



Arkansas Middle School Competitive Events Guide

2025

Table of Contents

TSA Honor Statement.....	4
Judge Pro Submission Instructions.....	5
Documentation Format Guidelines.....	7
Biotechnology.....	8
Career Prep.....	10
Challenging Technology Issues.....	11
Chapter Team.....	12
Children's Stories.....	17
Coding.....	19
Community Service Video.....	21
Computer Aided Design (CAD) Foundations.....	23
Construction Challenge.....	25
Cybersecurity.....	27
Data Science and Analytics.....	29
Digital Photography.....	31
Dragster.....	33
Electrical Applications.....	37
Essays on Technology.....	39
Forensic Technology.....	41
Inventions and Innovations.....	43
Leadership Strategies.....	45
Mass Production.....	47
Mechanical Engineering.....	49
Medical Technology.....	51
Microcontroller Design.....	53
Off the Grid.....	55
Prepared Speech.....	57
Problem Solving.....	58
Promotional Marketing.....	60
STEM Animation.....	62
System Control Technology.....	64
Technology Bowl.....	67
Technical Design.....	69
Video Game Design.....	71
Vlogging.....	73
Website Design.....	75
Forms Appendix.....	77

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

All portfolios due February 18, 2025 at 11:59 pm

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*_*Membership ID Number* (ask your advisor for your number)

- Example: *CADEHS_2992299.pdf*

Events with Pre-Submissions and Their Abbreviations

Event name	Abbreviation	Event name	Abbreviation
Biotechnology	BIOMS	Mechanical Engineering	MEMS
Career Prep	CAPMS	Medical Technology	MTMS
Children's Stories	CSMS	Microcontroller Design	MDMS
Community Service Video	CSVMS	Off the Grid	OTGMS
Construction Challenge	CONCMS	Promotional Marketing	PMMS
Data Science & Analytics	DSAMS	STEM Animation	SAMS
Digital Photography	DPMS	Video Game Design	VGDMs
Dragster	DGMS	Vlogging	VLMS
Mass Production	MPMS	Website Design	WEBMS

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 Advisors

You must select the "Export Judges System Student Submission Information" button from your state conference registration to access participant IDs and contest passwords. (<https://www.registermychapter.com/tsa/ar>) You may also elect to upload files and URLs on behalf of students at <https://judgepro.registermychapter.com/org/jpar-tsastate/conf/jpar-tsastate>. Your log-in is the same as you used to register for the state conference.

Preliminary Tests

For the events below, all student teams from the same chapter must take their tests at the same time, but individually. 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. All teams that progress to the semifinal round must be composed of the same set of students that were registered as a team for the test.


Event name	Abbreviation	Event name	Abbreviation
Chapter Team	CHTMS	Electrical Applications	EAMS
Coding	CODMS	Forensic Technology	FTMS
Cybersecurity	CYMS	Technology Bowl	TBMS

Fully and Partially Remote Competitions

For the events below, students will log into <https://judgepro.registermychapter.com/org/jpar-tsastate/conf/jpar-tsastate/student> using their membership ID and the password set up by the chapter advisor in the [Conference Registration System](#). Students can log in and 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	Abbreviation
CAD Foundations	2 hours (120 minutes)	CADMS
Technical Design	Between March 3rd at 12:01 am and March 7th at 11:59pm	TDMS

Documentation Format Guidelines

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

Biotechnology

Overview

Participants conduct research on a contemporary biotechnology issue as it relates to a chosen theme on the TSA website under Themes & Problems. Participants will document their research and make a display. The information gathered may be student performed and researched, or a re-creation or simulation of research performed by the scientific community. If appropriate, a model or prototype depicting some aspect of the issue may be included.

Eligibility

- A. Four (4) teams of 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.

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

ON-SITE SEMIFINAL ROUND

Ten (10) minutes are allowed for the semifinal presentation and interview broken down as follows:

- A. One (1) minute for set-up
- B. Seven (7) minutes for the presentation
- C. Two (2) minutes to respond to questions from judges

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants review the [TSA Honor Statement](#) for Competitive Events.
- B. Participants research the issue using credible sources.
- C. Participants prepare their display and documentation portfolio according to the regulations and requirements.

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 display.

