled to fit the PDF format required for submission.
    1. Site Plan
    2. Overall Floor Plan(s)

3. Enlarged Floor Plans as required to describe design elements
4. Roof Plan
5. Exterior Elevations
6. Building Section(s)
7. Interior Elevation(s) or Perspective(s)

G. Work Log (see Forms Appendix); pages as needed

H. Mentorship Verification form; participants are required to seek the mentorship of an architect or other professional involved with construction and renovation (see Mentorship Verification form); one (1) page. The mentorship verification form may include the necessary names of students/adults and is exempt from the general rule that no identifying information may be used. However, students are not allowed to use their full names, their school name, or the state they are from anywhere else in the entry (including title blocks on drawings).

I. A 3D modeling/rendering drawing of the individual/team's final design with appropriate details included; drawing sheet size B, 11" x 17"; one (1) page. drawing must be appropriately scaled to fit the PDF format required for submission

J. List of resources/references; pages as needed

K. Photographs of the finished model (maximum of four photos per page); maximum of three (3) pages

ON-SITE SEMIFINAL ROUND
Model:

A. The architectural model must be placed on a site board, the size of which is posted along with the annual problem each year on the National TSA website under Themes & Problems.

B. Model construction concepts, materials, techniques, and applications:
1. Foam core sheet or similar materials are suggested (but not limited to) for use as interior walls, exterior walls, and roof construction.
2. Foam core board that is ½" thick or greater is recommended for use as the site board for the model.
3. Dowels may be used to represent columns or circular components.

C. Participants should pay close attention to the scale of all materials as they relate to the scale of the model.

D. The model may not include any electrical or battery-powered enhancements.

E. No glass or liquid may be used as part of any model.

F. No additional points will be awarded for superfluous aesthetic additions.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
A. The documentation portfolio

ON-SITE SEMIFINAL ROUND
A. The architectural model
B. The presentation/interview

Refer to the official rating form for more information.

Audio Podcasting

Overview

Participants use digital audio technology to create original content around a predetermined technology theme. Podcasting encourages good storytelling, voice acting, and folly sound effects to create a coherent creative work. The theme will be posted on the TSA website under Themes & Problems. Semifinalists complete an on-site challenge to produce additional podcast(s). Required criteria, such as lines of dialog, topics, etc. will be revealed at the semifinalists orientation meeting.

Eligibility

A. Three (3) teams of 1-6 students per chapter may register.
B. Five (5) teams will advance to the semifinal round based on their documentation portfolio and preliminary podcast scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

A. The audio piece must be more than one (1) minute and less than five (5) minutes in length. More than one recording (episode) is acceptable if the total time for each episode, and the entire audio piece, meets the above time limit requirements.
B. A deduction of five (5) points total will be incurred for each fifteen (15) seconds under the one (1) minute minimum and for each fifteen(15) seconds over the five (5) minute maximum length.
C. The timing starts with the first sound and continues until the last sound ends.
D. Student names *may* be used in both the podcast and the documentation portfolio.

ON-SITE SEMIFINAL ROUND
A. The number of podcasts and timing will be revealed at the semifinalist orientation meeting.
B. Participants have three and a half (3.5) hours, beginning at the semifinalists meeting, to complete and submit the entire production.

C. The time limits for the on-site audio podcast will be provided at the semifinalist orientation meeting.
D. A deduction of five (5) points will be incurred for each fifteen (15) seconds under the minimum and for each fifteen (15) seconds over the maximum length.
E. The timing starts with the first sound and continues until the last sound ends.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants design an original audio podcast piece.
C. Participants record their design process within a documentation portfolio.
D. Participants submit both a URL to the audio file (in MP3 or suitable format) and a multi-page PDF of the required documentation to JudgePro by 11:59 pm CT on February 18, 2025.
E. Judges independently assess the entries using the following procedure:
   1. Judges score the audio podcast criteria
   2. Judges score the Documentation Portfolio criteria.
F. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Semifinalists report at the time and place stated in the conference program to receive the on-site challenge information. Competition attire adherent to the ARTSA State Conference dress code is required to receive the on-site challenge.
B. The event coordinator distributes the materials, information, directions, and deadlines to each team.
C. Each team supplies its own audio production and editing equipment to complete its entry.
D. Teams are responsible for submitting a hyperlink of their audio solution and a PDF of a completed Student Copyright Checklist using the submission procedures provided by the event coordinator.
E. Entries are reviewed independently by judges.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

A. The audio podcast and required documentation must be uploaded or located online and accessible for evaluation by the posted deadline.

B. The URL must point directly to the team's entry. Entries that require a software download or a request that access be granted will not be judged.

C. Entries received, or changes made to submitted entries after this deadline will not be judged.

D. The audio podcast may include the first name of the students in the podcast and is exempt from the general rule that no identifying information may be used. However, students will not be allowed to use last names, their school name, or the state they are from.

E. Audio Podcast:
　1. The URL must point directly to the audio file and not require any permissions or installation of software for evaluation.
　2. Music may accompany the audio piece but is not required.
　3. The audio piece must be greater than one (1) minute and less than five (5) minutes in length.
　4. There will be a five (5)-point deduction for:
　　a. each five (5) seconds under the one (1)-minute minimum
　　b. each 15 seconds over the five (5)-minute maximum length.
　5. All audio pieces must be the original work of the team and must have been completed within the current school year.
　6. Free, non-copyrighted sounds, loops, or other audio elements may be incorporated into audio pieces. The sources of these elements and the way in which they are used in the audio piece must be described in the portfolio.
　7. Each actual and/or synthesized voice used in the final piece must be illustrated in a timeline format in the portfolio.
　8. Where applicable, all ideas, sounds, and loops from other sources must be cited. If copyrighted material is used, proper written permission must be included (see the Student Copyright Checklist in the Forms Appendix). NOTE: Failure to follow this procedure results in disqualification.

F. Podcast Cover Art
　1. All entries must include a podcast cover art graphic (JPEG or PNG).
　2. The graphic must fit a square ratio, set to 1400 x 1400 pixels.

G. Documentation Portfolio:
　1. The documentation portfolio should be complete, well written, and professional in organization and appearance.
　2. Documentation materials (comprising a "portfolio") are required and must be submitted as a multi-page PDF document with pages in this order:
　　a. Title page with the title of the audio piece, the event title, Chapter ID, the conference city and state, and the year; one (1) page
　　b. Table of contents; pages as needed
　　c. Podcast Cover Art (size given in Pre-conference E.2); one(1) page
　　d. Work Log (see Forms Appendix); pages as needed
　　e. Self-evaluation of the piece using criteria from the official rating form; pages as needed.
　　f. Audio composition. Each actual and/or synthesized voice used in the final audio must be illustrated graphically using a timeline format; pages as needed.
　　g. When audio elements are used that were NOT created by the team, the source, effects applied, the way each element was incorporated into the audio piece and how each element corresponds to the audio must be included; pages as needed.
　　h. List of hardware, software, and instruments used in the development of the audio piece; one (1) page
　　i. List of references that includes sources for materials (non-copyrighted);pages as needed
　　j. Completed Student Copyright Checklist (see Forms Appendix)

ON-SITE SEMIFINAL ROUND

A. Semifinalists report at the time and place stated in the conference program to receive the on-site challenge information. Competition attire adherent to the ARTSA State Conference dress code is required to receive the on-site challenge.

B. The event coordinator explains any recording restrictions for the specific property.

C. All participant voice audio must be the original work of the team and must have been completed during the event timeline.

D. On-site Submission Information:
　1. Participants may choose any audio hosting site (such as an UNLISTED YoutTube URL), or a sharable link in

cloud storage, as long as the audio podcast is located online and accessible for evaluation.

2. The URL must point directly to the participant's entry. Entries that require a software download or request access be granted will not be judged.

3. Entries received or changes made to submitted entries after the deadline will not be judged.

4. Students must complete the Student Copyright Checklist (see Forms Appendix) and save it as a PDF to be submitted electronically with the entry online.

5. When applicable, all ideas and sounds from other sources must be cited. Copyright materials may NOT be used. If including a citation page, the page must be included as the second page of the Student Copyright Checklist in the PDF in D.4.

6. ARTSA will not provide wireless Internet.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
A. The audio podcast
B. The documentation portfolio

ON-SITE SEMIFINAL ROUND
A. The completed on-site audio podcast(s)

Refer to the official rating form for more information.

Biotechnology Design

Overview

Teams conduct research on a contemporary biotechnology advancement based on an annual theme. Teams document their research, and create an effective interactive display. The information gathered may be student-performed research or a recreation or simulation of research performed by the scientific community. If appropriate, a model or prototype may be included. The topic for the current school year will be posted on the National TSA website under Themes & Problems.

Eligibility

A. Two (2) teams of 2-6 students per chapter may register.
B. Six (6) teams will advance to the semifinal round based on their documentation portfolio and preliminary podcast scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
Up to 10 minutes total for setup, presentation, and questions:
A. Time begins when students arrive at the judging table.
B. Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C. Presentation should be no longer than 7 minutes.
D. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Participants review the annual topic found on the National TSA website under Themes & Problems.
C. Participants concentrate their efforts researching a selected contemporary biotechnology issue.

D. Participants prepare their documentation portfolio, interactive display, and multimedia presentation according to the regulations.
E. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
A. No more than two (2) team members report at the time and place stated in the conference program to set up the display.
B. Entries are evaluated by the judges with neither students nor advisors present based on the Display criteria
C. The team, with their multimedia presentation, report to the event area at the time and place stated on their schedule.
D. The team participates in an on-site presentation that lasts a maximum of ten (10) minutes
E. The multimedia presentation must be presented on a student provided laptop

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Students must understand the fundamental concepts and principles of the contemporary biotechnology topic. Research on a problem within that topic should focus on significant impacts (opportunities and risks) on the environment, economy, and society, as well as any important ethical considerations.
B. Interactive Display:
   1. The total size of the display may not exceed 15" deep x 2.5' wide x 4' high, including the portfolio.
   2. A model or prototype is optional.
   3. Power
      a. AC electricity may not be used
      b. Dry cell or photo-voltaic cells may be used for power, if desired.
      c. Any power source used must fit within the maximum display area.
   4. All power must be switched off once the team has completed set-up.
   5. If the team wants judges to activate any electronic device in the display/model/prototype, complete instructions must be provided and clearly displayed to judges on how to power up the display/model/prototype, logging in, etc.

6. No harmful or illegal substances, viruses, live plants, or animals may be used as a part of the display. No potentially dangerous processes may be demonstrated or included as part of the display.

7. The display must be presented as if it were in a children's museum that is geared towards the audience specific to the current year's theme.

C. Documentation materials (comprising "a portfolio") are required and must be uploaded digitally before the conference AND presented in a clear front report cover with the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the team identification number, the conference city and state, and the year; one (1) page

2. Table of contents; pages as needed

3. Definition and explanation of the problem; one (1) page

4. An explanation of the chosen solution, and other possible solutions and why they were rejected; maximum three (3) pages

5. A scenario of possible real-life applications; one (1) page

6. Supplementary information such as logs, graphs, sketches, drawings, illustrations, photographs, etc.; maximum four (4) pages

7. A print-out of the accompanying multimedia presentation (printed with three [3] slides per page, recommended); pages as needed

8. Work Log (see Forms Appendix); pages as needed

9. A minimum of three (3) different types of resources, such as books, interviews, professional journals, websites, magazines, etc. All must be cited using a professional citation style of the competitors choosing. Some examples of professional citation styles include MLA, APA, Chicago, and IEEE; pages as needed.

D. Multimedia Presentation

1. The team reports at the time and place stated on their schedule with the following computer hardware for the presentation:
   a. a laptop computer
   b. projection equipment is not permitted
   c. laptop computers must operate on battery power

2. The team may reference their display and documentation during the presentation.

3. The team removes their laptop at the conclusion of the presentation and will pick up their display and portfolio at the conclusion of the conference.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
    A. The portfolio

ON-SITE SEMIFINAL ROUND
    A. The interactive display
    B. The presentation

Refer to the official rating form for more information

Board Game Design

Overview

Participants 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 designs and creates the packaging, instructions, pieces, and/or cards for their game and documents the processes associated with creating and piloting a new board game. Semifinalists set up the game, demonstrate how the game is played, explain the game's features, and discuss the design process.

Eligibility

A. Two (2) teams of 2-6 students per chapter may register.
B. Ten (10) teams will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
Up to 25 minutes total for setup, presentation, and questions:
A. Time begins when students arrive at the judging table.
B. Students will have 5 minutes to set up their entry and should begin the demonstration when setup is complete.
C. Demonstration should be no longer than 7 minutes.
D. Judges may ask questions for up to 8 minutes.
E. Students will have 5 minutes to repackage their entry.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants design and create the game entry, including the physical packaging. All components must be designed, engineered, created, and assembled together solely by the team.

C. Participants create a documentation portfolio to record the process.
D. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
E. Judges score the Documentation Portfolio criteria
F. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. No more than two (2) team members report at the time and place stated in the conference program to submit the:
   a. completed Board Game entry
   b. documentation portfolio presented in a clear front report cover
B. Entries are evaluated by the judges with neither students nor advisors present based on the Packaging and Board Game criteria
C. Semifinalist teams report at the assigned time and place for the demonstration/Q&A.
D. Semifinalist teams will set up the game and give a brief demonstration of the game.
E. Semifinalist teams answer questions about the documentation, the game's purpose, value, design, rules, and the development process.
F. Semifinalist teams repackage the game.
G. Judges independently assess the entries.
H. Semifinalist teams pick up their entry from the display area at the time and place stated in the conference program.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants design, create and package an entirely original board game including all parts, pieces and/or cards needed to play the game as well as accompanying instructions. If applicable, dice and sand timers may be commercially produced.
B. No identifying information other than a team identification number is to appear anywhere on the board game or portfolio.
C. Board Game:
   1. The physical board game should be of high quality and designed for the intended age group.
   2. The packaged game must be no larger than 12" x 18" x 3".

a. The game must be designed, engineered, created, and packaged solely by the team.
b. The materials used in packaging and manufacturing the game are to be determined by the team.

3. Game Instructions:
   a. must be clear, understandable, and age-appropriate
   b. must be included in both the packaged game and in the documentation portfolio
   c. must explain the rules in explicit detail
   d. The team must determine which format best presents the game's instructions.

4. The game must be able to be set up within five (5) minutes of opening the package.

5. Once evaluation of the game is complete, a player (judge) must be able to repackage it within five (5) minutes.

6. The game must include original work of the team. Work that is not created by the team must have proper documentation, showing copyright permissions and/or license for usage in the game segment.

7. When creating the game, the game must be free of any weapons or violence as stated in the general rules.

D. Documentation materials (comprising "a portfolio") are required and must be uploaded digitally before the conference AND presented in a clear front report cover with the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the name of the board game, the event title, the conference city and state, the year; and the team identification number; one (1) page
2. Table of Contents; one (1) page
3. Overview of the game; one (1) page
4. Intended audience (age range and number of players) and a game description/reasoning behind the choice of audience; one (1) page.
5. Game Instructions: pages as needed.
6. Description of the processes used to create the game and components; two (2) pages
7. Engineering drawings of parts/game/ packaging; pages as needed
8. Cost summary for created game; one (1) page
9. Work Log (see Forms Appendix); pages as needed
10. Student Copyright Checklist (see Forms Appendix); one (1) page
11. References/research sources; one (1) page

12. The portfolio and its contents become the property of TSA for communication purposes only. Publishing rights remain with the authors and illustrators.

ON-SITE SEMIFINAL ROUND
A. The team reports to the event area at the time and place stated on their schedule.
B. Team members have five (5) minutes to set up the game.
C. The team members will give a brief demonstration of the game and then answer interview questions. The demonstration/Q&A will last no more than ten (10) minutes.
D. The team will have five (5) minutes to repackage the game before leaving

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
A. The documentation portfolio

ON-SITE SEMIFINAL ROUND
A. The packaging
B. The board game
C. The demonstration
D. The Q&A

Refer to the official rating form for more information

Chapter Team

Overview

Participants take a parliamentary procedures test in order to qualify for the semifinals. Semifinalist teams are challenged to complete an opening ceremony, items of business, parliamentary actions, and a closing ceremony within a specified time period.

Eligibility

A. An unlimited number of teams of 6 students may register per chapter.
B. Team members do not have to be elected officers of the local chapter.
C. The four (4) teams with the highest averaged preliminary test will move on to the semifinals.
D. Team members who take the test and advance to the semifinalist portion of the event must be the same six (6) members.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
The one (1)-hour test is administered to all members of the team at the same time. Each member takes the test individually. The testing window is open from 3/3/2025-3/7/2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Fifteen (15) minutes with no penalty, and up to seventeen (17) minutes with penalty (see Time over chart) are permitted to complete required set-up time, parliamentary actions, items of business, and a presentation.
B. The time begins when the team is handed the event materials; the time ends when the gavel is rapped to close the meeting, or at seventeen (17) minutes (at that point all team members other than the secretary must leave the room; the secretary may then be taken to another room to complete the minutes).
C. The secretary has five (5) additional minutes to complete the minutes of the meeting.
D. Teams are penalized five (5) points per thirty (30) seconds for going over the allotted time, based on the following scale:

Time over fifteen (15) minutes	Penalty
15:01 to 15:30	Five (5) points per evaluator
15:31 to 16:00	Ten (10) points per evaluator
16:01 to 16:30	Fifteen (15) points per evaluator
16:31 to 17:00	Twenty (20) points per evaluator

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants take the test individually through the JudgePro system any time between Monday, March 3rd at 7:00 am and Friday, March 7th at 6:00 pm.
B. Participants follow the specific regulations and adhere to the directions provided by their proctor.
C. All team members must test at the same time but will take the exam individually.
D. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Semifinalist teams report at the assigned time and place for the oral presentation.
B. Each team follows the procedure for opening and closing a local chapter meeting.
C. Using knowledge of parliamentary procedures, each team follows an order of business to dispose of five (5) given parliamentary actions provided by the event coordinator and then closes the meeting according to the prescribed procedure.
D. There is a possibility for three (3) additional actions to be demonstrated for bonus points. If the actions are demonstrated correctly, then bonus points are awarded based on the degree of difficulty of the actions performed.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Team members take the test individually.
B. Teams consist of a president, vice president, secretary, treasurer, reporter, and sergeant-at-arms.
C. The same six (6) team members that compete in the
D. semifinal round must be the six (6) team members that took the preliminary test, should the team qualify.

ON-SITE SEMIFINAL ROUND

A. Meeting Set-up:
   1. Officer symbols and a gavel are placed on a long table with the United States flag standing to the right of the president's rostrum and the host state flag to the left.
   2. The president's rostrum should be centered between the two (2) flags.
   3. The symbols of the officers should be placed in front of the respective officers.
   4. The host state banners are optional and do not add to or subtract from a team's scores.

B. Teams demonstrate a call to order, pledge to the flag, roll call, order of business, and closing ceremony.
   1. Written materials, other than those provided by ARTSA, may not be taken to the event room.
   2. A set of secretary's minutes, a treasurer's report, a copy of the TSA creed, and a list of five (5) parliamentary actions are provided by the event coordinator when the team members enter the performance room.
      a. For the parliamentary actions, the list identifies the five (5) actions of parliamentary procedure to be performed by any member of the team. Participants should cooperate to complete the items of business.
      b. Bonus points are awarded for three (3) additional motions (advanced and/or more challenging parliamentary actions will score higher) by the officers, other than the presiding officer.
   3. The event coordinator also supplies each team with paper, six (6) pens, a calculator, and six (6) 3" x 5" notecards.
   4. A timepiece may be used by the team, if desired.
      a. Official timing begins as soon as the parliamentary actions are provided and stop at the team's final gavel to end the meeting.
      b. Five (5) points will be deducted for every thirty (30)-second interval over the allotted time (see Time Limits).
   5. Concerning the reading of the TSA creed by the secretary during the closing ceremony, a chapter has the option to recite the creed using one (1) or more of its team members.
   6. No reference should be made to a team's school, chapter name, city, or state.
   7. The state name on a TSA patch is acceptable.

C. At the conclusion of the oral presentation, each team secretary has five (5) minutes to write a copy of chapter minutes that are submitted to a judge. The coordinator begins timing the five (5) minutes when the secretary is seated at the area designated for the writing of the minutes.

D. All materials given to team members, as well as the chapter minutes and a completed treasurer's report, must be handed to the judges before the team leaves the room.

E. Any semifinalist team that fails to appear at the designated time is placed at the end of the list and allowed to participate at the discretion of the judges and event coordinator if time permits.

F. Teams are welcome to use desired pronouns during the oral demonstration.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
Each team's average test score.

ON-SITE SEMIFINAL ROUND
The demonstration of a chapter business meeting.

Refer to the official rating form for more information.

Children's Stories

Overview

Participants 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, designed to meet the year's given theme, which will be posted on the National TSA website under Themes & Problems.

Eligibility

E. Three (3) teams of 1-6 students per chapter may register.
F. Fourteen (14) teams will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
A. Ten (10) minutes per team are allotted for the teams to complete a presentation on the illustration technique, design process, writing and editing process, and book construction.
B. Five (5) minutes are allotted for the interview.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants review the annual design challenge found on the National TSA website under Themes & Problems.
C. Participants concentrate their efforts researching children's books and literature, particularly the creation of storybooks similar to the annual design challenge (e.g., pop-ups, interactive books, etc.).
D. Participants develop a high-quality children's storybook with illustrations.
E. Participants record their design process in a documentation portfolio.

F. Participants "field test" their storybook and document outcomes and findings.

ON-SITE SEMIFINAL ROUND
A. No more than two (2) team members report at the time and place stated in the conference program to submit the:
    1. Completed story book
    2. Documentation portfolio presented in a clear front report cover
B. Entries are evaluated by the judges with neither students nor advisors present based on the Storybook criteria
C. Semifinalist teams report at the assigned time and place for the presentation and interview.
D. No more than two (2) team members pick up the team's entry from the display area at the time and place stated in the conference program.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Storybook:
    1. Participants design and create an entirely original storybook, complete with narrative and illustrations to meet the annual design challenge.
    2. The physical storybook should be of high quality, designed to meet the age group for which it is intended. For the purposes of this event, children are defined as those twelve (12) years or younger.
    3. Together with the storybook, the narrative and accompanying illustrations should result in an experience that delights, enlightens, and contributes to the wholesome development of a child.
    4. The storybook and narrative with accompanying illustrations should take no more than ten (10) minutes to read and view.
    5. The maximum reading time is twelve (12) minutes, and no minimum.
    6. The physical storybook must not exceed 12" x 12" when closed.
    7. There is no limit on the number of inside pages(may be one or two-sided).
    8. The team must determine which format best presents the team's narrative and illustrations.
    9. There must be a minimum of seven (7) illustrations that enhance the story and deepen the child's

understanding and enjoyment of the reading experience.

    a. An illustration on the book's cover may count as one (1) of the required seven (7) illustrations.

    b. The team may use the cover illustration within the story as well.

    c. All illustrations MUST be original, freehand, and/or computer-generated drawings made by the team member(s).

    d. All computer-generated work MUST be developed from primitive lines and shapes and be the sole work of the team members.

    e. Physical or computer templates, previously existing drawings, characters, backgrounds, etc., are NOT PERMITTED.

10. The storybook may include the name of the author(s) and illustrator(s) on the cover and is exempt from the general rule that no identifying information may be used.

11. Copyrighted material is NOT PERMITTED.

12. All components, including the physical binding, must be the original work of the team members. No professional binding is allowed.

13. If narrative or illustrations appear in the story and they are not authored by one of the team members, the team is disqualified.

14. Photographic verification of the book construction process must be included in the portfolio.

15. The story must be no more than fifteen hundred (1500) words.

    a. There is a five (5)-point deduction for every hundred (100) words over the fifteen hundred (1500) word limit.

    b. Stories containing two thousand (2000) or more words are disqualified.

    c. There is no minimum number of words required.

    d. The word count (number of words comprising the story's narrative) must be listed on the inside of the front cover of the book.

16. Publishing rights remain with the authors and illustrators.

B. Documentation materials (comprising "a portfolio") are required and must be both uploaded to JudgePro AND printed and secured in a clear front report cover with the following single-sided, 8 ½" x 11" pages, in this order:

1. Title page with the title of the story, the event title, the conference city and state, the year, and the team ID number; one (1) page

2. Table of contents; pages as needed

3. Purpose of story; one (1) page

    a. Story's intent

    b. Summary of storyline and theme

    c. Intended audience (age, gender, demographics, and special disabilities, if any)

4. Photographic verification of book construction and binding; pages as needed

5. Work Log (see Forms Appendix); pages as needed

6. Field Test Summary. A "field test" is a reading of the storybook to a group of children in the intended target age range; maximum of two (2) pages

    a. A minimum of two (2) field tests must be conducted.

    b. Participants must document each field test with a summary paragraph that details the outcome findings.

    c. Each summary paragraph must include the date, time, and location of the field test.

    d. Each "field test" must be signed off by the chapter advisor.

7. Research summary: A written summary of the research, writing strategies, problems encountered, and solutions developed in the writing and illustrating of the story; one (1) page.

8. Project summary: A written summary of the research into the creation of storybooks similar to the annual design challenge (e.g. paper folding, interactive features in books). The summary must include the process and challenges the team encountered and the solutions developed in overcoming them; one (1) page.

9. A list of tools, software (if any), and techniques used in the creation of the physical storybook and illustrations, not to exceed one (1) page.

10. References/research sources; one (1) page.

ON-SITE SEMIFINAL ROUND

A. The team reports for a reading and interview time

B. The team will be given up to ten (10) minutes to present their book and discuss their design process with the judges and then up to five (5) minutes for an interview.

C. All team members must be prepared to answer interview questions and discuss illustrations included in the story.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

A. The portfolio

ON-SITE SEMIFINAL ROUND

A. The presentation

B. The interview

C. The physical storybook

Coding

Overview

Participants will take a test related to coding concepts (e.g., language syntax, data structures, control flow, object oriented programming, etc.) in order to qualify for the semifinals. Semifinalist teams will be asked to 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. Specific elements to be used, such as the programming language, operating system, or application programming interface (API), will be released on-site. Every effort will be made to support a wide variety of programming languages, and the specific languages, which will be posted on the TSA website under Themes & Problems. Completed solutions are objectively measured to determine the best and most effective solution for the stated problem.

Eligibility

A. An unlimited number of 2-person teams per chapter may register.
B. The 10 teams with the highest average test scores will advance to the semifinal round.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
The one (1)-hour test is administered to all members of the team at the same time. Each member takes the test individually. The testing window is open from 3/3/2025-3/7/2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025.

ON-SITE SEMIFINAL ROUND
Up to two (2) hours is allowed for the design and construction of the solution.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants take the test individually through the JudgePro system any time between Monday, March 3rd at 7:00 am and Friday, March 7th at 6:00 pm.

C. Participants follow the specific regulations and adhere to the directions provided by their proctor.
D. Both team members must test at the same time but will take the exam individually.
E. The 10 teams with the highest average test scores will advance to the semifinal round.
F. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants bring their own computer systems to the event area at the time and place stated in the conference program.
C. Participants are given a problem, evaluation criteria, materials, and allotted two (2) hours for the design and development of the solution.
D. Each solution is tested and presented to the judges as soon as possible after the coding phase is completed. All of a team's solutions are tested at the same time; a team may not return to working once they have presented their solutions to a judge.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. The test will be administered online by a school-affiliated adult.
B. The average of the scores of all two (2) team members determines team ranking.

ON-SITE SEMIFINAL ROUND
A. The specific languages permitted in the on-site competition are posted each year on the National TSA website under Themes & Problems.
B. All work must be completed in the event area during the time specified for the event.
C. Each team must bring:
   1. one (1) laptop or other device (ex: Microsoft Surface Pro), capable of running solely on battery power for up to two (2) consecutive hours
   2. Pencils, paper, and an external computer mouse are recommended but not required for each team.
   3. Portable power bank (if desired).
D. External keyboard and monitors are not permitted.
E. Printed reference materials are not allowed.

F. Participants do NOT have access to the Internet during the event. Participants must have an IDE downloaded to their device that does not require internet access.
G. Participants do NOT have access to electrical power/ outlets during the event.
H. Participants must have all software development tools needed for the competition downloaded and accessible on their laptop or other device.
I. Participants may only use the permissible programming language's standard library during the on-site competition. No third-party libraries may be used, only standard libraries distributed with the programming language may be used.
J. Participants may NOT use any generative artificial intelligence (AI) tools (e.g. ChatGPT, Google Gemini, GitHub Copilot, etc.) for the coding challenges.
K. Participants are presented with a series of coding problems that must be completed on-site at the conference.
L. All solutions must be tested, demonstrated, and presented by participants in front of the judges exclusively through electronic submission and evaluation.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
The score of both team members will be averaged to determine ranking.

ON-SITE/SEMIFINALS
A. The successful completion of the problems and the time in which it takes individuals or teams to complete all the challenges.
B. In the event of two or more teams receiving the same amount of points, the team who scored the points fastest will have the higher placement.

Refer to the official rating form for more information.

Computer-Aided Design (CAD), Architecture

Overview

Individuals have the opportunity to 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 in response to a design brief given at the time of competition.

Eligibility

A. Seven (7) individuals per chapter may register.
B. Nineteen (19) individuals will advance to the semifinal round based on their CAD scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
Three (3) hours are allowed for participants to develop drawing(s) and upload them to JudgePro. This block of time must be used between March 3rd at 12:01 am and March 7th at 11:59pm. It must be completed in one solid block and cannot be split up. Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
Up to 10 minutes total for setup, presentation, and questions:
A. Time begins when students arrive at the judging table.
B. Students will have 1 minute to open the PDF of their entry from their own device and should begin the presentation when setup is complete. Students may bring a printed copy of their entry instead of using a laptop/Chromebook/etc. as long as the printout is high-quality and readable.
C. Presentation should be no longer than 3 minutes.
D. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants find a three (3)- hour window of supervised work time at school. The work time must be proctored by an adult that is affiliated with the school.

C. Participants are given a design problem via JudgePro to solve in a three (3)-hour work session.
D. Participants work independently, without assistance from judges, teachers, fellow participants, or online resources.
E. Participants are advised to save their work on their hard drives every fifteen (15) minutes.
F. At the end of the session, participants save their work on their hard drives as a single PDF that includes the following views:
   a. full page floor plan
   b. full page plot plan (property lines and offsets must be included, other features may be included but are not required)
   c. four exterior elevation plans of your design, 2 per page
G. The PDF must be uploaded to JudgePro within three hours of opening the scenario; submissions automatically lock after three hours and no extensions can be granted.
H. Judges will evaluate the PDF submissions and select nineteen (19) individuals to advance to the semifinal round.

ON-SITE SEMIFINAL ROUND
The individual reports at the assigned time and place to participate in the presentation/Q&A.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants use their personal or their school's computer systems including:
   1. computer hardware
   2. software needed for the challenge, already downloaded
   3. printed/offline reference materials
B. Participants are required to provide their own pencils and sketching paper.
C. Participants are not permitted to share solutions to problems, reference materials, hardware, or software.
D. Participants identify their work using only their student identification number.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND   25
The design solution (evaluated via PDF according to the criteria
on the official rating form)

ON-SITE SEMIFINAL ROUND
The interview

Refer to the official rating form for more information.

Computer-Aided Design (CAD), Engineering

Overview

Individuals use complex computer graphic skills, tools, and processes to design and develop a 3-dimensional representation of an object that addresses the on-site design challenge.

Eligibility

A. Seven (7) individuals per chapter may register.
B. Nineteen (19) individuals will advance to the semifinal round based on their CAD scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
Three (3) hours are allowed for participants to develop drawing(s) and upload them to JudgePro. This block of time must be used between March 3rd at 12:01 am and March 7th at 11:59pm. It must be completed in one solid block and cannot be split up. Semifinalists will be announced by email and on the ARTSA website by March 18, 2025.

ON-SITE SEMIFINAL ROUND
Up to 10 minutes total for setup, presentation, and questions:
A. Time begins when students arrive at the judging table.
B. Students will have 1 minute to open the PDF of their entry from their own device and should begin the presentation when setup is complete. Students may bring a printed copy of their entry instead of using a laptop/Chromebook/etc. as long as the printout is high-quality and readable.
C. Presentation should be no longer than 3 minutes.
D. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants find a three (3)- hour window of supervised work time at school. The work time must be proctored by an adult that is affiliated with the school.
C. Participants are given a design problem via JudgePro to solve in a three (3)-hour work session.

D. Participants work independently, without assistance from judges, teachers, fellow participants, or online resources.
E. Participants are advised to save their work on their hard drives every fifteen (15) minutes.
F. At the end of the session, participants save their work on their hard drives as a single multi-page PDF that includes the following views (one view per page):
   1. Technical CAD drawings (including dimensions)
   2. Top view
   3. Side view
   4. Front view
   5. Home view
   6. Two other images of their choice (can be used to show off intricate or important features)
G. The PDF must be uploaded to JudgePro within three hours of opening the scenario; submissions automatically lock after three hours and no extensions can be granted.
H. Judges will evaluate the PDF submissions and select nineteen (19) individuals to advance to the semifinal round.

ON-SITE SEMIFINAL ROUND
The individual reports at the assigned time and place to participate in the presentation/Q&A.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants use their school's computer systems including:
   1. computer hardware
   2. software needed for the challenge, already downloaded
   3. printed/offline reference materials
B. Participants are required to provide their own pencils and sketch paper.
C. Participants are not permitted to share solutions to problems, reference materials, hardware, or software.
D. Participants identify their work using only their student identification number.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
The design solution (evaluated via PDF according to the criteria on the official rating form)

Refer to the official rating form for more information.

Data Science and Analytics

Overview

Entrants collect, analyze, and visually represent data. They then draw conclusions or make predictions based on the data set. Participants document their research and summarize their findings in a digital scientific poster. Semifinalists participate in a two (2) hour semifinal challenge visually representing a data set provided as an on-site challenge. Participants access the annual theme on the TSA website under Themes & Problems.

Eligibility

A. Three (3) teams of 1-2 students per chapter may register.
B. Five (5) teams will advance to the semifinal round based on their documentation portfolio, the digital scientific poster, and the video of the poster presentation scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

A. All components of the team's documentation portfolio entry, a PDF copy of their digital scientific poster, and a video of their poster presentation must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.
B. The video of the presentation must be more than two (2) minutes and less than six (6) minutes in length.
C. The timing starts with the first sound and continues until the last sound ends.
D. Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
Semifinalists participate in a two (2) hour on-site challenge submitted online or via ARTSA-provided USB drive.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Participants access the annual theme on the TSA website under Themes & Problems.
C. Participants will identify a topic as it relates to the annual theme and collect or compile data from various sources. The data source must include at least five hundred rows of data.

D. Participants create their documentation, digital scientific poster, and record their presentation according to the regulations.
E. All components of the team's documentation portfolio entry, a PDF copy of their digital scientific poster, and a video of their poster presentation must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND

A. Participants have two (2) hours to collaborate on a visual representation of the data set provided on-site, which must be completed on-site within the specified time frame.
B. Semifinalist teams submit the following as a multi-page PDF on the TSA-provided USB drive.
   1. A visual representation
   2. A brief synopsis of their entry
C. Judges evaluate the entries with neither students nor advisors present.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

A. Participants must understand the fundamental concepts and principles of the contemporary issue researched. Research about the issue shall focus on:
   1. Analysis of the collected data.
   2. Representation of that data in various forms.
   3. Synthesis of the collected data in terms of factors influencing the issue, societal impacts, and ethical considerations.
B. The documentation portfolio must be saved as a multi-page PDF document with the pages presented in the following order:
   1. Title page with the event title, the conference city and state, the year, and the team ID number; one (1) page
   2. Table of contents; pages as needed
   3. Introduction and Data Overview; one (1) page
   4. Data Dictionary; provide a table with the following fields to describe only the fields within the dataset that were used for the purpose of your analysis: field name, data type (e.g. string, integer, boolean, etc.), description, and field example; maximum of two (2) pages

5. Purpose- an explanation of the importance of the issue including problems and possible solutions (if applicable); one (1) page
6. Methods – the methods used to obtain your data; one (1) page
7. Results; pages as needed:
   i. analysis of the data collected
   ii. support materials such as graphs and any pertinent data collected
8. Conclusions – synthesis of the data collected; maximum of two (2) pages
9. Next Steps – next steps to further analyze the data, collect more data, or minimize the impact of the issue; one (1) page
10. Digital Scientific Poster:
    i. Participants must create the digital scientific poster. An editable, downloadable template is available on the National TSA website under Themes & Problems. Use of the provided template is optional; one (1) page.
    ii. Participants shall incorporate visuals to the digital scientific poster.
11. Bibliography/references - A list of references and credible resources in a professional citation style of the competitors choosing. Failure to use a professional citation style will result in a rules violation of 20% (twenty percent). Some examples of professional citation styles include MLA, APA, Chicago, and IEEE; a minimum of three (3) different types of resources must be used; work must be original or cited; pages as needed
12. Appendix - A collection of the raw analysis, to include Excel workbooks, code files, etc.; pages as needed
13. Citation of all ideas, fonts, and images from sources other than the designer, and/or that are copyrighted (most fonts and images found on the web are copyrighted material unless purchased or offered as free-domain). Clip art must be documented.
14. Student Copyright Checklist (see Forms Appendix); one (1) page
15. Consent and Release Forms – Recognizable individuals pictured in the images (minors require parental consent) must give their written consent before the images can be used in this event (see Photo/Film/Video Consent and Release Form in Forms Appendix); pages as needed
C. Digital Scientific Poster:
   1. Participants must create the digital scientific poster. An editable, downloadable template is available on the National TSA website under Themes & Problems. Use of the provided template is optional; one (1) page.
   2. Participants shall incorporate visuals to the digital scientific poster.
D. The Video:
   1. The video must contain the faces and voices of the team that created the documentation portfolio as well as a view of the portion of the digital portion being referenced at each point in the video.
   2. Participants may choose any video hosting site (such as an UNLISTED YouTube URL), or a shareable link in cloud storage, as long as the video is located online and accessible for evaluation.
   3. If a URL is provided, the URL must point directly to the participant's entry. Entries that require a software download or a request that access be granted will not be judged.
   4. If participants opt to not use a video hosting site, the video entry must be submitted in a common video format suitable for viewing with VLC Player, utilizing a Microsoft Windows operating system.
   5. Entries received, or changes made to submitted entries after the deadline will not be judged.

ON-SITE SEMIFINAL ROUND
A. Participants report at the time and place identified in the conference program for the on-site problem.
B. Participants must have the following computer hardware:
   1. One (1) laptop
   2. Extra charged laptop battery (if desired)
   3. One (1) computer mouse, optional
   4. Converter to allow for a USB input into the laptop, if needed
   5. Portable power bank (if desired)
C. Semifinalists will receive the on-site problem (data set) on a TSA-provided USB drive
D. Semifinalists have two (2) hours to create their visual representation and write a brief synopsis of no more than two hundred and fifty (250) words, including snapshots of the visual representation.
E. All work must be completed at the conference during the time specified for the event.
F. Any entries that are started prior to the conference will result in disqualification.
G. No electricity or access to the Internet will be provided.
H. Participants save their visualization and supporting documentation as a multi-page PDF document and submit the entry on the TSA-provided USB drive by the designated deadline.