- B. Displays 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

- A. Students must understand the fundamental concepts and principles of the contemporary biotechnology issue they research. Research about the issue should focus on significant impacts (opportunities and risks) on the environment, economy, and society, as well as any important ethical considerations.
- B. Display guidelines:
 - 1. The size of the display may not exceed 15" deep x 3' wide x 4' high.
 - 2. Models or prototypes (optional) must fit within the allotted space.
 - 3. A/C electricity may not be used.
 - 4. If the display and/or model/prototype requires power, they must be powered by dry-cell batteries or photo-voltaic cells.
 - a. The power supply must physically fit within the display 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 display/model/prototype, complete instructions must be provided to judges on how to power up the model/display.
 - 5. If operating instructions are necessary, they must be clearly displayed and should include information about turning on devices, logging in, etc.
- C. Documentation Portfolio:
 - 1. Documentation portfolio is required and must be secured in a clear front report cover with the following single-sided, 8½" x 11" pages, in this order:
 - a. Title page with the event title, the conference city and state, the year, and the team/chapter ID number; one (1) page
 - b. Table of contents; pages as needed

- c. Definition and explanation of the issue as it relates to the theme; one (1) page
 - d. Research base: an explanation of the importance of the issue in contemporary biotechnology today, including possible solutions; maximum three (3) pages
 - e. Support materials such as logs, graphs, sketches, drawings, illustrations, photos, etc.; maximum four (4) pages
 - f. Work Log (see Forms Appendix); pages as needed
 - g. A list of references and credible sources; a minimum of three (3) different types of references must be used; pages as needed
 - h. Work must be original or cited, using 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
 - i. Photo/Film/Video Consent and Release Forms. If the entry contains images of people (minors require parental consent), proof of consent must be included for each person (see Forms Appendix); pages as needed
- D. Once the display set-up time frame has closed, participants may not re-enter the event area.
 - E. Violation of the following will result in disqualification:
 - 1. No viruses, live plants, or animals may be used as a part of the display.
 - 2. No harmful or illegal substances may be displayed.

ON-SITE SEMIFINAL ROUND

- A. Each member should be an active participant in the presentation.
- B. Representatives should reference their display and documentation during the presentation and interview.
- C. Teams may bring and use audio/visual materials or a laptop for their presentation. Projectors and screens are not permitted. Access to power will not be provided.
- D. Time limits:
 - 1. One (1) minute for set-up
 - 2. Seven (7) minutes for presentation
 - 3. Two (2) minutes to respond to questions from judges.
 - 4. A five-(5) point deduction will be incurred for any time infraction.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The documentation portfolio

ON-SITE SEMIFINAL ROUND

- A. The display
- B. The presentation
- C. The interview

Refer to the official rating form for more information.

Career Prep

Overview

Participants conduct research on a technology-related career according to a theme posted on the TSA website under Themes & Problems and prepare a cover letter and a job-specific resume. Semifinalists participate in a mock interview.

Eligibility

- A. Four (4) individuals per chapter may register.
- B. Six (6) individuals will advance to the semifinal round based on their resume and cover letter scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

All components of the individual's resume and cover letter 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

Ten (10) minutes for the mock interview

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 concentrate their efforts conducting research on the selected technology-related career.
- D. Participants prepare a cover letter and a job-specific resume.
- E. The resume and cover letter 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. Semifinalists report at the time and place stated in the conference program to sign up for a mock interview time.
- B. Semifinalists report at the assigned time and place to participate in the mock interview.

- C. Simulating a real interview, semifinalists bring with them an additional printed copy of their job-specific resume to the judges at the time of the interview.
- D. The printed copy of the job-specific resume provided to the judges during the interview will not be returned.
- E. Judges evaluate the interviews.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants enter this event with the following scenario in mind:
 - 1. You have graduated from high school and have the appropriate level of education and training (i.e., college degree, technical school, certification and training, etc.) for an entry-level position that is required for successful employment in your selected career.
 - 2. Your training, education, and other qualifications for the entry-level position are realistic for successful employment in your chosen career and are reflected in your resume and cover letter.
- B. Participants should use fictitious home address and telephone number information when completing the documents, however, correct participant names must be used.
- C. Each participant submits a PDF of (no cover page, table of contents, or release forms):
 - 1. Cover letter:
 - a. Must be typed
 - b. Is limited to one (1) single-sided, 8½" x 11" page
 - c. Must include an opening, body, and conclusion
 - 2. The job-specific resume:
 - a. Must be typed
 - b. Is limited to two (2) single-sided, 8½" x 11" pages

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

- A. The resume and cover letter

ON-SITE SEMIFINAL ROUND

- A. The interview

Refer to the official rating form for more information.

Challenging Technology Issues

Overview

Participants collaborate to prepare and deliver a debate- style presentation with participants explaining opposing views of a current technology issue. The annual topics will be posted on the National TSA website under Themes & Problems.

Eligibility

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

Time Limits

- A. Fifteen (15) minutes is allowed to prepare.
- B. A minimum of two (2) minutes and a maximum of four (4) minutes is allowed to present.

Procedure

ON-SITE

- A. Both members must report with their materials to the preparation room at the assigned time.
- B. Topic selection for each round:
 - 1. The coordinator randomly draws one (1) topic from those posted on the TSA website under Themes & Problems
 - 2. The topic is written on index cards and given to each team in the preparation room.
- C. At the end of the fifteen (15)-minute preparation time, each team is escorted to the presentation room where the team presents opposing views of the selected issue.