I. Participants may NOT use any generative artificial intelligence (AI) tools (e.g. ChatGPT, Google Gemini, GitHub Copilot, etc.).

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

A. The documentation portfolio
B. The digital scientific poster
C. The video of the presentation

ON-SITE SEMIFINAL ROUND

The visual representation of the provided data set and synopsis

Refer to the official rating form for more information.

Debating Technological Issues

Overview

Team members collaborate to prepare for a debate against a team from another chapter. On-site, the teams are assigned either the Pro or Con side of a selected subtopic. The theme and subtopics for this event will be posted on the National TSA website under Themes & Problems.

Eligibility

A. Two (2) teams of 2 students per chapter may register.
B. Only teams that upload an acceptable summary of references will be scheduled for a debate time. The summary of references must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025. See Procedure→ Pre-Conference → point D for more details.
C. Eligible teams will be announced by email and on the ARTSA website by March 18, 2025.

Time Limits

Refer to On-Site Procedures for time limits.

Procedure

PRE-CONFERENCE
A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Participants review the annual theme and subtopics posted on the National TSA website under Themes & Problems.
C. Participants research all subtopics and should be prepared to debate any of the subtopics from both Pro and Con views.
D. Prepare a summary of references, upload it to the JudgePro system by February 18, 2025, then print and have available at the conference a minimum of four (4) copies on an 8 ½" x 11" sheet of paper; both sides of the paper may be used.
   1. The event title, the event's yearly topic, and a line for the team/chapter ID number must be printed at the top of the front side of the paper.
   2. The reference summary must be typewritten (handwritten is not acceptable).
   3. Font size must not be less than 10 points.
   4. MLA format must be used to cite sources. Listing URLs does not constitute an appropriate citation.

5. References for all three (3) subtopics are to be submitted on one (1) sheet of paper, not a separate sheet for each subtopic.

ON-SITE
A. Participants report to the preparation room fifteen minutes before the scheduled debate time.
B. Participants will draw the subtopic and Pro/Con at the time of their debate. Each debate may have a different subtopic.
C. Two (2) teams will debate using the Pro or Con side of a selected subtopic.
D. Judges independently judge each debate.

Regulations and Requirements

ON-SITE
Debate Procedures
A. Participants report to the preparation room fifteen (15) minutes before the scheduled debate time.
B. While in the preparation room, the subtopic and the Pro/Con schedule cards will be drawn and the teams will have five (5) minutes to prepare.
C. At the end of the five (5) minutes of preparation time for the teams, they are escorted to the debate room.
D. Order of debate format:
   1. Pro Speaker (maximum of 2 minutes)
   2. Con Speaker (maximum of 2 minutes)
   3. Break (1 minute)
   4. Pro Cross Examination of Con (maximum of 2 minutes)
   5. Con Cross Examination of Pro (maximum of 2 minutes)
   6. Break (1 minute)
   7. Pro Rebuttal (maximum of 2 minutes)
   8. Con Rebuttal (maximum of 2 minutes)
E. The escort introduces the Pro team by identification number and the team is instructed to sit to the left side of the podium.
   1. The first speaker should sit next to the podium.
   2. At this time, participants present their schedule card and a copy of the team's summary of references to the judges.
F. The Con team is introduced by identification number and instructed to sit to the right side of the podium.
   1. The first speaker should sit next to the podium.
   2. At this time, participants present their schedule card and a copy of the team's summary of references to the judges.

G. When the judges and teams are ready, the Pro speaker is instructed to move to the podium and begin.
   1. Timing starts when the speaker begins.
   2. After one (1) minute and forty-five (45) seconds, the timer holds up a 4" x 6" card that reads "15 seconds."
   3. Penalty points are deducted if a speaker exceeds the allotted time.
H. When the Pro speaker is finished and has been seated, the Con speaker moves to the podium and begins, according to the same procedure noted above.
I. When the Con speaker is finished and has been seated, the timer announces a one (1)-minute conference period in which both teams may prepare their questions for cross examination.
J. During cross-examination, the team answering the questions remains seated.
K. At the conclusion of the one (1)-minute conference period, the timer announces that the conference period is over and the Pro questioning speaker approaches the podium.
   1. Timing starts when the speaker begins.
   2. After one (1) minute and forty-five (45) seconds, the timer holds up a 4" x 6" card that reads "15 seconds."
   3. If the con team is in the process of answering a question, the team may finish its answer, provided it does not exceed an additional 15 seconds beyond the allotted two (2) minutes. At this time, the team is cut off by the timer.
L. When the Pro questioning speaker is seated, the Con questioning speaker approaches the podium.
   1. Timing starts when the speaker begins.
   2. After one (1) minute and forty-five (45) seconds, the timer holds up a 4" x 6" card that reads "15 seconds."
   3. If the pro team is in the process of answering a question, the team may finish its answer, provided it does not exceed an additional 15 seconds beyond the allotted two (2) minutes. At this time, the team is cut off by the timer.
M. At the conclusion of the cross examination, the teams are given a one (1) minute conference break to prepare their rebuttals.
N. The timer announces the end of the conference break and the Pro rebuttal speaker approaches the podium.
   1. Timing starts when the speaker begins.
   2. After one (1) minute and forty-five (45) seconds the timer holds up a 4" x 6" card that reads "15 seconds."
   3. Penalty points are deducted if a speaker exceeds the allotted time.
O. When the Pro rebuttal speaker is finished and has been seated, the Con rebuttal speaker moves to the podium and begins, according to the same procedure noted above in Procedure N.
P. When the Con rebuttal speaker is finished and has been seated, the timer announces to both teams that they may leave the debate room.

Debate Details and Notes

A. Room set-up:

B. Electronic devices of any sort (cell phones, smart watches, laptops, etc are not allowed in the debate room.
C. Teams are penalized five (5) points for speaking over the allotted time.
D. Pre-written notes may be used. Notes must be written on 3" x 5" notecards.
E. Handwritten notes may be taken during the debate.
F. A three (3)-ring binder of reference materials, as noted on the summary of references provided to the judges, may be used during the debate.
G. No audio-visual materials of any type may be used.
H. Participants are not allowed to hear the debates of other teams, aside from the team they are debating.
I. Participants may use their own stopwatches to time themselves. These may only be traditional stopwatches; cell phone stop watches are NOT ALLOWED.
J. No observers or assistants are allowed in the preparation room.
K. Participants must both present at different times during the debate. Only one (1) speaker per side is allowed at the podium at any time.
L. Cross examination (questioning) of the opposing team is to remain civil. Any aggressive behavior, belittling of opponents, or shouting results in immediate disqualification of the offending team.
M. If there is an odd number of teams entered in the event, one team debates twice, based on a random drawing for teams that wish to go twice. (Note that the coordinator may not force a team to go twice if it does not wish to do so.)
N. If a team debates twice, it may or may not have the same subtopic or Pro/Con side of the debate.
   1. The team also is required to provide an additional copy of the Resource List (Pre-conference D) to the judges.
   2. The highest score of the twice-debating team is used as its score.

O. If observers are allowed in the debate room, the following
    shall be observed:
    1. No audio or visual recording devices are allowed.
    2. No talking or gesturing is permitted.
    3. Observers are not allowed to enter or leave during a
        debate.
    4. There is no applause until the debate is completed.

Please refer to the conference page of the TSA website or the
Spectator Events page of the conference program for additional
information.

Evaluation

The debate

Refer to the official rating form for more information.

Digital Video Production

Overview

Participants use digital video skills, tools, and processes to communicate, entertain, inform, analyze, or illustrate the annual theme on the National TSA website under Themes & Problems.

Eligibility

A. Three (3) teams of 1-6 students per chapter may register.
B. Nine (9) teams will advance to the semifinal round based on their documentation portfolio and their video.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.
A. The digital video must not exceed three (3) minutes in length.
B. A deduction of five (5) points total will be incurred for entries over the three (3) minute maximum length.
C. The timing starts with the first sound and continues until the last sound ends.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
Up to 10 minutes total for setup, presentation, and questions:
A. Time begins when students arrive at the judging table.
B. Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C. Judges will have already viewed the entry; students should not play the entire entry as part of their presentation.
D. Presentation should be no longer than 3 minutes.
E. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants access the annual theme on the TSA website under Themes & Problems.

C. Participants concentrate their efforts on the design of an original digital video, while observing the regulations and requirements.
D. Participants record their processes in a documentation portfolio.
E. Participants submit the entry by 11:59 pm on February 18, 2025.
F. Entries are evaluated by the judges with neither students nor advisors present based on the following criteria:
   1. Judges score the Digital Video criteria
   2. Judges score the Documentation Portfolio criteria

ON-SITE SEMIFINAL ROUND
Teams report at the assigned time and place for the interview.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
G. The Video:
   1. Participants may choose any video hosting site (such as an UNLISTED YouTube URL), or a shareable link in cloud storage, as long as the video is located online and accessible for evaluation.
   2. If a URL is provided, the URL must point directly to the participant's entry. Entries that require a software download or a request that access be granted will not be judged.
   3. If participants opt to not use a video hosting site, the video entry must be submitted in a common video format suitable for viewing with VLC Player, utilizing a Microsoft Windows operating system.
   4. Entries received, or changes made to submitted entries after the deadline will not be judged.
   5. All video footage, graphics, special effects, and audio clips must be originally created/filmed by the participants.
   6. All ideas, text, images, and sound from other sources must be properly cited.
   7. If copyrighted material is used, proper written permission must be included.
B. The documentation portfolio must be submitted with the video URL address in the form of a multi-page PDF attachment in the following order:
   1. Title page with the event title, the title of the video, the conference city and state, and the year; one (1) page
   2. Table of contents; pages as needed

3. Purpose and description of the video; one (1) page
4. Team's self-evaluation of the video, using criteria from the official rating form; one (1) page
5. Hand sketched storyboard (screenshots are not acceptable); pages as needed
6. Digital video script; pages as needed
7. List of hardware and software used in the development of the video; one (1) page
8. List of references that includes sources for materials (copyrighted and non-copyrighted); pages as needed
9. Permission letters for copyrighted material (including clips and images); pages as needed
10. Student Copyright Checklist (see Forms Appendix)
11. Signed Photo/Film/Video Consent and Release forms for all video participants (see Forms Appendix)
12. Work Log (see Forms Appendix); pages as needed.

C. The video and documentation portfolio must adhere to the general rules (section F. Prohibited Materials, References, and Images.)

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
A. The digital video
B. The documentation portfolio

ON-SITE SEMIFINAL ROUND
A. The interview

Refer to the official rating form for more information.

Dragster Design

Overview

Individuals design, model, and build a CO_2- powered dragster according to stated specifications using only specified materials. Special annual design requirements will be posted for this event on the National TSA website under Themes & Problems.

Eligibility

A. An unlimited number of individuals per chapter may register.
B. Only individuals that upload an acceptable drawing and parts list will be scheduled to race. The drawing must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.
C. Eligible individuals will be announced by email and on the ARTSA website by March 18, 2025.

Time Limits

A. The dragster and physical drawing are submitted at the time and place stated in the conference program.
B. Judges check for specification compliance, then all raceable cars will make one (1) qualifying time run.
C. The top sixteen (16) legal cars will qualify for the semifinal bracket and will participate in a five (5)-minute interview.
D. Drawings and cars must be picked up at the specified time and place stated in the conference program.

Procedure

PRE-CONFERENCE CHECK

A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants prepare their documentation and Dragster model according to the regulations.

ON-SITE PRELIMINARY ROUND

A. Participants report to the time and place stated in the conference program to check in:
   1. the dragster
   2. one (1) full-size metric drawing of the complete vehicle, top and side views
   3. one (1) page, letter-sized printed document listing all parts and materials
B. Entries are reviewed by judges to determine safety on the track.

C. Safe dragsters race for qualifying time on the same lane of the raceway.
D. Entries are evaluated by the judges with neither students nor advisors present based on the following criteria:
   1. Judges determine the top sixteen (16) qualifying entries based on the time trials and event criteria to determine the semifinalists.
   2. Judges score the dragster construction, interview, and race points to determine the top ten (10) finalists.
E. Dragsters that do not meet event regulations are disqualified and lower qualifying cars are moved up until sixteen (16) dragsters that meet specifications are determined.
F. Judges score the dragster body production quality, paint finish, assembly, the technical drawing scale and dimensioning as well as drawing completion and precision quality.

ON-SITE SEMIFINAL ROUND

A. The top sixteen (16) dragster builders report to the track at the scheduled time for a five (5)-minute interview.
B. The top sixteen (16) entries race in a double- elimination format to earn points for the race portion of the event.
C. Drawing, design, and body finish points are combined with race points to determine the final standings.
D. Following the race, participants pick up their entries from the display area at the time and place stated in the conference program.

Regulations and Requirements

PRE-CONFERENCE CHECK

A. Participants must check the "Special Design Challenge Requirements" section for the current year's design challenge specifications.
B. Drawings: All drawings must be brought to the conference AND uploaded to the JudgePro system as one multi-page PDF.
   1. The two (2)-view (top and side) drawing with metric dimensions is made on one piece of drawing paper no larger than 11" x 17" in size.
   2. Drawings are developed using standard engineering practices and procedures.
   3. The drawing may be produced using traditional drafting methods or CAD.

4. The one (1) letter-sized page with the Materials List must be printed on or attached to the back of the technical drawing.
5. The title block includes only the participant's identification number, which is assigned at registration time and is placed on the entry and drawing during check-in.

ON-SITE PRELIMINARY ROUND
Dragsters that do not meet the below specifications/ tolerances are disqualified from the race.

ON-SITE SEMIFINAL ROUND
The Race:
A. The official distance between the start line and the finish line on the race track is twenty (20) meters.
B. No repair or maintenance is allowed after the entries have been registered.
C. Any entry damaged during the race is evaluated by the event coordinator to determine whether or not the vehicle is allowed to race again.
D. In the event that the vehicle is damaged by conference personnel, the event coordinator rules as to whether or not the vehicle may be repaired by the student entering the vehicle. This is the only reason a student is allowed to touch their vehicle after registration.
E. Cars that lose wheels, bearings, screw-eyes will not continue to race.
F. Damaged wheels may not be replaced.
G. All CO_2 cartridges for the race are provided by ARTSA.

Evaluation

PRE-CONFERENCE CHECK
The upload of the drawing

ON-SITE PRELIMINARY ROUND
Specification check and time trials

ON-SITE SEMIFINAL ROUND
Dragster construction, interview, and race points

Refer to the official rating form for more information.

See specifications on the following pages.

Dragster body

	MINIMUM	MAXIMUM
1. One (1) piece of any species of wood or from plastics, including urethane modeling foam. May be produced using traditional hand tools, power tool, CNC Milling and 3D printing, following applicable safety rules. a. Two (2) or more like or unlike pieces of material glued together are not considered one (1)-piece b. Any type of lamination will result in disqualification. c. No add-ons, such as body strengtheners, fenders, plastic canopy, exhausts, or air foils may be attached to or enclosed within the vehicle. Hydro dipping technique is permitted. d. Fiberglass, vinyl wrap, and shrink wrap are considered body strengtheners and cannot be used on the car body for any reason. e. Decals may be used for decoration only; they may not be used to gain an aerodynamic advantage, i.e., decals cannot cover the exterior axle holes or be used to cover open areas of the body.		
2. Body length	(2025) 280mm (2026) 250mm	(2025) 290mm (2026) 260mm
3. Body height with wheels		75mm
4. Body mass (completed car without CO_2)	(2025) 35g (2026) 50g	N/A
5. Body width at the point the axles pass through the body, front and back	35mm	42mm
6. Vehicle total width (including wheels).		90mm

Axles/axle holes/wheelbase

	MINIMUM	MAXIMUM
1. Dragsters must have two (2) axles per car, no more.		
2. Bottom of axle hole or bearing above bottom of car body. (NOTE: This will be only be measured at the side surfaces of the car body at the axle hole.)	5mm	10mm
3. Axle hole from front and rear of car	15mm	100mm
4. Minimum wheelbase (axle distance apart at farthest points)	105mm	Not Specified
5. Bearings, bushings and lubricants may be used.		
6. Glue may be used to secure bearings to body.		

Spacer washers/clips

	MINIMUM	MAXIMUM
1. Spacer washers		10
2. Axle clips		8
3. Silicone or any other type of glue/adhesive may not be used in place of wheel clips to hold wheels or axles in place.		

Power plant (CO₂ cartridge hole)

	MINIMUM	MAXIMUM
1. The power plant hole must be at the farthest point at the rear of the car and must be drilled parallel to the racing surface to assure proper puncture of the CO₂ cartridge. A minimum of 5mm thickness around the entire power plant hole must be maintained on the dragster for safety. The inside of the power plant hole must not be intentionally painted.		
2. Hole depth	45mm	55mm
3. Safety zone thickness	5mm	
4. Chamber diameter	19mm	20mm
5. Lowest point of chamber diameter to race surface (with wheels)	26mm	40mm

Screw eyes

	MINIMUM	MAXIMUM
1. Dragsters must have two (2) screw eyes (no more) per car that meet tolerances. Screw eyes must not make contact with the racing surface. The track string must pass through both screw eyelets, which are located on the center line of the bottom of the car. Glue may be used to reinforce the screw eyes. It is the responsibility of the car designer/ engineer to see that the screw eye holes are tightly closed to prevent the track string from slipping out. As with all adjustments, this must be done prior to event check-in.		
2. Inside diameter	3mm	5mm
3. Minimum distance apart (at farthest points)	150mm	N/A

Wheels

	MINIMUM	MAXIMUM
1. A dragster must have four (4) wheels, no more.		
a. Two (2) wheels must meet the requirements in #2 and #3 below.		
b. The other two (2) wheels must meet the requirements in #4 and #5 below.		
c. All four (4) wheels must touch the racing surface at the same time.		
d. All wheels must roll.		
e. Wheels must be made entirely from plastic.		
f. Dimensions must be consistent for the full circumference of each wheel.		
g. Measurement represents the FULL surface contact point where wheel makes contact with the track.		
2. Front diameter	30mm	40mm
3. Front width (at surface contact point)	1.5mm	5mm
4. Rear diameter	35mm	40mm
5. Rear width (at full, unbroken, surface contact point)	12mm	18mm

Drone Challenge (UAV) (National Qualifier)

Overview

Teams design, build, assemble, document, and test fly an open-source Unmanned Aerial Vehicle according to stated specifications and to meet the challenge of the yearly theme/problem. The annual theme will be posted on the TSA website under Themes & Problems.

Eligibility

A. Two (2) teams of 2-6 students per chapter may register.
B. Six (6) teams will advance to the semifinal round based on their documentation portfolio.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Ten (10) minutes prior to assigned times teams can set up their assigned pit area.
B. Thirty (30) minutes to test and correct any problems. During this time judges will also perform a safety check.
C. Ten (10) minutes to complete the challenge.
D. Ten (10) minutes for the semifinalist presentation/Q&A.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Participants access the annual obstacle course on the TSA website under Themes & Problems.
C. Participants prepare their documentation and design, build, and test their UAV drone

ON-SITE SEMIFINAL ROUND
A. Participants will submit their printed portfolios and UAVs at the time and place stated in the conference program.
B. Students will arrive at the assigned place and time to:

1. Set up their pit areas
2. Set up their drone

C. Entries are reviewed by judges to determine safety.
D. Safe drones will be given an opportunity to test.
E. Portfolio, challenge, and interviews scores are combined with race points to determine the final standings.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants must check for the current year's design challenge specifications on the National TSA website under Themes & Problems.
B. Documentation materials (comprising a "portfolio") are required and must be submitted both digitally to JudgePro as a multi- page PDF document and as a hard-copy on-site with pages in this order:
   1. Title page with the name of the event, the event title, the conference city and state, the year; and the team identification number; one (1) page
   2. Table of Contents; one (1) page
   3. Photo log of major steps in the production and assembly of the drone. From motors to frame mount to final flight ready UAV Drone. Showing all steps of mounting and wiring electronic speed controllers, video transmitters, flight controllers, cameras, antennas, etc.. Include captions describing the steps; pages as needed.
   4. Wiring schematic drawings of their UAV Drone components (modules) in their portfolio binder with associated wiring of component to components. Identified voltages would be an advantage; pages as needed
   5. Explanation of Programming software for flight functioning and stabilization. (i.e., Q-Ground Control, Beta flight, etc.). Plus, any additional software and hardware used for mission function (robotic software, microcontroller software for Arduinos, raspberry pi, etc.); pages as needed
   6. Engineered drawings of assembled UAV and all manufactured and modified parts. Drawings must be shown on a maximum sheet cut size B(11"x17"), with

the appropriate scale noted on the drawing; maximum of four (4) pages

7. Document all parts and components of the open source UAV Drone as a bill of materials spreadsheet; two (2) pages

8. Research of rules and regulations for drone flight at the state conference location. Local, regional, and federal regulations must be included; two (2) pages.

9. Resources; pages as needed

10. Work Log; pages as needed

11. Student Copyright checklist; one (1) page

ON-SITE SEMIFINAL ROUND

UAV Drone Challenge Pit and Safety Procedures

A. Pit Area Assignment. The Event Coordinator will provide a designated area for UAV Drone Teams to work on and prepare their UAV Drone for flight.

1. Teams are required to bring two welding blankets (4' x 6' minimum) to cover the table and floor in their pit area.

2. Teams bring to pit area, for inspection, primary UAV Drone and a backup UAV Drone (optional), radio controller(s), chargers, batteries, tools box, power strip, 3-prong electrical extension cord, replacement parts, spare parts and tools

3. Computer/laptop must operate solely on battery power. The team can bring a power bank (if desired).

4. All equipment, portfolio, tools, chargers, and computers are to be arranged for inspection and safety check. The use of tools with combustible fuel sources is prohibited.

5. In the pit area, battery chargers and batteries, as they are being charged, must be placed on the fireproof welding blanket in the pit's charging area.

B. When UAV Drone is out of the competition tent area, all propellers must be removed. NO EXCEPTIONS.

C. When a team member enters the competition tent field, only at the direction of the event coordinator may the team members attach the battery cable and turn on their UAV Drone and become ready to fly. When A UAV Drone is outside of the competition tent area, all batteries must be unplugged from the UAV Drone stack, which should consist of the flight controller receiver and the Electronic Speed Controller (ESE). NO EXCEPTIONS.

D. The judge will inspect the UAV Drone mounted propellers to ensure safe operation.

E. When the competition is taking place and when a practice session is under way with a UAV Drone in the competition field area flying, all UAV Drone in the pit area or outside the pit area must be POWERED OFF. This is an automatic ten (10) Point deduction if this occurs.

F. All batteries will be inspected prior to flight practice and the competition.

G. All UAV Drones must fly ONLY within the Competition field.

UAV Drone Specifications

A. Competing Unmanned Aerial Vehicles UAV Drone MUST HAVE four motors and four propeller blades.

B. UAV Drone must be assembled from open-sourced parts. The UAV Drone can be purchased as a kit that can be built, reconfigured, changed, and modified with different components.

C. The UAV Drone frame structure can be made from plastic, wood, 3D printed materials (carbon fiber, PLA plastic, ABS plastic, resin, metal combined plastic or resin). Parts can be purchased commercially and modified. NO COMMERCIALLY AVAILABLE DRONE WILL BE USED IN THE COMPETITON (i.e., Mavic Pro or Mavic Mini) OR PRACTICE SESSIONS.

D. Battery packs must only be commercially available lithium-ion batteries that are purchased from open-sourced 3rd parties (i.e., Amazon, hobby shops, etc.).

E. Drone Regulations

1. The UAV Drone propellers can be in size from 4" (101mm) to 8" (152.4mm) in overall length.

2. Sizes can be from 6" (152.4mm) to 14" (355.6mm) in outside motor propeller size diagonally.

3. The UAV Drone can optionally use propeller guards [but must fit inside a 18" x 18" (457.2mm x 457.2mm) go-no-go box for pre-flight inspections by the judges.]

4. Drone must incorporate the use of Magnets or Grippers to complete the theme for the year.

5. Drone propellers must be removable for inspection.

6. Landing gear should be adjustable or adaptable in size to cover a variety of mission requirements and payload sizes. Magnets or grippers are not acceptable landing gear.

7. A camera for the pilot is also required to be mounted to the drone.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

A. Portfolio

ON-SITE SEMIFINAL ROUND

A. Drone Testing

B. The interview

Refer to the official rating form for more information.

Drone Challenge (UAV) (Arkansas Only)

Overview

Teams race a pre-built Unmanned Aerial Vehicle to navigate the annual set of obstacles. The possible obstacles will be posted on the National TSA website under Themes & Problems.

Eligibility

One (1) team of 2-6 students per chapter may register.

Time Limits

ON-SITE

A.   Ten (10) minutes prior to assigned times teams can set up their assigned pit area.

B.   Thirty (30) minutes session to test and correct any problems. During this time judges will also perform a safety check.

C.   Ten (10) minutes to complete the challenge.

Procedure

PRE-CONFERENCE
Participants access the annual obstacle course on the National TSA website under Themes & Problems.

ON-SITE

A.   Students will arrive at the assigned place and time to set up their drone.

B.   Entries are reviewed by judges to determine safety.

C.   Safe drones will be given an opportunity to test.

Regulations and Requirements

Participants must check for the current year's design challenge specifications on the National TSA website under Themes & Problems.

UAV Drone Challenge Pit and Safety Procedures

A.   Pit Area Assignment. The Event Coordinator will provide a designated area for UAV Drone Teams to work on and prepare their UAV Drone for flight.

1.   Teams are required to bring a welding blanket (2' x3' minimum) to cover the surface of where they'll be charging batteries in their pit area.

2.   Teams bring to pit area, for inspection, primary UAV Drone and a backup UAV Drone (optional), radio controller(s), chargers, batteries, power strip, 3-prong electrical extension cord, replacement parts, spare parts and tools.

3.   All necessary computers and associated software for the competition.

4.   All equipment, tools, chargers, and computers are to be arranged for inspection and safety check. The use of tools with combustible fuel sources is prohibited.

5.   In the pit area, battery chargers and batteries, as they are being charged, must be placed on the fireproof welding blanket in the pit's charging area.

B.   When UAV Drone is out of the competition tent area, all propellers must be removed. NO EXCEPTIONS.

C.   When a team member enters the competition tent field, only at the direction of the event coordinator may the team members attach the battery cable and turn on their UAV Drone and become ready to fly. When A UAV Drone is outside of the competition tent area, all batteries must be unplugged from the UAV Drone stack, which should consist of the flight controller receiver and the Electronic Speed Controller (ESE). NO EXCEPTIONS.

D.   The judge will inspect the UAV Drone mounted propellers to ensure safe operation.

E.   When the competition is taking place and when a practice session is under way with a UAV Drone in the competition field area flying, all UAV Drone in the pit area or outside the pit area must be POWERED OFF. This is an automatic ten (10) Point deduction if this occurs.

F.   All batteries will be inspected prior to flight practice and the competition.

G.   All UAV Drones must fly ONLY within the Competition field.

UAV Drone Specifications

A.   Competing Unmanned Aerial Vehicles UAV Drone MUST HAVE four motors and four propeller blades.

B. Drone Regulations
1. The UAV Drone propellers can be in size from 4" (101mm) to 8" (152.4mm) in overall length.
2. Sizes can be from 6" (152.4mm) to 14" (355.6mm) in outside motor propeller size diagonally.
3. The UAV Drone can optionally use propeller guards [but must fit inside a 18" x 18" (457.2mm x 457.2mm) go-no-go box for pre-flight inspections by the judges.]
4. Drone must incorporate the use of Magnets or Grippers to complete the theme for the year.
5. Landing gear should be adjustable or adaptable in size to cover a variety of mission requirements and payload sizes. Magnets or Grippers are not acceptable landing gear.
6. A camera for the pilot is also required to be mounted to the drone.

Evaluation

Drone Testing

Refer to the official rating form for more information.

Engineering Design

Overview

In 2008, the National Academy of Engineering tasked an international group of leading technological thinkers to identify the Grand Challenges for Engineering (GCE) in the 21st century. Fourteen (14) game-changing goals for improving life on the planet were identified and grouped into the themes of sustainability, health, security, and joy of living. Applying leadership and 21st century skills in conjunction with the engineering design process, teams develop a solution to one of the grand challenges based on the annual theme posted on the National TSA website under Themes & Problems.

Eligibility

A. An unlimited number of teams of 3-6 students per chapter may register.
B. Four (4) teams will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
A. Ten (10) minutes are allowed for the presentation.
B. Five (5) minutes are allowed for the team to respond to questions from the judges.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants access the annual theme posted on the National TSA website under Themes & Problems.
C. Participants concentrate their efforts conducting research on engineering practices and brainstorming a solution.
D. Participants create and test a prototype/model of their solution.

E. Participants prepare their documentation and display according to the regulations.
F. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
A. No more than two (2) team members report to the event area at the time and place stated in the conference program to check in:
   1. The portfolio printed and secured in a clear front report cover
   2. A free-standing display
   3. A prototype/model of the solution
B. Participants report at the assigned time and place for the presentation/Q&A.
C. Team members present in front of their display and model/prototype, which may be used as a reference.
D. Judges evaluate the entries.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Students prepare an electronic portfolio that includes each step of the engineering design process when developing a solution to their selected grand engineering challenge based on the annual theme.
B. Documentation materials (comprising "a portfolio") are required and must be both uploaded to JudgePro AND printed and secured in a clear front report cover with the following single-sided, 8 ½" x 11" pages, in this order:
   1. Title page with the challenge listed, event title, the team identification number, the conference city and state, and the year; one (1) page
   2. Table of contents; pages as needed
   3. Identification and definition of problem; one (1) page
   4. Information gathering that explains the importance of developing a solution to the grand engineering challenge and how a solution would impact the lives of people. A concise historical perspective of the challenge must also be included; one (1) page
   5. The identification and explanation of three (3) possible solutions to the challenge must be included. For each possible solution presented, a concise narrative must be included that supports the plausibility of each solution based on a specific scientific, technical, and/or

engineering concept; one (1) page per solution, three (3) pages total

6. Of the three (3) possible solutions, select the most plausible solution and create a prototype/model. Provide an appropriate, specific, and descriptive, visual representation of the solution (ex. engineering drawings, schematic, flowchart, etc.); pages as needed.

7. A written summary of the iteration process in the design of the prototype and the results of each test; at a minimum, four (4) pages describing the below points are required:

   a. If a solution is not working or cannot be evaluated/tested, a narrative for a means of testing the chosen solution.

   b. Refinements of the prototype based on evaluation/testing conducted. If a solution cannot be evaluated/tested, write in narrative form a reflection of possible refinements that could be made to the chosen solution based on the testing means developed.

   c. A reflection of the effectiveness of the selected solution and the testing means developed (i.e. did or would the tests developed actually prove that the solution is plausible?).

   d. Describe any other issues found during the iteration process.

8. Communication of the solution – a written summary detailing how the solution meets the annual theme; one (1) page

9. Work Log; pages as needed

10. References and resources page in a professional citation style of the competitors choosing. Failure to use a professional citation style will result in a rules violation of 20% (twenty percent). Some examples of professional citation styles include MLA, APA, Chicago, and IEEE; pages as needed

C. The Display:

1. A free-standing display must be used and the dimensions of the display may not exceed 15" deep x 2.5' wide x 4' high.

2. A tangible prototype/model must be included with the display and must physically fit within the display board dimensions.

3. If the display and/or prototype/model requires power, they must be powered by dry-cell batteries or photo-voltaic cells.

   a. The power supply must physically fit within the display board dimensions.

b. All power must be switched off once the team has completed set-up.

c. If teams want judges to activate any electronic device in their model/display, complete instructions must be provided to judges on how to power up the model/display.

4. No harmful or illegal substances are permitted.

5. No viruses, live plants, or animals are permitted.

6. No dangerous processes, experiments, and/or physical models may be displayed/demonstrated.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

A. The documentation portfolio

ON-SITE SEMIFINAL ROUND

A. The display

B. The prototype/model

C. The presentation/interview

Refer to the official rating form for more information.

Extemporaneous Speech

Overview

Participants verbally communicate their knowledge of technology or TSA subjects by giving a three-to-five (3-5) minute speech fifteen (15) minutes after being randomly assigned a topic.

Eligibility

Three (3) individuals per chapter may register.

Time Limits

A. Each speech must be between three and five (3-5) minutes.
B. Participants are penalized one (1) point per ten (10) seconds for speaking over five (5) minutes or under three (3) minutes.
C. Time commences when the speaker begins talking and concludes at the end of the speech.

Procedure

A. Participants report at the assigned time and place for the presentation preparation.
B. Each participant draws three (3) cards, each containing one (1) topic, from a box and selects one (1) topic from the three (3) on which to speak. The cards with the unused topics are returned to the box.
C. Preparation:
   1. After having selected a topic, the first participant enters a preparation room separate from the speech delivery room and is given fifteen (15) minutes to prepare a speech.
   2. Seven (7) minutes after the first participant enters the preparation room, the second participant enters the preparation room, goes to a different section, and begins his/her speech preparation, again with fifteen (15) minutes to prepare a speech.
   3. Each participant, in turn, is allowed to enter the preparation room at seven (7)-minute intervals, thus enabling a consistent flow of participants to speak before the judges in a timely fashion. (This allows for one [1] minute to enter the room and announce the entry number, up to five [5] minutes for the presentation, and one [1] minute to exit the room.)

D. The event coordinator introduces each participant (using the participant identification number only) according to the order in which participants appear on the schedule.
E. The timekeeper visually notifies the speaker of the time remaining by using one (1) notecard. When the speaker has been speaking for four (4) minutes, a note card will be shown with "Time remaining 1 minute" indicating that the speaker has one (1) minute remaining.
F. After speaking, the participant returns the topic card to the judges so that it can be returned to the topic box.
G. Judges independently evaluate each speech.

Regulations and Requirements

A. Participants deliver a speech addressing the assigned topic while observing the regulations:
   1. No reference is to be made concerning the name of the participant or his/her school during the speech. Name tags provided by ARTSA do not violate this rule.
   2. Each speech must be the result of the participant's own effort.
   3. No reference materials or devices may be used or brought to the preparation room.
   4. Any notes for speaking must be written during the fifteen (15)-minute preparation period.
   5. Each participant is provided a maximum of three (3) 3" x 5" blank notecards.
   6. Although participants are permitted to use notes when speaking, it should be noted that deductions in scoring could be made for this practice if the use of notes detracts from the effectiveness of the speech.
   7. The participant will state the topic and then will begin the speech. The speech time will commence when the speech begins.
   8. Participants are penalized by each judge one (1) point per ten (10) seconds for speaking over five (5) minutes or under three (3) minutes.
B. A speaker's stand or podium will be available.

Evaluation

A. The speech
B. The degree to which the content addresses the selected topic
C. Adherence to the time limits
Refer to the official rating form for more information.

Fashion Design and Technology

Overview

Teams demonstrate an expertise in fashion design principles by creating a wearable design that incorporates technology and reflects the annual theme. Semifinalist teams participate in an on-site presentation and interview in which they present their garment designs, discuss the design process, and answer questions from judges. The theme for the current year is published on the National TSA website under Themes & Problems.

Eligibility

A. Four (4) teams of 2-4 students per chapter may register.
B. Nine (9) teams will advance to the semifinal round based on their documentation portfolio.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
A. Ten (10) minutes are allowed for the presentation/ interview broken down as follows:
    1. two (2) minutes for set-up
    2. three (3) minutes for the presentation
    3. three (3) minutes for the interview
    4. two (2) minutes for the removal of items
B. A deduction of five (5) points will be incurred for exceeding the presentation/interview time limit.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants access the annual theme on the TSA website under Themes & Problems.
C. Participants concentrate their efforts on designing a wearable prototype with technological elements.

D. Participants prepare their documentation portfolio according to the regulations.
E. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
F. Judges score the Documentation Portfolio criteria.

ON-SITE SEMIFINAL ROUND
A. Participants check in the following (contained in a plastic storage container not exceeding 32 quarts) at the time and place stated in the conference program:
    1. The wearable prototype
    2. Patterns
    3. The documentation portfolio (printed and secured in a clear front report cover)
B. Entries are reviewed by judges with neither students nor advisors present based on the Quality of the Garment and Pattern criteria. Only the item(s) specified in the annual theme and patterns are judged. Additional accessories, not named in the event requirements, are not to be considered in scoring.
C. Participants report at the assigned time and place for the presentation/interview. Models are present and wearing the prototypes designed by the team.
D. Semifinalists present their designs and answer questions from the judges.
E. Participants are allowed ten (10) minutes to complete the presentation/interview broken down as follows:
    1. two [2] minutes for set-up
    2. three [3] minutes for the presentation
    3. three [3] minutes for the interview
    4. two [2] minutes for removal of items
F. Points will be deducted from a team's score for exceeding the ten (10)-minute time frame allowed for the semifinal round.
G. Final evaluation by judges takes place immediately following the completion of the presentation.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Documentation materials (comprising a "portfolio") are required and must be printed single-sided on 8 ½" x 11" paper and be secured in a clear front report cover, with the following pages, in this order:
    1. Title page with the event title, chapter ID#, the conference city and state, and the year; one (1) page

2. Table of contents; one (1) page.
3. Literature research summary; maximum of two (2) pages.
4. Interpretation of theme; maximum of two (2) pages.
5. Explanation of the design and construction of the prototypes, textiles used, notions needed, sewing/construction techniques used, etc.; maximum of two (2) pages.
6. Design process sketches (hand-drawn); maximum of five (5) pages.
7. Computer-drawn final design print-outs; maximum of five (5) pages.
8. References/resources; maximum of five (5) pages.

ON-SITE SEMIFINAL ROUND
A. Participants submit their portfolio, patterns, and prototype(s), in a plastic container not exceeding 32 quarts. The container must only include the printed portfolio, patterns, prototype(s), and components listed in the annual theme. **A cardboard box is not a plastic container.**
B. The portfolio, patterns, and prototype MUST be submitted together in the plastic storage container not exceeding 32 quarts.
C. ALL components of the entry (patterns, prototypes, etc.) must be the original work of the participants.
D. Prototypes (garments):
   1. Any type of prototype (garment) that is typical of responsible clothing design and creation is considered appropriate.
   2. The purchase/use of special textiles (water/ fireproof materials, etc.) is not required.
   3. Information about textiles must be used in the research/design portfolio, but the prototype does not have to be constructed using these materials.
   4. No hangers or dressmaker mannequins are allowed. All required components must be submitted in the plastic storage container not exceeding 32 quarts.
   5. The prototype, with any additional items required by the annual theme, must be placed in the container with the portfolio and patterns.
   6. The prototypes must be presentation quality.
   7. All designs and prototypes/garments should be appropriate for viewing at the ARTSA and National TSA Conferences.
   8. Any portfolio or garment that depicts inappropriate or unacceptable designs is disqualified.
   9. Only the required prototypes (garments) are to be submitted for evaluation. Additional items, including accessories and other garments, may be used only in

the presentation and may not be submitted for preliminary judging.
E. Patterns:
   1. Full-sized student-made pattern(s) must be included.
   2. Patterns must be made of appropriate lightweight vellum paper.
   3. Patterns must NOT be purchased.
F. Each semifinalist team must have access to student TSA member models and the team-created prototypes in order to compete in the semifinals. Models must be members of the team's TSA chapter.
G. Spectators are not permitted during the semifinal challenge with the exception of event staff.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
The documentation portfolio

ON-SITE SEMIFINAL ROUND
A. The prototype (wearable garments)
B. The patterns
C. The presentation/interview

Refer to the official rating form for more information.

Flight Endurance

Overview

Participants apply the design iteration process to build, fly, and adjust (trim) a rubber-band powered model aircraft to make long endurance flights inside a contained airspace. Models must be of fixed-wing design and comply with all event specifications.

Eligibility

A. Three (3) individuals per chapter may register.
B. Fifteen (15) teams will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
Thirty (30) minutes is allowed to trim flights.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants prepare the documentation portfolio according to the regulations.
C. Participants prepare their model aircraft.
D. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
Testing Of Pre-Built And Trimmed Aircraft
A. Participants check in the following at the time and place stated in the conference program:
    1. The completed aircraft
    2. The printed portfolio
    3. Safety glasses
B. Aircraft will be stored in a secure holding area until the scheduled time for trim and official flights.

On-Site Testing
A. Prior to trim flying, participants are strongly encouraged to check out the designated competition room for this event.

B. Participants attend a pilot's meeting to review the sequence for making official flights.
C. Participants arrive at the competition site for trim flying during the time designated for their heat.
D. Time allotted for the trim portion of the event may be extended according to the number of participants and site scheduling.
E. Participants have two (2) opportunities to fly their models for official times.

Official Flight Test
A. In an orderly fashion, participants proceed to a group timer for permission to fly.
B. Participants place their models on the floor and wait for the release signal from the timer. Timing begins when the model rises off the ground.
C. Flight time ends when models hit the floor/ground or when they come to rest on an obstruction.
D. The timekeeper records the two (2) official flight times and landing bonus(s) for each participant.
E. Immediately following the second flight, the participant hands his/her motor to the judge for weighing. Place in a zip lock bag and record the entry number on the outside.

Scoring
A. Entries are evaluated by the judges with neither students nor advisors present based on the following criteria:
    1. Judges enter the flight times and landing bonus(es) for each entry to determine the top sixteen (16) contestants, which will not be posted.
    2. Judges complete the inspection of the model and flight box, enter the placement points, and add those scores to the portfolio scores to determine finalists.
B. A model or flight box that fails inspection will receive a zero (0) for the flight rankings.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Documentation materials (comprising "a portfolio") are required and must be secured in a clear front report cover with the following single-sided, 8 ½" x 11" pages, in this order:
    1. Title page with the event title, the member identification number, the conference city and state, and the year; one (1) page

2. A flight log; pages as needed (see official sample below), with the previous ten (10) flights.
3. The technical attributes of the design and a description and identification of parts; pages as needed
4. An analysis of the modifications and an explanation of why each was made must be included; pages as needed
5. A technical review of the flight log that explains the trim adjustments and modifications required to improve endurance. Experts from the Academy of Model Aeronautics (AMA) and the National Free Flight Society (NFFS) may scrutinize this information for validity; one (1) page
6. Assembly drawing of plane (full size or scale drawing); pages as needed
7. Scaled engineered drawings of all structural parts of the plane; pages as needed

B. The model and its parts must be contained in a flight box that does not exceed 25cm x 40cm x 60cm. Flight box hardware, such as hinges, handles, and wheels, are not measured.

C. A flight box that violates any part of Regulation C will disqualify the model.

D. Models: A commercially-available kit may be used as long as the resulting model meets the specifications listed in the following rules and regulations:
1. Models are to be made of any materials that are typically found in model construction. This includes, but is not limited to: wood, foam, foam board, and plastics.
   a. Hardeners are permitted but are not required.
   b. The use of any materials that are deemed unsafe will not be tested and will be disqualified. This includes any model containing Boron Fibers or Filaments.
2. Models must use a fixed-pitch propeller with a maximum of 170mm diameter.
   a. Propellers may be trimmed, shaped, balanced, or re-pitched, but must remain fixed in pitch.
   b. Variable-pitch propellers and/or mechanisms are NOT permitted.
3. Rotary-wing aircraft and aerostat (lighter than air) aircraft are NOT permitted.
4. Fuselage dimension: minimum of 300mm in length, measured with prop assembly attached.
5. Wingspan: maximum of 40cm horizontally projected, wing chord 9cm projected.
6. Rubber motor: maximum weight of motor is 1.50 grams, including the O-rings.

a. No length measurement is made.
b. Spare motors are allowed during the official flights.
c. Two (2) rubber O-rings may be used on the rubber motor loop for easier handling of wound motors.
7. Model weight: minimum of 8.0 grams, maximum of 23.0 grams.
   a. Models are weighed without motors attached.
   b. Clay is permitted for trim ballast.
   c. Model is weighed with clay ballast.
8. Steel wire may be used only for the propeller shaft, motor hook, landing gear, and the connection between fuselage and tail. Small plastic tubes, such as coffee stirrers, may be used.
9. The two (2) wheels must be a minimum of 15mm in diameter, made of plastic or wood, and they must roll freely by the weight of the plane on a smooth surface.
10. When at rest, the landing gear must support the model without the fuselage and/or propeller touching the floor or launching pad.

ON-SITE SEMIFINAL ROUND
A. Flight Endurance is an individual event.
1. No one may assist the participant in any way during either trim or official flights.
2. Violation of this regulation will result in disqualification.
B. Acceptable flight support equipment includes the following:
1. Mechanical rubber motor winders or battery-powered motor winders may be used. No AC-powered winders are allowed.
2. A winding stooge may be used to anchor the model while the motor is being wound. A person may not serve as a winding stooge.
3. A poster board launching platform is provided.
C. Only minor repairs are allowed during trim and time trials.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
Documentation portfolio

ON-SITE SEMIFINAL ROUND
A. Inspection of model and flight box
B. Flight ranking points
C. Flight times and landing bonus(s)

Refer to the official rating form for more information.

Participant ID#:			Dates:		
Flight #	# of Winds	Time Aloft	Flight Pattern	Trim Adjustment	Advisor Sign Off
#1					
#2					
#3					
#4					
#5					
#6					
#7					
#8					
#9					
#10					

Forensic Science

Overview

Participants take a test of basic forensic science theory to qualify as semifinalists. Semifinalist pairs examine a mock crime scene and demonstrate their knowledge of forensic science and crime scene analysis. Participants are expected to survey the scene and use proper techniques to collect evidence from the mock crime scene using the team's equipment box. Teams then collect their data and perform a detailed written analysis of the crime scene.

Eligibility

A. An unlimited number of teams of 2 students per chapter may register.
B. The 5 teams with the highest average test scores will advance to the semifinal round.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
The one (1)-hour test is administered to all members of the team at the same time. Each member takes the test individually. The testing window is open from 3/3/2025-3/7/2025.

ON-SITE SEMIFINAL ROUND
A. Twenty (20) minutes are allowed to review the crime scene and gather evidence.
B. Time commences when all participants are in the crime scene room and concludes after twenty (20) minutes.
C. An additional twenty (20) minutes are allowed for semifinalist teams to write their analysis.
D. Time begins when a team enters the analysis room and concludes at the end of twenty (20) minutes.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Participants take the test individually through the JudgePro system any time between Monday, March 3rd at 7:00 am and Friday, March 7th at 6:00 pm.
C. Participants follow the specific regulations and adhere to the directions provided by their proctor.
D. Both team members must test at the same time but will take the exam individually.

E. The five (5) top-scoring teams will qualify as semifinalists.
F. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Participants report at the assigned time and place for the on-site challenge.
B. Each team is given a copy of the on-site problem to solve and is required to:
    1. Demonstrate three to four (3-4) techniques/procedures for evidence collection using their toolkits.
    2. Write an analysis of the crime scene (see Mock Crime Scene Analysis form).

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Test will be administered online by a school-affiliated adult.
B. The average of the scores of both team members determines team ranking.

ON-SITE SEMIFINAL ROUND
A. No reference may be made concerning the name of the team, the team members, or their school.
B. Team members are to write their team identification number in the top right corner of the written analysis.
C. Each written analysis must be the result of the team's own effort.
D. No reference materials may be used during this event.
E. No observers are allowed in the event or preparation rooms during the event.
F. Teams are allowed to bring a tool kit to aid in their crime scene analysis. Neither ARTSA nor National TSA will provide any items for a tool kit. The tool kit can included the following items:
    1. roll of string
    2. Personal protective equipment
    3. tape measure (10 m)
    4. tweezers
    5. scissors
    6. [crime scene template](#)
    7. flashlight
    8. pen or fine point marker (for labeling)
    9. pencils
    10. edvidence collection bags
    11. gloves

12. clipboard(s)
13. blank sheets of paper (for note taking)
14. Camera to aid in crime scene sketch. Cell phones are not allowed. Photos must be deleted before leaving the holding room.
15. crime scene tape
16. measuring devices
17. evidence markers
18. tape
19. graph paper
20. ruler
21. magnifying glass

G. Participants analyze a crime scene and synthesize their findings in a written report/analysis.

H. Participants must be able to complete (at a minimum)the following:
1. Conduct a primary survey of the crime scene.
2. Process a crime scene.
3. Collect evidence and keep detailed documentation.
4. Record and preserve evidence.
5. Collect trace evidence
6. Create a proportional drawing that accurately represents the crime scene. Note: The crime scene template in the toolkit may be used to create the drawing, but the drawing does not need to be to scale. Students will be provided with blank paper for drawing.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
The averaged test scores

ON-SITE SEMIFINAL ROUND
Performance on the on-site challenge

Refer to the official rating form for more information.

Future Technology and Engineering Teacher

Overview

As the need for student proficiency in technology is increasing, so is the need for qualified technology education teachers. Technology is moving at a rapid rate, and those expected to teach are also expected to adopt this technology as fast as it's developed. In this event, participants create a portfolio demonstrating their interest and aptitude for the teaching profession, which will include a lesson plan and accompanying activity that incorporate standards of technological literacy. Semifinalists engage the judges with the proposed activity. (Use the International Technology and Engineering Educators Association ITEEA website at www.iteea.org for more information about the technology standards.) Topics also should reflect Science, Technology, Engineering, and Mathematics (STEM) initiatives and integration. Lesson plans/activities that explore knowledge, creativity, and skills in the following areas are suggested:

- Medical technology
- Agricultural and biotechnology
- Power and energy technology
- Information and communication technology
- Transportation technology
- Manufacturing technology
- Construction technology

Eligibility

A. Four (4) individuals per chapter may register.
B. Four (4) individuals will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Semifinalists have fifteen (15) minutes for the presentation (and responses to judge questions) of their activity with the timing broken down as follows:
1. Three (3) minutes for any required set-up
2. Seven (7) minutes or less for the activity presentation
3. Three (3) minutes to answer questions from the judges
4. Two (2) minutes for breakdown and removal of materials.
B. One (1) point will be deducted for each ten (10)-second interval over the allotted time for the semifinal presentation.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. In preparation for this event, participants thoroughly research and select two (2) educational technologies or applications that can be integrated into the classroom.
C. Participants assemble a portfolio containing their research on educational technologies/applications, a lesson plan incorporating ITEEA standards, and an activity that accompanies their lesson.
D. The portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
A. In preparation for the semifinal round, participants prepare a seven (7) minute presentation demonstrating their activity.
B. Participants report at the time and place stated in the conference program to sign up for a scheduled time to present the activity.
C. Participants report at the assigned time and place for the presentation.
D. Participants respond to questions pertaining to their entry.
E. Participants have fifteen (15) minutes for the presentation (and responses to judge questions) broken down as follows:
1. Three (3) minutes or less to set-up/prepare materials for the activity.

2. Seven (7) minutes or less to present the activity.
3. Three (3) minutes to answer questions from the judges.
4. Two (2) minutes to breakdown and remove materials.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

Documentation materials (comprising "a portfolio") are required and should be compiled into a single PDF file for submission.

The portfolio must include the following pages, in this order:

A. Title page with the event title, the conference city and state, the year, and the participant's identification number; one (1) page
B. Table of contents; pages as needed
C. Research summaries; one (1) page maximum for each technology/application
   1. Participants summarize the information derived from the research about each of the two (2) educational technologies or applications selected.
   2. Participants should take into consideration the cost, intended age, and feasibility of the technologies/applications.
D. Personal essay; one (1) page
   1. Each participant must complete an essay, one (1) page (single-sided), explaining three (3) traits that a technology or engineering teacher should possess and why those specific characteristics are important.
   2. The essay must be typewritten and free of spelling and grammatical errors.
E. Lesson plan/activity; pages as needed
   1. A lesson plan describing the rationale, goals and objectives, standards correlation, and a description of the lesson and activity—including assessment— must be submitted.
   2. The lesson plan must be clearly labeled with the grade level for which it is intended.
   3. The ITEEA Standards for Technological Literacy must be used. Available online at www.iteea.org/Publications/StandardsOverview.aspx
F. Copies of handouts; pages as needed
G. References and resources; pages as needed
H. Student copyright checklist (see Forms Appendix); one (1) page
I. Consent and Release Forms – Recognizable individuals pictured in any images (minors require parental consent) must give their written consent before the images can be used in this event (see Photo/Film/Video Consent and Release Form in Forms Appendix); pages as needed
J. The research summaries, essay, and lesson plan/ activity must be the result of the participant's own efforts and not purchased or open source material. General content from either may be used, but it must be cited in MLA format.
K. The font size for any documentation component should be no less than size 10.

ON-SITE SEMIFINAL ROUND

A. Activity Presentation
   1. Participants design and create a presentation to walk judges through the proposed activity.
   2. Participants describe the rationale, goals and objectives, standards correlation, and a description of the lesson and activity.
   3. The ITEEA Standards for Technological Literacy must be used.
   4. The activity presentation must acknowledge the grade level for which it is intended.
   5. Activity Presentation timing:
      a. The presentation cannot exceed seven (7) minutes.
      b. There is no minimum length restriction.
      c. The activity presentation is timed from the first sound or voice to the final sound or voice.
      d. The lesson plan presentation must include any applications being used and cite the applications in the credits or the introduction.
B. Entries must be the result of the participant's own efforts and not purchased or open source material.
C. Audio-visual materials such as charts, graphs, posters, displays, flip charts, transparencies, and models may be used.
D. Any audio visual equipment required for the presentation must be provided by the participant, including power strip with surge protector and extension cord.
E. Participants are not allowed to watch or hear the presentations of other participants.
F. Participants are encouraged to interact with the judges, who will act as students in the classroom.
G. One (1) point will be deducted for each ten (10)-second interval over the allotted time for the presentation, set up, and/or clean-up.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
The documentation portfolio

ON-SITE SEMIFINAL ROUND
The presentation/interview

Refer to the official rating form for more information.

Geospatial Technology

Overview

Competitors interpret geospatial data in multiple formats and formulate projections about the area of interest based on an annual theme posted on the National TSA website under Themes & Problems. Participants develop a digital portfolio containing maps, data, and pertinent documentation, which is submitted pre-conference. Participants summarize their findings in a visual infographic map to be submitted on-site and defend their projections in a presentation.

Eligibility

A. Three (3) teams of 2-3 students per chapter may register.
B. Six (6) teams will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
No more than ten (10) minutes is allowed for the defense presentation, broken down as follows:
A. One (1) minute to set-up
B. Up to five (5) minutes to present
C. Up to four (4) minutes to respond to questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Participants review the annual challenge found on the National TSA website under Themes & Problems.
C. Participants concentrate their efforts on researching the issue, collecting, analyzing, and synthesizing various types of Geospatial data, and making predictions.
D. Participants prepare their documentation portfolio and visual infographic according to the regulations.
E. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
F. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Participants report at the time and place stated in the conference program to submit their visual infographic map entries.
B. Judges review and score the Visual Infographic criteria
C. Participants report at the designated time and place for the presentation/interview.
D. Students participate in a defense presentation that lasts no more than ten (10) minutes, broken down as follows:
    1. One (1) minute to set-up
    2. Five (5) minutes to present
    3. Up to four (4) minutes to respond to questions.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants must understand the fundamental concepts and principles of the issue researched. Research about the issue shall focus on:
    1. Analysis of the collected geospatial data, which may include but is not limited to: imagery, boundaries and places, demographics and lifestyles, basemaps, transportation, earth observations, urban systems, or historical maps
    2. Representation of the data using any online platform (e.g. ArcGIS)
    3. Synthesis of the prediction(s).
B. The finished portfolio must be saved as a multi- page PDF document with the pages presented in the following order:
    1. Title page with the event title, the conference city and state, the year, and the team ID number; one (1) page
    2. Table of contents; pages as needed
    3. A description of the team's interpretation of the challenge; one (1) page
    4. An explanation of the challenge; one (1) page
    5. Collected geospatial data; pages as needed.
    6. Analysis maps; pages as neded
    7. Analysis of collected geospatial data; pages as needed.
    8. Written explanation of the team's prediction; two pages maximum
    9. Resource page, including citations and copyright letters if applicable; pages as needed
    10. Work Log (see Forms Appendix); pages as needed
    11. Student Copyright Checklist (see Forms Appendix); one (1) page

12. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
13. Entries received or changes made to the submitted entries after this deadline will not be judged.

ON-SITE SEMIFINAL ROUND

Visual infographic map:
A. Must have the team identification number clearly labeled in the upper right-hand corner of the submission.
B. May not reveal the school, chapter name, or city.
C. Cannot exceed dimensions of 15" deep x 2.5' wide x 4' high.
D. Must focus on the predicted outcomes/ findings from the analyzed data
E. All ideas, text, images, and sound from other sources must be cited.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The documentation portfolio

ON-SITE SEMIFINAL ROUND
A. The visual infographic map
B. The defense presentation

Refer to the official rating form for more information.

Manufacturing Prototype

Overview

Teams design, fabricate, and use Computer Integrated Manufacturing (CIM) to create a product that addresses the annual theme found on the National TSA website under Themes & Problems. The product may use additive and/or subtractive manufacturing of any traditional, Computer Numerical Control (CNC), 3D printing, or laser technology available. A documentation portfolio and one (1) completed prototype are evaluated. Semifinalist teams participate in an on-site challenge to demonstrate their product and give a promotional "sales pitch" to the judges.

Eligibility

A. Three (3) teams of 2-6 students per chapter may register.
B. Twelve (12) teams will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
Up to 10 minutes total for setup, presentation, and questions:
A. Time begins when students arrive at the judging table.
B. Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C. Presentation should be no longer than 2 minutes.
D. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. All portfolio components of the chapter's entry must be finished and submitted to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Participants report to the time and place stated in the conference program with:

1. the documentation portfolio
2. the prototype of the product. (Please note the prototype must be fully functional.)
B. Judges independently assess the entries.
C. Participants report at the designated time and place for the presentation/interview.
D. Each team makes a sales pitch about their product to "potential buyers" (judges) in the room and responds to questions.
E. The sales pitch begins on the timekeeper's signal.
F. Judges evaluate the presentations.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Documentation materials (comprising "a portfolio") are required and should be secured in a clear front report cover with the following single-sided, 8 ½" x 11" pages, in this order:
1. Title page with the event title, the team identification number, the conference city and state, and the year; one (1) page
2. Table of contents; one (1) page
3. Photographs with descriptions showing research into existing solutions to the problem; one (1) page
4. Brainstorming sketching of possible solutions; one (1) page
5. An isometric assembly drawing showing the product and all its parts; the paper size is 11"x 17", folded, with the drawing facing out and placed in the portfolio; one (1) page
6. Detail drawings of each manufactured part labeled to match the items in the parts list (from the working drawing). The paper size is 8 ½" x 11"; pages as needed (to show all machined parts)
7. Photographic images (actual photographs, not renderings) showing the construction of the prototype; two (2) pages maximum
8. Photographic images (actual photographs, not renderings) of designs tested, with a descriptive caption per image of what was improved by the testing of the design and what the team felt was the strengths and weaknesses of the final design; two (2) pages maximum
9. Bill of Materials; one (1) page
10. Work Log (see Forms Appendix); pages as needed

B. Materials:
   1. The prototype must be constructed using two (2) CNC or CIM processes, including, but not limited to:
      a. CNC Machining
      b. Laser Engraving
      c. 3D Printing
      d. CNC Vinyl Cutting
   2. Traditional manufacturing methods may be used IN ADDITION to the two (2) required CNC/CIM processes.
   3. The finished product must not exceed the dimensions 7" x 7" x 7".
   4. Five (5) major parts are required; major parts are those with drawings that have been manufactured.
   5. Plastic, wood, or metal may be used for any of the parts for the promotional product.
   6. The prototype must be finished (sanded, painted, etc) as required by the design.
   7. Stock fasteners may be used and may include, but are not limited to:
      a. Nuts
      b. Washers
      c. Screws
      d. Wing nuts
   8. Stock electronic components may be used and may include, but are not limited to:
      a. Motors
      b. Sensors
      c. LED

ON-SITE SEMIFINAL ROUND
Sales pitch:
A. Using leadership and/or 21st century skills, participants present a two (2)-minute "sales pitch" about their promotional product.
B. Participants explain the production cost per unit, the materials used to make the product, and price breaks of units based on purchase.
C. No electronic devices may be used in the sales pitch.
D. A promotional flier or brochure may be given to judges as part of the sales pitch; the brochure size is limited to one double-sided page on 8 ½" x 11" paper.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
   A. The documentation portfolio
ON-SITE SEMIFINAL ROUND
   A. The component analysis
   B. The sales pitch/demonstration

Music Production

Overview

Participants produce an original musical piece that reflects the annual theme on the TSA website under Themes & Problems.

Eligibility

A. Three (3) teams of 1-6 students per chapter may register.
B. Nine (9) teams will advance to the semifinal round based on their documentation portfolio and music piece scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

A. The musical piece must be more than one (1) minute and less than three (3) minutes in length.
B. A deduction of five (5) points total will be incurred for each fifteen (15) seconds under the one (1) minute minimum and for each fifteen (15) seconds over the three (3) minute maximum length.
C. The timing starts with the first sound and continues until the last sound ends.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025.

ON-SITE SEMIFINAL ROUND

Up to 10 minutes total for setup, presentation, and questions:

A. Time begins when students arrive at the judging table.
B. Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C. Judges will have already listened to student entries; students should not play the entire entry as part of their presentation.
D. Presentation should be no longer than 3 minutes.
E. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Participants access the annual theme on the TSA website under Themes & Problems.
C. Participants design an original music piece.
D. Participants record their design process within a documentation portfolio.
E. Participants submit a URL to the audio file (in MP3 or suitable format) and a multi-page PDF of the required documentation by 11:59 pm on February 18, 2025.
F. Judges independently assess the entries using the following procedure:
    1. Judges score the Music Piece criteria to determine the top twenty-four (24) preliminary contestants, which will not be posted.
    2. Judges score the Documentation Portfolio criteria of those top twenty-four contestants to determine the top sixteen (16) semifinalist teams.

ON-SITE SEMIFINAL ROUND

Each semifinalist team reports at the assigned time and place for the interview.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

A. The musical piece and required documentation must be uploaded or located online and accessible for evaluation by the posted deadline.
B. The entry must point directly to the team's entry. Entries that require a software download or a request that access be granted will not be judged.
C. Entries received, or changes made to submitted entries after this deadline will not be judged.
D. Musical Piece:
    1. The URL to the musical piece must point directly to the file and not require any permissions or installation of software for evaluation.
    2. Lyrics may accompany the musical piece but are not required.
    3. The musical piece must be greater than one (1) minute and less than three (3) minutes in length.
    4. There will be a five (5)-point deduction for:
        a. Each fifteen (15) seconds under the one (1)-minute minimum
        b. Each fifteen (15) seconds over the three (3)-minute maximum length.

5. All musical pieces must be the original work of the team and must have been completed within the current school year.
6. Free, non-copyrighted sounds, loops, or other musical elements may be incorporated into musical pieces. The sources of these elements and the way in which they are used in the musical piece must be described in the portfolio, and the track list must illustrate these elements.
7. Each actual instrument, voice, and/or synthesized instrument track used in the final music piece must be illustrated in a timeline format in the portfolio.
8. Where applicable, all ideas, sounds, and loops from other sources must be cited. If copyrighted material is used, proper written permission must be included (see the Student Copyright Checklist in the Forms Appendix). NOTE: Failure to follow this procedure results in disqualification.

E. Documentation Portfolio:
1. The documentation portfolio should be complete, well written, and professional in organization and appearance.
2. Documentation materials (comprising a "portfolio") are required and must be submitted as a multi-page PDF document with pages in this order:
   a. Title page with the title of the musical piece, the event title, the conference city and state, and the year; one (1) page
   b. Table of contents; pages as needed
   c. Work Log (see Forms Appendix); pages as needed
   d. Self-evaluation of the piece using criteria from the official rating form; one (1) page
   e. Lyrics (if desired); pages as needed
   f. Audio composition tracklist: Each actual instrument, voice, and/or synthesized instrument track used in the final music piece must be illustrated graphically using a timeline format similar to that shown in the graphic; pages as needed.
   g. When musical elements are used that were NOT created by the team, the source, effects applied, the way each element was incorporated into the song, and how each element corresponds to the musical piece's track list must be included; pages as needed.
   h. List of hardware, software, and instruments used in the development of the musical piece; one (1) page
   i. List of references that includes sources for materials (non-copyrighted); pages as needed
   j. Completed Student Copyright Checklist, as applicable (see Forms Appendix)

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
   A. The musical piece
   B. The documentation portfolio

ON-SITE SEMIFINAL ROUND
The presentation/interview

Refer to the official rating form for more information.

On Demand Video

Overview

Participants showcase video skills, tools, and processes to communicate, entertain, inform, analyze and/or illustrate a topic, idea, subject, or concept through a film produced in 36 hours or less before the ARTSA State Conference. Required criteria, such as props and a line of dialogue, make the competition more challenging and will be revealed when the challenge is opened on JudgePro.

Eligibility

Three (3) teams of 2-6 students per chapter may register.

Time Limits

A. The video must be no longer than sixty (60) seconds in length. Videos over 60 seconds will be disqualified.
B. Participants have thirty-six (36) hours, beginning when they open the challenge on JudgePro, to complete the entire production.

Procedure

PRE-CONFERENCE

A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants open the challenge on JudgePro when they are ready for their 36 hours to commence. The window will open on Monday, March 3rd at 12:01 am CT and submissions close at 11:59 pm on Friday, March 7th.
C. Each team supplies its own video production and editing equipment to complete its entry.
D. Teams are responsible for submitting a HYPERLINK of their video solution and a PDF of a completed Student Copyright Checklist in JudgePro within 36 hours of opening the challenge or by 11:59 pm on Friday, March 7th, whichever comes first.
E. Entries are reviewed by judges with neither students nor advisors present

Regulations and Requirements

A. Participants produce a video while observing the following:
  1. Participants film their footage, which must be appropriate for the TSA community, only in public areas (classrooms are allowable with teacher permission).
     a. Teams are not allowed to film in sleeping rooms, restrooms, bathrooms, restaurants, or elevators/escalators.
     b. Participants may not disturb any event in progress, enter a restricted area, interrupt a function, or participate in behavior unbecoming of a TSA member.
     c. Failure to follow these instructions will result in disqualification.
  2. TSA competition attire is optional for the participants in the video.
  3. Teams may use no more than one (1) video camera for the video production.
  4. Teams must edit their projects on a nonlinear editing system or their camera. Teams are responsible for providing their own editing equipment.
  5. All video footage must be the original work of the team and must have been completed during the event timeline.
  6. All members, adults, or children that are visible in the video must sign a Photo/Film/Video Consent and Release form (see Forms Appendix)
B. Submission Information:
  1. Participants may choose any video hosting site (such as an UNLISTED YouTube URL), or a shareable link in cloud storage, as long as the video is located online and accessible for evaluation.
  2. The URL must point directly to the participant's entry. Entries that require a software download or a request that access be granted will not be judged.
  3. If the hosting site has a time displayed on the thumbnail that is greater than 1:00, the team must verify that the player page does not exceed 1:00.
  4. Entries received, or changes made to submitted entries after the deadline will not be judged.
  5. Participants must complete the Student Copyright Checklist (see Forms Appendix) and save it as a multi-page PDF to be submitted electronically with the entry online. Any Photo/Film/Video Consents must also be included in this PDF. Failure to include the Student Copyright Checklist will result in disqualification.
  6. Where applicable, all ideas, text, images, and sounds from other sources must be cited. Copyrighted materials may NOT be used.If including a citation page,

the page must be included as a second page of the
Student Copyright Checklist PDF in B.4.

Evaluation

The completed video production.

Photographic Technology

Overview

Individuals demonstrate an expertise in using photographic and imaging technology processes to convey a message. Participants then communicate their logical processes through an on-site interview. The annual theme will be posted on the National TSA website under Themes & Problems.

Eligibility

A.   Three (3) individuals per chapter may register.
B.   Sixteen (16) individuals will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the entrant's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025.

ON-SITE SEMIFINAL ROUND
Up to 10 minutes total for setup, presentation, and questions:
A.   Time begins when students arrive at the judging table.
B.   Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C.   Presentation should be no longer than 5 minutes.
D.   Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A.   Participants review the [TSA Honor Statement](#) for Competitive Events.
B.   Participants access the annual theme on the National TSA website under Themes & Problems.
C.   Participants produce a photographic portfolio while observing regulations.
D.   The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
E.   A separate slideshow presentation of just the images should be created to use during the semifinal interview.

ON-SITE SEMIFINAL ROUND
A.   Participants will report to the event area at the scheduled time and place.
B.   Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C.   Presentation should be no longer than 5 minutes.
D.   Judges may use the remaining time for questions.
E.   Judges independently assess the entries and interview responses.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A.   Participants interpret the annual theme posted on the National TSA website under Themes & Problems to unify the photographs included in the portfolio.
B.   Participants are solely responsible for all aspects of the competition, including taking the photographs, editing, and completing the portfolio. This includes images used in special effects photography.
C.   Photographic Portfolio: The finished album must be saved as a multi-page PDF document with the pages in the following order:
   a.   Title page – must include the event title, the conference city and state, the year, the participant's ID number.
   b.   Table of contents; pages as needed.
   c.   Summary of the theme must follow the annual challenge, including a detailed description of how the theme was interpreted by the participant, why the particular subjects were chosen, as well as the challenges that were faced in the selection of the subjects, in taking the photos, and in selecting and editing the final images; pages as needed.
   d.   The photographs:
      i.   The entry must contain five (5) separate images as detailed in the annual theme posted on the National TSA website under Themes & Problems:
         1.   one (1) color image
         2.   one (1) black and white image
         3.   one (1) macro image
         4.   one (1) still life
         5.   one (1) student choice
            Note: Sepia tones, blue tones, or coloring of any type, other than black and white, are counted as color images.

ii. The photograph (image) can be in portrait or landscape orientation depending on the photographer. The size of the photo on the page can range from as small as 5" x 7" to as large as 8" x 10" (if portrait).

iii. One-half (1/2) page typewritten statements in 12-point Times New Roman font containing the following information must precede each image or be on the page after the image. Statements should NOT appear on the same page as the final image:
1. Camera make (Nikon, Canon, Panasonic, Sony, etc.)
2. Camera model (CoolPix, Rebel, 5D, etc.)
3. F-stop at which the photograph was taken
4. Exposure time
5. ISO speed
6. Focal length
7. A brief description of the image, how the photographer interprets it to meet the challenge criteria, and what edits were made to the original image to arrive at the final product. Include detailed information about the process/ special effects applied to the image.

iv. Any image submitted that combines images must have the unaltered images included in the Resources/References section of the entry.

e. The references and resources page must include a list of resources used to complete the album, including camera, software, hardware, etc.

f. Student Copyright Checklist. Participants must complete the Student Copyright Checklist (see Forms Appendix on the TSA website), one (1) page.

g. Photo/Film/Video Consent and Release Forms – recognizable individuals pictured in the images (minors require parental consent) must give their written consent before the images can be used in this event (see Photo/Film/ Video Consent and Release Form in Forms Appendix); pages as needed

D. Failure to include the Student Copyright Checklist or consent forms will result in disqualification.

E. All prints used in this event should be appropriate for viewing at the Arkansas and National TSA Conference. Any entry that includes images depicting inappropriate or unacceptable behavior will result in disqualification.

SEMIFINAL ROUND

A. The individual reports to the event area at the time and place stated on their schedule.

B. Once in the presentation room at the assigned time, the participants will have one (1) minute to open the presentation and prepare for their interview using the participant's laptop. The setup time is not counted towards the presentation and interview time.

C. Semifinalists are responsible for providing a charged laptop to display their presentation. No access to power will be provided.

D. The semifinalist will give a 5-minute presentation that details the thought processes creating each image of the portfolio. Remaining time will be used to answer interview questions. The presentation and interview will take no longer than ten (10) minutes.

E. Judges will independently assess the interview responses.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
The photographic portfolio

ON-SITE SEMIFINAL ROUND
The interview

Refer to the official rating form for more information.

Prepared Presentation

Overview

Individuals prepare to deliver an oral presentation, using a digital slide deck of their own design. The theme for Prepared Presentation will reflect the current National TSA conference theme and be located on the National TSA website under Themes & Problems.

Eligibility

A. Three individuals per chapter may register.
B. Only individuals that upload a slide deck will be scheduled to present. The slide deck must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.
C. Eligible individuals will be announced by email and on the ARTSA website by March 18, 2025.

Time Limits

ON-SITE SEMIFINAL ROUND
A. Each presentation must be no less than three (3) minutes and no more than five (5) minutes.
B. A maximum of one (1) minute is allowed for set-up.
C. At the conclusion of the presentation, participants must remove all equipment and exit the room.
D. A time deduction as noted in the rubric will be incurred for not adhering to any time designations/restrictions.

Procedure

PRE-CONFERENCE CHECK
A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Participants upload their slide deck to Judgepro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Participants will report to the holding area, as stated in the conference program, at their individual assigned time.
B. The event coordinator introduces each participant by number and in order of scheduled times. The schedule allows time for set-up and removal of materials.
C. Judges independently assess each participant's speech.

Regulations and Requirements

ON-SITE SEMIFINAL ROUND
A. Each presentation must be the result of the participant's own efforts.
B. The topic for the Prepared Presentation event highlights a current topic in a STEM field. Participants demonstrate their knowledge of the subject material by delivering a thoughtful response to the annual prompt. Information about technology and TSA is appropriate as long as it relates to the published topic.
C. The speech must include the use of a digital slide deck with a minimum of five (5) slides. The participant must not include any identifying information in the slide deck except for the participant's ID number.
D. Participants are not allowed to hear other participants' speeches.
E. It is the participants responsibility to provide one (1) laptop needed for the presentation. The laptop must be battery powered, charged, and will be placed on the judges table. The judges will view the screen during the presentation. No projection equipment is allowed.
F. Participant scores are penalized one (1) point per ten (10) second interval for speaking over or under the allotted time.
   1. The same penalty is used for set-up.
   2. Set-up time begins when the participant is called into the room and ends when the participant is ready to deliver the presentation.
   3. The speech time will commence when the speech begins.
G. A podium will be available in the room, but the laptop will be on the table with the judges.
H. A time-keeper will hold up a card with "one minute remaining" when the presentation has reached the four minutes mark.
I. No observers are allowed in the event or preparation rooms during the preliminary round.

Evaluation

The quality of the presentation and the appropriate use and content of the slides in the slide deck as it relates to the national TSA conference theme.

Refer to the official rating form for more information.

Promotional Design

Overview

Participants use computerized graphic communications layout and design skills in the production of a promotional resource. The resource is based on the annual theme posted on the TSA website under Themes & Problems. Semifinalists demonstrate competency through participation in an on-site technical design challenge.

Eligibility

Three individuals per chapter may register.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
A. Fifteen (15)-minute set-up time before the on-site challenge.
B. Two (2) hours to complete the on-site problem.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants review the annual theme posted on the TSA website under Themes & Problems.
C. Participants prepare the promotional folder while observing the regulations.
D. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
E. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Participants report to the event area at the time and place stated in the conference program for the on-site event.
B. Participants are provided with an on-site publishing problem.

C. Participants will alert the coordinator when they are finished and submit their solution on a USB thumb drive in PDF format.
D. Judges independently assess the entries.

Regulations and Requirements

PRELIMINARY ROUND
A. Students prepare four (4) promotional items. Items that may be considered for the four (4) items might include, but are not limited to: a pamphlet, post card, letter, or business card.
B. All promotional items must follow the below guidelines:
    1. Maximum paper size is 8 1/2"x11"
    2. Preprinted or designed paper may not be used.
    3. Clip art may be used, however, no templates may be used. Any clip art used in the designs must be documented in the Reference section of the portfolio.
    4. If it is determined that the product submitted is a template, the entry will be disqualified.
    5. The content of all items must be appropriate for viewing at the National TSA Conference. Any entry that includes images depicting sex, drugs, tobacco, alcohol, gangs, cults, etc., will be disqualified.
    6. The complete packet should demonstrate a unity of design that repeats throughout the portfolio.
    7. No permission is needed for the use of the TSA logo by affiliated chapters. Refer to the TSA Branding Guide on the TSA website.
C. Documentation Portfolio
    1. Title page with the event title, the team identification number, the conference city and state, and the year; one (1) page
    2. Table of contents; pages as needed
    3. Interpretation of Theme; one (1) page
    4. Description of the items included (this should include item type, screenshot(s) and/or pictures of item, intended audience and purpose, and procedure for creating the item); maximum of four (4) pages
    5. Hardware and Software used; one (1) page
    6. References (Both information and clip art must be documented); one (1) page
    7. Student Copyright Checklist (see Forms Appendix); one (1) page
    8. Photo/Film/Video Consent and Release Forms– if images involving individuals are used and minors

require parental permission (see Photo/ Film/Video Consent and Release Forms in Forms Appendix); pages as needed

9. All entries become the property of ARTSA

ON-SITE SEMIFINAL ROUND

A. Semifinalists supply their own computer hardware with a USB port and software for the on-site portion of the event.
   1. A laptop computer is recommended. The laptop must be fully charged with enough battery for the duration of the semifinal round. A portable power bank (if desired) may be used.
   2. Any semifinalist who does not provide these items will not be allowed to compete in the on-site event.
B. Semifinalists must enter any necessary verification or authentication passwords prior to entering the competitive event area. ARTSA will not provide Internet access or guarantee that a hotspot will work properly.
C. Clip art may be used.
D. No templates may be used.
E. All on-site work is developed, saved as a PDF file on a USB flash drive that is provided by the participant, and submitted using only the participant's identification number.
F. Semifinalists leave the event room only with permission from the event coordinator.
G. The on-site entry should be saved and submitted when the work is completed and/or when time elapses.
H. All entries, including the USB drive, become the property of ARTSA and will not be returned after judging.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
A. The promotional folder cover and contents
B. The documentation portfolio

ON-SITE SEMIFINAL ROUND
The on-site problem.

Refer to the official rating form for more information.

Robotics

Overview

Participants design, build, assemble, document, and test an open- source vehicle according to stated specifications and to meet the challenge of the yearly theme/problem. The annual theme will be posted on the TSA website under Themes & Problems.

Eligibility

Three (3) teams of 2-6 students per chapter may register.

Time Limits

ON-SITE
A.   Ten (10) minutes prior to assigned times teams can set up their assigned pit area.
B.   Thirty (30) minutes session to test and correct any problems. During this time judges will also perform a safety check.
C.   Ten (10) minutes running clock to complete the challenge.
D.   Ten (10) minutes for semifinalist interview

Procedure

PRE-CONFERENCE
A.   Participants review the TSA Honor Statement for Competitive Events found in the General Rules and listed in the individual competitive event rules.
B.   Participants access the annual theme on the TSA website under Themes & Problems.
C.   Participants prepare their design, build, and test their robots.

ON-SITE
A.   Students will arrive at the assigned place and time to:
   a.   Set up their pit areas
   b.   Set up their robot
B.   Entries are reviewed by judges to determine safety.
C.   Safe robots will be given an opportunity to test.
D.   After testing, teams will participate in a ten (10) minute interview
E.   Challenge, and interview scores are combined with testing points to determine the final standings.

Regulations and Requirements

PRE-CONFERENCE
Participants must check for the current year's design challenge specifications on the TSA website under Themes & Problems.

ON-SITE
A.   Pit Area Assignment. The Event Coordinator will provide a designated area for robotics teams to work on and prepare their robots for the challenge.
   1.   Teams are required to bring two welding blankets (4' x 6' minimum) to cover the table and floor in their pit area.
   2.   Teams bring to the pit area for inspection the robot, radio controller(s), chargers, batteries, tools box, power strip, 3-prong electrical extension cord, replacement parts, spare parts, and tools.
   3.   All necessary computers and associated software for the competition.
   4.   All equipment, tools, chargers, and computers are to be arranged for inspection and safety check. The use of tools with combustible fuel sources is prohibited.
   5.   In the pit area, battery chargers and batteries, as they are being charged, must be placed on the fireproof welding blanket in the pit charging area.
B.   When the Robot is out of the competition area, all batteries must be removed. NO EXCEPTIONS.
C.   When a team member enters the competition tent field, only at the direction of the event coordinator may the team members attach the battery cable and turn on their robot. When a robot is outside of the competition tent area, all batteries must be unplugged. NO EXCEPTIONS.
D.   The judge will inspect the robot to ensure safe operation.
E.   When the competition is taking place and when a practice session is under way with a robot in the competition area, all robots in the pit area or outside the pit area must be POWERED OFF. This is an automatic ten (10) point deduction if this occurs.
F.   All batteries will be inspected prior to practice and the competition.
G.   All robots must be driven ONLY in the Competition field.

Robot Specifications

A. The robot must be assembled from open-sourced parts. The robot can be purchased as a kit that can be built, reconfigured, changed, and modified with different components.
B. The robot structure can be made from plastic, wood, 3D printed materials (carbon fiber, PLA plastic, ABS plastic, resin, metal combined plastic or resin). Parts can be purchased commercially and modified.
C. Battery packs must only be commercially available lithium-ion or lithium-ion polymer batteries that are purchased from open-sourced 3rd parties (i.e., Amazon, hobby shops, etc.).
D. The robot will have to navigate through a level course. Depending on the location the surface may change so designs must take that into consideration. Teams may choose to use legs, tracks, wheels, or other methods developed by the team.
E. At the start of the challenge robots must fit in a 16" x 16" x 16" cube. Once the challenge has begun the robot can exceed that size.
F. Robots must have removable part/coverings for internal inspection.
G. A camera may be incorporated into the design if needed to help complete the assigned task.

Evaluation

A. Robot testing
B. Interview

Refer to the official rating form for more information.

Software Development

Overview

Participants apply knowledge of cutting-edge technologies and algorithms to design, implement, test, and document a software development project. The project should have educational or social value. The theme of the current year's software development project will be posted on the TSA website under Themes & Problems.

Eligibility

A.   Three (3) teams of 2-6 students per chapter may register.
B.   Six (6) teams will advance to the semifinal round based on their code.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
The team's code must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE
Up to 10 minutes total for setup, presentation, and questions:
A.   Time begins when students arrive at the judging table.
B.   Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C.   Presentation should be no longer than 7 minutes.
D.   Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE
A.   Participants review the TSA Honor Statement for Competitive Events.
B.   Participants identify a societal need and design a tool (e.g., graphical user interface, dashboard, predictive model, etc.) using software of choice that addresses this need.
C.   Participants prepare for a live demonstration on-site.

ON-SITE
A.   Participants report at the assigned time and place for their presentation/Q&A.

B.   Participants give a live demonstration of the functionality of their project, describe the design process, and discuss the value of the project.
C.   Judges will ask at least one question about the project code that participants will need to answer.
D.   Participants remove their project and equipment from the area at the completion of the presentation/Q&A.
E.   Judges evaluate the presentation and interview.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A.   Participants must submit their executable raw code online by 11:59pm CT on February 18, 2025..
B.   The code must be submitted as a URL leading the judges to either an online repository (i.e. GitHub) or a link to a PDF of all of their code.

ON-SITE SEMIFINAL ROUND
A.   Participants report at the assigned time and place for the presentation/interview.
B.   Participants must provide all necessary hardware to demonstrate their project.
   1.   This may include a laptop computer (operating solely on battery power) with a computer mouse (if desired) or mobile device(s).
   2.   The set-up should not exceed 2' x 2' x 2'.
C.   Arkansas TSA will NOT provide wireless Internet. Students may provide internet access using a hotspot from a mobile device, however, students should have an alternate presentation plan in case access is unavailable.

Evaluation

A.   The quality of work
B.   The overall benefit of the work
C.   The technical skill exhibited in the project
D.   The ability to demonstrate and describe the team's software design process
E.   How well the problem identified is solved by the tool demonstration and relates to the theme
F.   The ability to explain portion of their code in the project questioned by the judges.
G.   Teams are judged on the functionality and originality of their project. At a minimum, presentations should include:
   1.   the design process

2. end-user applications
3. a demonstration
4. information on the design

Refer to the official rating form for more information.

STEM Mass Media

Overview

Participants utilize written and verbal communication skills designed for a mass audience to convey a news story revolving around a designated theme in both a video broadcast (preliminary) and a digital written format (semifinals). Participants must demonstrate a strong understanding of journalism etiquette and common practices of the field. The theme posted on the TSA website under Themes & Problems.

Eligibility

A. Five (5) teams of 2-3 students per chapter may register.
B. Seven (7) teams will advance to the semifinal round based on their informative news broadcast.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

A. All components of the chapter's entry (digital video URL) must be finished, submitted, and accessible via the Internet by 11:59pm CT on February 18, 2025
B. Participants will have a maximum of four (4) minutes to present an informative news broadcast on a scientific headline chosen each year.
C. Submissions that are over four (4) minutes will be disqualified.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND

A. Participants will be given ten (10) minutes to read over a provided briefing of the selected individual that describes the work of a selected business or industry professional and plan interview questions for the individual.
B. Following the briefing, participants will be given the opportunity to engage in a press conference with the chosen individual.
C. Participants are then given twenty-four (24) hours to produce an original digital news article. View examples of <mark>appropriate news stories</mark>.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants access the annual theme posted on the TSA website under Themes & Problems.
C. Participants prepare a news broadcast that presents the information from the annual theme in an informative and creative manner while abiding to the time constraints.
D. Participants submit a URL to the video file by 11:59 pm on February 18, 2025.

ON-SITE SEMIFINAL ROUND

A. Semifinalist teams report at the time and place stated in the conference program.
B. Semifinalists are given ten (10) minutes to read over a provided written brief on the topic for the digital journalism challenge and to prepare interview questions.
C. Following the briefing, all semifinalist teams will enter a press conference room and will be given thirty (30) minutes to interview a selected business or industry professional.
D. Semifinalist teams are given three (3) hours to produce a digital news story detailing the information provided in the briefing and gathered in the interview.
E. Teams submit their solution on a USB thumb drive in PDF format.
F. Judges independently assess the entries.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

A. Video News Story
1. The news broadcast must present the annually chosen headline, summarize key information, and present it in an original manner. The video must:
   i. Include an introduction of the headline.
   ii. Sufficiently summarize content from the news story.
   iii. Explain possible future implications of the headline.
   iv. Not exceed four (4) minutes in length.
   v. Include audio and visual produced solely by the team. Royalty free images, video, and music may be used so long as they are properly

cited and included in the Student Copyright Checklist.

2. References and Resources should be cited in proper Modern Language Association (MLA) style. Sources other than the news story are allowed, but participants must cite them appropriately.

B. Documentation Portfolio: Documentation materials (comprising a "portfolio") are required and must be submitted as a multi- page PDF document with pages in this order:

1. Title page with the event title, Chapter ID, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Student Copyright Checklist (see Forms Appendix).; one (1) page
4. References and Resources; pages as needed
5. Photo/Film/Video Consent and Release Forms – required for all identifiable participants and minors require parental permission (see Photo/ Film/Video Consent and Release in Forms Appendix); pages as needed

C. The URL must point directly to the participant's entry. Entries that require a software download or a request that access be granted will not be judged.

ON-SITE SEMIFINAL ROUND

A. Briefing and Interview
1. Participants arrive at the event area at their designated time.
2. Participants are given ten (10) minutes to be briefed on the interview topic and create questions.
3. Participants have thirty (30) minutes to interview the professional during the press conference
   a. Team members may choose to use an audio recording device.
   b. Only audio is permitted to be collected and used by participants.
   c. No video recording is permitted.
   d. Participants must respect that anything "off the record" may not be included in the final news story.

B. Digital News Story Format
1. Written articles should be the original work of participants and should not exceed five-hundred (500) words in length and be saved in PDF format.If the entry exceeds five-hundred (500) words in length, a rules violation of 20% will be applied.
2. Participants may use any font style or size, but should maintain professionalism.

3. Participants may use any software to design their digital news articles.
4. Students must complete a new Student Copyright Checklist (see Forms Appendix) and save it as a PDF.
5. When applicable, all ideas, text, images, and sounds from other sources must be cited. Copyrighted materials may NOT be used. If including a references and resources page, the page must be saved in PDF format.
6. References and Resources should be cited in proper Modern Language Association (MLA) style; one (1) page. Participants may use outside resources to supplement their article, but they must be cited appropriately.
7. Combine the digital news story, Student Copyright Checklist, and References and Resources PDFs into one (1) single PDF for submission. Save the PDF with the team ID as the name.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
The news broadcast

ON-SITE SEMIFINAL ROUND
The interview and digital news story

Refer to the official rating form for more information.

System Control Technology

Overview

Applying leadership and 21st century skills, participants collaborate 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 leave instructions for judges to operate the device.

Eligibility

Three (3) teams of 3 students per chapter may register.

Time Limits

A. The competition consists of three (3) phases.
1. Phase 1: The team's captain is given thirty (30) minutes to set up the team's equipment.
2. Phase 2: Following the set-up time, teams are given fifteen (15) minutes for problem analysis.
3. Phase 3: Following the problem analysis time, teams are provided two and one-half (2 ½) hours for model development and programming.
B. All students participate in a five (5)-minute interview at the conclusion of their programming.

Procedure

ON-SITE
A. Participants review the [TSA Honor Statement](#) for Competitive Events.
B. Each team selects a team captain prior to the orientation meeting.
C. The team orientation meeting takes place at the beginning of the event at the conference.
D. The captain checks in the team within the set-up time by submitting his/her participant identification number and the team's identification number for the written and model portions of the event.
E. The problem and the inventor's log are presented to teams at the beginning of the fifteen (15)-minute problem analysis session prior to model-building.
F. Teams must complete their description or interpretation of the problem during this time. Teams may conclude their problem analysis before the end of the fifteen (15)-minute period.
G. Each team is given a maximum of two and one-half (2 ½) hours to:
1. Construct a model that simulates realistic industrial processes
2. Program the model
3. Test the solution
4. Describe the program and mechanical features of the model-solution
5. Complete directions
H. When finished, teams save their programs and leave them on-screen in operable form with the ability to be reset.
1. Before leaving the event room, teams demonstrate the operation of the model with judges present.
2. The five (5)-minute interview takes place directly after the demonstration. Judges may ask questions pertaining to the team's design and logical processes.
3. After judges have observed the operation of a team's model, the team leaves the room.
4. The coordinator determines the amount of time permitted for the team's demonstration based on the number of teams and the complexity of the problem.
5. Evaluation of the solutions takes place without the teams present.
I. Judges independently assess the entries, including each team's interview responses.

Regulations and Requirements

A. No reference materials or building cards are allowed.
B. Participants provide their own laptop computer with hardware and software systems. All equipment must be labeled with the team's identification number, advisor name, and advisor contact information.
C. Each team provides pencils and scrap paper along with its own materials kit, which must be appropriate to build a system that can identify, secure, and move objects and that has light and/or sound outputs.
D. Teams design a solution to a problem based on the assumption that every materials kit contains at least:
1. Two (2) optical sensors
2. Two (2) touch sensors
3. Two (2) motors
4. Two (2) audio and two (2) light outputs

5. Gears, wheels, and axles appropriate to build a motorized vehicle and/or conveyor belt
6. Balls, blocks, and pegs that can be used as objects to be moved and manipulated
7. Velcro, tape, clamps, and other materials to secure or move the above objects (balls, blocks, and pegs)
8. No cutting devices may be used during the on-site challenge; materials must retain the original form in which they were brought to the competition.
9. Power tools may not be used.

E. The following definitions are an integral part of the event regulations:
1. Repeatability—the device is programmed to reset automatically.
2. Functional control—the device/model must accomplish the task in an efficient manner and be user friendly.
3. Model-solution—the physical device must simulate the realistic processes used in industry.
4. Conservation of materials—the model reflects the best use of materials to solve the problem, without being overbuilt.

F. Programs must be written completely on-site.
G. Use or modification of any programs written prior to the competition will result in disqualification.
H. An example of a problem for this event is provided below to help students understand and interpret a typical issue common to industry that might be used at a national conference.

A manufacturing company has asked your engineering firm to design an important component in its manufacturing process. The company specializes in the production of cylindrical items. Its manufacturing line is getting "jammed" because multiple cylindrical items are making their way to stations that can handle only one item at a time. Your design must include a "hopper" that will store items as they wait to make their way to a station. When a station is empty, a light should turn on; this will indicate to an operator to press a button that will send one cylinder into the station. After ten (10) seconds, the item will need to be moved to the next hopper, leaving the station empty and signaling the operator to send in another cylinder.

Example Requirements
- A minimum of three (3) cylindrical items of consistent size and shape must be included.
- A hopper must store these items until a button is pushed.
- Only one item can advance when the button is pushed.
- Ten (10) seconds must pass with the item at a station before it is moved to the next hopper.

- A light must signal the operator when the station is empty.
- No additional cylinder can be sent to a station if a cylinder is already in place.

Evaluation

A. The written work
B. The model function
C. The programming structure and efficiency
D. The interview

Refer to the official rating form for more information.

Technology Bowl

Overview

Teams of three demonstrate their individual knowledge of TSA and concepts addressed in the technology content standards by completing a multiple choice test. Semifinalist teams participate in a question/response, head-to-head, Quiz Bowl-style team competition.

Eligibility

A. An unlimited number of teams of 3 students per chapter may register.
B. The 16 teams with the highest average test scores will advance to the semifinal round.
C. Teams that take the test and advance to the semifinalist portion of the event must be comprised of the same three (3) members.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
The one (1)-hour test is administered to all members of the team at the same time. Each member takes the test individually. The testing window is open from 3/3/2025-3/7/2025.

ON-SITE SEMIFINAL ROUND
Teams selected as semifinalists must be available as scheduled for oral competition.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants take the test individually through the JudgePro system any time between Monday, March 3rd at 7:00 am and Friday, March 7th at 6:00 pm.
B. Participants follow the specific regulations and adhere to the directions provided by their proctor.
C. All three team members must test at the same time but will take the exam individually.
D. The sixteen top-scoring teams will qualify as semifinalists.
E. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Semifinalist team members must be the same as those that qualified via the test.

B. The team reports to the oral event area holding room at the time and place stated in the conference program.
C. After a short briefing, advisors leave and the teams remain in the holding room until they are called for competition.
D. When instructed to do so, two (2) teams enter the event area and are seated according to instructions.
E. Teams are paired using the semifinalist teams' bracket.
F. Questions are drawn from a bank of questions pre-conference.
G. If equipment malfunctions, a question that is being considered at that time automatically is eliminated. If equipment malfunctions three (3) times, time is called by the event coordinator to set up back-up equipment. After equipment has been set up and tested, the event continues from the point where it stopped.
H. Once a team is eliminated, it is out of the oral competition except for the round in which the third and fourth positions are determined.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Test will be administered online by a school-affiliated adult.
B. The average of the scores of all three (3) team members determines team ranking.

ON-SITE SEMIFINAL ROUND
A. Sixteen (16) teams, based upon the test results, are selected as semifinalists.
B. All three (3) members of a semifinalist team must be available to participate at the scheduled time for the oral competition portion of the event. All members of the semifinalist team must be the same as the members of the preliminary team.
C. If a team or member is late for participation, that team forfeits and is eliminated from competition.
D. No transmitting or recording devices are permitted to assist in answering a question in the event area.
E. No prompting is permitted.
F. Teams that leave the holding room before being called for competition are eliminated.
G. Teams may visit with other teams in the holding room.
H. No advisors or visitors may enter the holding room once the semifinal round begins.

I. Team members may not enter the oral event area as spectators until after their team has been entirely eliminated from competition.

J. Questions, to include the bonus question, may not be discussed by teams. Team members may only discuss the additional question.

K. The highest test scores of the teams that were eliminated in the initial round will receive 9th and 10th place. The highest test scores of the teams that were eliminated in the second round will be used to determine 5th-8th place.

L. The procedures for reading questions and "buzzing in" are as follows:

1. The team member who buzzes in to answer a question has five (5) seconds to answer the question without discussion.

2. After a full question is read, competing teams have ten (10) seconds to answer without discussion. If neither team buzzes in, the reader moves to the next question.

3. If a team member buzzes in before a question is finished being read, the reader ceases reading and the team member must give the exact answer as printed with the question without discussion. If the answer is incorrect, the reader reads the entire question for the opposing team.

M. A team's score is derived from the total number of correct answers to the questions asked:

1. Twelve (12) questions and an additional question are asked per round; no questions are repeated in another round.

2. For questions 1-11, a correct answer gives the team ten (10) points, and an incorrect answer results in a loss of five (5) points.

3. The 12th question is the bonus question and is worth fifteen (15) points; there is no penalty for an incorrect answer.

4. If the bonus question is not answered correctly, participants are not given an additional question.

5. If a team answers the bonus question correctly, the team is given an additional question to answer. There is no penalty for an incorrect answer. The team may discuss this question. A correct answer for the additional question is worth five (5) points.

6. In case of a tie, three (3) additional questions are asked. This procedure continues until the tie is broken.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
Averaged test scores are used to determine the sixteen (16) semifinalist teams.

ON-SITE SEMIFINAL ROUND
Performance during the oral competition.

Refer to the official rating form for more information.

Technology Problem Solving

Overview

Applying leadership and 21st century skills, participants in problem solving to develop a finite solution to the stated problem provided on-site. Participants work as a team to provide the best solution, which is measured objectively. This event is similar to on-site Destination Imagination or Odyssey of the Mind challenges.

Eligibility

Four (4) teams of 2 students per chapter may register.

Time Limits

A. Fifteen (15) minutes for the team to have their toolbox verified and set up their station.
B. Ninety (90) minutes for the design and construction of the solution are permitted.
C. Fifteen (15) minutes for judges to evaluate and test the solution.

Procedure

ON-SITE CHALLENGE

A. Participants report to the event area at the time and place stated in the conference program.
B. The problem, evaluation criteria, and materials are distributed.
C. Teams are allowed ninety (90) minutes for the construction of a solution.
D. Each solution is tested as soon as possible after the construction phase is completed. (Some problems may require teams to be present for testing.)

Regulations and Requirements

A. All work must be completed in the event area during the time specified for the event.
B. Specific materials related to the on-site problem are provided by TSA. Only the materials issued to each team by the event coordinator may be used in the development of the solution. Note: Exceptions are Adhesives (glue) and painter's tape from each team's tool box.
C. Participants are required to provide their own tool box/container, which must:

1. Include identification (school name, address, and advisor cell phone number)
2. Not exceed twenty (20) inches (508 mm) length x ten (10) inches (254 mm) width x ten (10) inches (254 mm) height.
3. Contains materials limited to the following:
   a. Cutting devices; NONE may be electric
   b. Adhesives
      i. aerosol and electric applicators are not allowed
      ii. a bottle of Uncure or Debonder is recommended but not required
   c. Temporary fastening devices
      i. straight pins
      ii. Clamps
      iii. Tape (only painter's tape may be used as construction material)
   d. A cutting surface that prevents table top marring
   e. Rulers, straightedges, and/or measuring scales.
   f. Marking devices (pens, pencils, etc.)and sharpener(s)
   g. A sheet of wax paper, as large as desired. (Cannot be used in the construction of the design, but can be used to contain adhesive residues)
   h. Safety glasses with side shields (required. Corrective lenses without side shields are not acceptable.)
4. Participants are required to provide and wear safety-approved eyewear for this event.
   a. Safety eyewear shall be worn by participants at event check-in and remain on until leaving the event venue.
   b. Prescription eyewear needs to have side shields to be considered safety eyewear.
   c. Should a team member remove his/her eyewear, s/he will be reminded once to replace it.
   d. If there is a second infraction, the team will be asked to leave the competition.
   e. Sunglasses are not suitable eyewear.
D. Participants without a tool container are not allowed to compete.
E. As teams enter the competition area, each will be given a copy of the Verifications Sheet. The Verifications Sheet is a list of tool box contents as listed in Rules and Regulations C-1 through C-3. If another team is not readily available to

complete the Verification Sheet, a judge will come over to complete the check and form.

F.   Sharing tools between teams is not permitted.

Evaluation

A.   Each team's solution is evaluated objectively.

B.   A finite measure, such as elapsed time, horizontal or vertical distance, and/or strength, is used to determine the best solution.

C.   Ties shall be broken using another quantitative measure that is applicable to the given problem – time of completion, weight, etc..

Refer to the official rating form for more information.

Transportation Modeling

Overview

Using only designated materials and following required specifications, participants apply leadership and 21st century skills in the research, design, and production of a scale model of a vehicle that fits the annual design problem, which will be posted on the National TSA website under Themes & Problems. The entry must take appearance and realism into consideration.

Eligibility

A. Two individuals per chapter may register.
B. Six (6) individuals will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
Up to 10 minutes total for setup, presentation, and questions:
A. Time begins when students arrive at the judging table.
B. Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C. Presentation should be no longer than 3 minutes.
D. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants produce a scale model of a vehicle and supporting display to contain it, focusing on the year's current theme, while observing the outlined regulations.
C. Participants prepare the documentation portfolio and display according to the regulations for this event.
D. All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

ON-SITE SEMIFINAL ROUND
A. Participants check in the following products at the time and place stated in the conference program:
   1. The scale model
   2. The display
   3. The documentation portfolio
B. Entries are evaluated by the judges with neither students nor advisors present based on the following criteria: Judges score the Model and Display criteria
C. Participants report at the time and place stated in the conference program to sign up for an interview time.
D. Judges ask questions pertaining to the research, production of the model, and the design process.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Documentation materials (comprising a "portfolio") are required and must be secured in a clear front report cover.
B. In addition to the 11" x 17" pages noted below, the report cover must include the following single-sided, 8 ½" x 11" pages, in this order:
   1. Title page with the event title, the conference city and state, and the year; a picture of the vehicle may be included as well; one (1) page
   2. Table of contents; pages as needed
   3. Description of designer's vehicle, making note of the scale used, inspiration for the choice and design of the vehicle, research about the history and evolution of the original vehicle, and design elements that set the vehicle apart from others (e.g. fuel used, unique features); one (1) page
   4. Photo examples of current or past vehicles that are similar to the current year's theme or that inspired the entry; one (1) page
   5. Concept drawings/detailed sketches or 3D CAD modeling; maximum of two (2) pages (11" x 17" size)
   6. Photos of the clay, foam, wax, or 3D-printed mock-up; one (1) page
   7. Final technical illustrations (orthographic); maximum two (2) pages (11" x 17" size)
   8. Photos of the production of the model; one page
C. Documentation for this event must not include the name of the student name, chapter, or state.

D. All ideas, text, or images from sources other than the designer must be cited.
E. Cited works should be in MLA format.
F. Pages that are 11" x 17" in size should be folded to fit in the notebook.

ON-SITE SEMIFINAL ROUND
A. Model
1. The scale model must accurately reflect the annual design problem.
2. The model must be designed and produced as original work by the student during the current school year.
3. The model may be made from wood, urethane modeling foam, or it may be 3D-printed.
4. Using commercially produced (store-bought) model vehicle body parts (including hoods, fenders,wings, propellers, frames, etc.) is prohibited.
5. It is permissible to use pre-manufactured parts such as body strengtheners, tires and wheels, plastic canopy, exhausts, mirrors, head and tail lights, windshields, and antennae.
   a. These parts may be attached to or enclosed within the vehicle and may be constructed from materials other than wood, excluding glass or liquids. These parts must be fastened securely.
   b. It is also permissible to use CNC production and 3D printers in the production of the parts of this model.
6. The finished vehicle must fit inside the display space of 16" x 16" x 16".
7. The themed vehicle model must have an actual length that measures at least six inches (6").
8. The designer must choose a scale for the vehicle so that it meets regulations and must be specified in the portfolio.
9. Wheels: Dimensions should be consistent with the scale of the body.
B. Display
1. The model must be presented for evaluation on a display not to exceed 16" tall x 16" deep x 16" long (including the model).
2. The portfolio is not considered part of the display but is placed with it at its side.
3. No electrical access will be provided by TSA for displays.
4. Use of dry cell batteries is permissible, but they must be contained within the stated display space.

The documentation portfolio

ON-SITE SEMIFINAL ROUND
A. The model
B. The display
C. The interview

Refer to the official rating form for more information.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

Video Game Design

Overview

Applying leadership and 21st century skills, participants develop a video game that focuses on the annual theme. The game must be interesting, exciting, visually appealing, and intellectually challenging. The game must have high artistic, educational, and social value. The rating of the game must meet the ESRB rating of E for Everyone.

The game and all required documentation must be submitted online before the conference. Semifinalist teams participate in an on-site interview to demonstrate the knowledge and expertise they gained during the development of the game and answer questions about their process.

The theme of the current year's game will be posted on the National TSA website under Themes & Problems.

Eligibility

A. Four (4) teams of 2-6 students per chapter may register.
B. Sixteen (16) teams will advance to the semifinal round based on their submitted game and documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.
A. The game submitted for evaluation must be greater than three (3) minutes in length of play and must be interactive.
B. A deduction of five (5) points total will be incurred for a game that completes under the three (3)-minute time minimum.
C. The timing of the game segment starts with the first image or sound presented.
D. Games must be playable from the deadline until the end of the ARTSA State Conference.
E. Video game demonstration video must be less than five (minutes). A deduction of five (5) points total will be incurred for a video that goes over the five (5) minute time maximum. The timing of the video starts with the first image or sound presented. The timing of the video ends with the last image or sound.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
Up to 15 minutes total for setup, presentation, and questions:
A. Time begins when students arrive at the judging table.
B. Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C. Presentation should be no longer than 5 minutes.
D. Judges may use the remaining time for questions or for playing the game.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A. Teams design an online video game based on the annual theme posted on the National TSA website under Themes & Problems.
B. The documentation portfolio, video game URL, and video game demonstration video URL must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
C. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
Team members report to the assigned time and place to respond to questions about their documentation, game, the game's purpose, value, design, and rules.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A. Participants review the TSA Honor Statement for Competitive Events.
B. All online game submissions must be a hyperlink to the online game and be accessible for evaluation by February 18, 2025 and must remain accessible until the end of the ARTSA State Conference. Participants may choose the hosting site, but the hyperlink must point directly to the entry. Entries that request access be granted will not be judged. All entries must be compatible using the latest versions of Microsoft Edge, Chrome, and Safari when accessed on a laptop.
C. Entries received, or changes made to submitted entries after this deadline will not be judged.

D. The URL must point to the team's entry. Entries that require a software download, running an executable file (.exe), or a request that access be granted will not be judged.

E. Participants may NOT use any generative artificial intelligence (AI) tools (e.g. ChatGPT, Google Gemini, GitHub Copilot, etc.) in the development of the entry.

F. Video Game:
   1. Must be a hyperlink to the online game.
   2. Must be the original work of the team.
   3. When creating the game, the game must be free of any weapons or violence as stated in the general rules. See [this document](#) from National TSA.
   4. Work that is not created by the team must have proper documentation, showing copyright permissions and/or license for usage in the game segment (See Forms Appendix on the National TSA website).
   5. Game instructions must be clear and understandable.
   6. Judges must be able to play the game to the third (3rd) level.
   7. The game submitted for evaluation must be greater than three (3) minutes in length of play and must be interactive.
   8. A deduction of five (5) points total will be incurred for a game that completes under the three (3)-minute time minimum.
   9. The timing of the game segment starts with the first image or sound presented.
   10. Games must be playable from the submission deadline until the end of the ARTSA State Conference.
   11. Bonus points may be awarded for exceptional game features or content.

G. Video Game Demonstration Video
   1. The demonstration video must include the following components:
      i. A tutorial for how to play the game.
      ii. The video game being played for at least one (1) level.
      iii. Show the code, scripts, files, and game engine used to create the game.
   2. The video must not exceed five (5) minutes.
   3. The video must not include any identifying information other than the team's identification number.
   4. The video needs to be submitted using a URL.

H. Documentation Portfolio: The portfolio must include the following pages in a multi-page PDF document in this order:
   1. Title page with the event title, the title of the video, the conference city and state, and the year, and the team's identification number; one (1) page

2. Purpose and description of the game, the target audience, and a detailed explanation of how to play the game, including a list of control functions; two (2) pages

3. A hand-drawn storyboard, which depicts the design concept of the video game; pages as needed

4. A completed Student Copyright Checklist (see Forms Appendix)

5. Permission letters for the use of copyrighted material; pages as needed (if applicable).

6. A completed Work Log (see Forms Appendix); pages as needed

I. Bonus points may be awarded for exceptional game features or content.

J. Teams will submit the URL to the video game, the URL to the video game demonstration video, and the PDF of the documentation portfolio.

ON-SITE SEMIFINAL ROUND
A. Participants report at the assigned time and place for their presentation/Q&A.
B. Participants describe the design process and discuss the value of the project.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
A. The first three (3) levels of the game
B. The documentation portfolio
C. The video game demonstration video
D. Up to ten (10) bonus points may be added by the judges for exceptional game features, or for content showing exemplary educational and social value.

ON-SITE SEMIFINAL ROUND
The interview

Refer to the official rating form for more information.

Virtual Reality Simulation (VR)

Overview

Virtual Reality (VR) is the representation of complex scientific and/or technical concepts in a visual form. Applying leadership and 21st century skills, participants use video and 3D computer graphics tools and design processes to communicate, inform, analyze, and/or illustrate a given topic, idea, subject, or concept based on the theme posted on the National TSA website under Themes & Problems.

Eligibility

A. Two (2) teams of 1-6 students per chapter may register.
B. Four (4) teams will advance to the semifinal round based on their documentation portfolio and recording scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

All components of the team's documentation portfolio entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.

A. Recording of the visualization must be two to three (2-3) minutes in length.
B. There is a five (5)-point deduction for each fifteen (15) seconds under two (2) minutes or over three (3) minutes.
C. Video of the visualization time length is calculated from the start of the first image or sound to the end of the last image or sound.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND

Up to 20 minutes total for setup, presentation, and questions:

A. Time begins when students arrive at the judging table.
B. Students will have 4 minutes to set up their entry
C. Judges will have up to 6 minutes to view the visualization- 3 minutes per judge. The student presentation should begin when judges are finished viewing the visualization.
D. Presentation should be no longer than 3 minutes.
E. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

A. Participants review the TSA Honor Statement for Competitive Events.
B. Participants concentrate their efforts on creating video and 3D computer graphics that illustrate a given topic.
C. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
D. Entries are reviewed by judges with neither students nor advisors present.
    1. Judges review and score the video of the visualization criteria
    2. Judges score the Documentation Portfolio criteria to determine the top seven (7) semifinalist teams.
E. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND

A. Semifinalist teams report at the assigned time and place for the interview.
B. Each semifinalist team is to present their VR presentation using a VR technology of their choice. Semifinalists are responsible for providing the hardware for the visualization.
C. Semifinalists will answer questions about their portfolio from the judges, discussing the purpose, value, research, and design process.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

A. All entries must be the original work of the participant or team.
    1. Where applicable, all ideas, text, images, and sound from other sources must be cited.
    2. If copyrighted material is used, proper written permission must be included.
    3. Failure to follow this procedure results in disqualification.
B. All entries become the property of TSA and will not be returned after judging.
C. Documentation materials (comprising the "portfolio") are required and must be secured in a clear front report cover with the following single-sided, 8 ½" x 11" pages, in this order:

1. USB flash drive (containing the visualization) in a secure holder or sealed sleeve at the front of the portfolio.
2. Title page with the event title, the conference city and state, and the year; one (1) page
3. Table of contents; pages as needed
4. Purpose of simulation, including the intended audience; one (1) page
5. Hand-sketched storyboard that documents the flow and progression of the visualization with written notes; special effects, audio cues, dialogue, transitions, and scene duration should be incorporated into the storyboard; pages as needed
6. List of references that includes sources for materials, copyrighted and otherwise; pages as needed. (The term "Fair Use" and similar terms are not acceptable citations when creating the list of references.)
7. Permission letters for copyrighted material; pages as needed
8. List of software and hardware used in the development of the visualization; one (1) page
9. Work Log (see Forms Appendix or National TSA website); pages as needed
10. Completed and signed Student Copyright Checklist (see Forms Appendix); one (1) page

D. Recording of the Visualization:
1. Participants may choose any video hosting site (such as an UNLISTED YouTube URL), or a shareable link in cloud storage, as long as the video is located online and accessible for evaluation.
2. If a URL is provided, the URL must point directly to the participant's entry. Entries that require a software download or a request that access be granted will not be judged.
3. If participants opt to not use a video hosting site, the video entry must be submitted in a common video format suitable for viewing with VLC Player, utilizing a Microsoft Windows operating system.
4. The following are NOT permitted:
   a. PowerPoint presentation or PowerPoint slide show
   b. Absolutely no purchased content may be used in any part of the visualization. (Purchased content includes, but is not limited to, texture, models, and royalty free music.)
   c. Web applications that allow purchasing of elements (i.e.: Animaker and Powtoons) are not permitted.
   d. Live action video, including "whiteboard" style entries.

5. Suggested software includes:Maya, 3DS Max, Adobe Animate, Unity, Blender, etc.
6. Each simulation must advance automatically once it has been opened and started by the judges. A splash screen is acceptable, provided the "PLAY" command is easily visible.
7. All work must be included in the portfolio and uploaded to JudgePro
8. The simulation is not to be under two (2) or over three (3) minutes in length.
9. There will be a five (5)-point deduction for each fifteen (15) seconds under the minimum time or for each fifteen (15) seconds over the maximum time.
10. Sound must accompany the simulation. This sound does not include a voiceover recording describing the VR simulation.

ON-SITE SEMIFINAL ROUND
A. Each semifinalist team is to present their VR presentation using a VR technology of their choice. Semifinalists are responsible for providing the hardware for the visualization.
B. Participants must provide all necessary hardware to demonstrate their project.
   a. This may include a laptop computer (operating solely on battery power) with a computer mouse (if desired) or mobile device(s).
   b. The set-up should not exceed 2' x 2' x 2'.
   c. Arkansas TSA will NOT provide wireless Internet. Students may provide internet access using a hotspot from a mobile device, however, students should have an alternate presentation plan in case access is unavailable.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND
A. The Visualization
B. The Portfolio

ON-SITE SEMIFINAL ROUND
A. Presentation of the visualization using participant provided Virtual Reality hardware
B. Interview about documentation and visualization.

Refer to the official rating form for more information

Webmaster

Overview

Participants are required to design, build, and launch a website and present a given topic pertaining to technology. Semifinalists participate in an on-site 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. The topic for the current year will be posted on the National TSA website under Themes & Problems.

Eligibility

A.   Three (3) teams of 2-6 students per chapter may register.
B.   Six (6) teams will advance to the semifinal round based on their website scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND
All components of the team's website entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025. Entries received or changes made to submitted entries after this deadline will not be judged.

Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND
Up to 10 minutes total for setup, presentation, and questions:
A.   Time begins when students arrive at the judging table.
B.   Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
C.   Presentation should be no longer than 3 minutes.
D.   Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND
A.   Participants review the TSA Honor Statement for Competitive Events.
B.   Participants obtain the high school event challenge from the National TSA website under Themes & Problems.
C.   Participants design a website while observing the theme and design requirements.
D.   The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.

E.   Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

ON-SITE SEMIFINAL ROUND
A.   The team reports at the assigned time and place for the interview.
B.   Judges independently assess the interviews.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND
A.   Participants must launch their entry on a web server that can be accessed via the Internet twenty-four (24) hours a day, seven (7) days a week, fifty-two (52) weeks per year.
B.   Each entry must consist of web pages that specifically display the chapter's solution to the high school event theme and problem.
C.   The URL must point to the main page of the team's entry. Entries requiring that access be granted will not be judged.
D.   Changes made after submission will result in disqualification from the event.
E.   The solution to the problem is developed as a series of web pages (with a minimum of three [3] pages and no maximum number of pages) linked under the main solution web page.
   1.   One (1) of the pages must list all sources of information used to create the website.
   2.   All web pages must be completed during the current school year.
   3.   If copyrighted material, such as text, images, or sound from other sources is used, proper written permission must be included/documented on the reference page.
   4.   Participants must submit a completed Student Copyright Checklist (in PDF format) as a link on their website reference page. (See Forms Appendix) Failure to include a Student Copyright Checklist will result in a disqualification.
   5.   Participants also must include a completed Work Log (in PDF format) as a link on their website reference page. (See Forms Appendix)
F.   All entries must be compatible using the latest versions of Microsoft Edge, Firefox, Chrome, etc..
G.   In addition to basic HTML code, the website may contain HTML5 and other state-of-the-art web-based applications (e.g. JavaScript, jQueary, Angular, etc.).
H.   Framework systems, such as Drupal, Joomla, Wordpress, Bootstrap, or other current technologies may be used;

however, pre-built templates and themes for these sites are not permissible. If a framework system is used, a statement affirming that the template or theme used on the framework was built by the team must be posted on an "About" section or page.

I. Template engine websites, tools, and sites that generate HTML from text, markdown, or script files, such as Webs, Wix, Weebly, GitHub, Jekyll, and Replit, are NOT permitted.

Evaluation

PRELIMINARY ROUND

The website

SEMIFINAL ROUND

The interview

Refer to the official rating form for more information.