Regulations and Requirements

- A. Participants report to the preparation room at the assigned presentation time.
- B. Materials:
 - 1. Non-electronic reference materials may be brought for use while in the preparation room.
 - 2. No other form of assistance is allowed.
 - 3. Participants must provide their own pencils or pens for this event.
 - 4. Participants may provide note cards, if desired.
- C. Note cards:
 - 1. Note cards may be used during the presentation.

- 2. The use of note cards may result in score deductions if they detract from the effectiveness of the presentation.

D. Event debate:

- 1. The team presents on one (1) topic randomly selected from the topics posted on the National TSA website under Themes & Problems
- 2. Teams may use first names ONLY and no other identifying information during their presentation.
- 3. One team member states the topic prior to the first speaker speaking in the presentation.
- 4. After stating the selected topic, the presentation time begins once a team member begins.
- 5. The team presents opposing views of the selected issue in debate style.
- 6. Teams may use the following suggested format to present opposing views: (see also [this video](#) for an example)

Team Member #1

- Introduction (pro)
- Position (pro)
- Conclusion (pro)

Team Member #2

- Introduction (con)
- Position (con)
- Conclusion (con)

- 7. A timekeeper notifies a presenting team thirty (30) seconds before the end of the four (4)-minute time limit by holding up a “30-seconds remaining” card.
- 8. Time is called at four (4) minutes, at which time the presentation must stop. No overtime speaking is allowed.

Evaluation

The debate.

Refer to the official rating form for more information.

Chapter Team

Overview

Participants take a written parliamentary procedures test in order to qualify for the semifinals. Applying leadership and 21st century skills, 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 six (6) individuals per chapter may register.
- B. Team members do not have to be elected officers of the local chapter.
- C. Teams that take the written test and advance to the semifinalist portion of the event must be composed of 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. Teams have fifteen (15) minutes with no penalty, and up to seventeen (17) minutes with penalty (see Time over chart) to complete a presentation that incorporates the set-up time, items of business, and required parliamentary actions.
- 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:
 - 1. A list of three (3) parliamentary actions are provided by the event coordinator and given to each team for the oral demonstration.
 - 2. Each team then closes the meeting according to the prescribed procedure.
 - 3. 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’s members.
 - 4. The secretary has five (5) additional minutes to complete the minutes of the meeting.

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. Materials provided to teams:
 - 1. A set consisting of secretary's minutes, copy of Chapter Team Official Minutes form for secretary's minutes, a treasurer's report, a copy of the TSA creed, and a list of parliamentary actions.
 - 2. Paper, six (6) pens, a calculator, and six (6) 3" x 5" note cards.
- B. Optional materials: A timepiece and/or a non-programmable calculator may be used by a team.
- C. Room setup:
 - 1. Officer symbols and gavel (only) are placed on a long table with the United States flag positioned to the right of the president's rostrum (if available) and the host state flag to the left.
 - 2. The president's rostrum (if available) 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 score.
- D. The semifinal portion of the event includes:
 - 1. The call to order
 - 2. The pledge to the flag
 - 3. Roll call
 - 4. Order of business
 - 5. Closing ceremony
- E. Semifinal time limits and rules:
 - 1. Teams have a time limit of fifteen (15) minutes to complete a presentation that incorporates the set-up time, items of business, and required parliamentary actions.
 - 2. Official timing will begin when the materials are given to the president and will stop at the team's final gavel to end the meeting.
 - 3. Five (5) points will be deducted for every thirty (30)-second interval over the allotted time (see TIME LIMITS).
 - 4. Bonus points will be awarded for additional motions and parliamentary actions by the officers, other than the president.
 - 5. At the conclusion of the oral presentation, each team secretary has five (5) minutes to write a copy of chapter minutes that will be submitted to an evaluator. The coordinator will begin timing the five

(5) minutes when the secretary is seated at the area designated for writing of the minutes.

- 6. All materials given to team members, and the chapter minutes recorded during the presentation, must be handed to the evaluators before the team leaves the room.
- 7. No reference should be made to a team's school, chapter name, city, or state. Exception: The state name on a TSA patch is acceptable.

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.

CHAPTER OPENING AND CLOSING CEREMONIES

OPENING CEREMONY

- A. At the prescribed time for meetings, the president assumes his/her position behind the rostrum in the front center of the room.
- B. Other officers are seated to the left and right of the president. They are seated in this order from stage left to right: vice president, treasurer, secretary, president, reporter, and sergeant-at-arms.

HOST STATE BANNER (OPTIONAL)

U.S. FLAG SGT.-AT-ARMS REPORTER PRESIDENT SECRETARY TREASURER VICE PRES. STATE FLAG

(OFFICERS FACING AUDIENCE)

AUDIENCE

- President: (raps gavel twice) The meeting will please come to order. Mr./Ms. Sergeant-at-Arms, are all the officers in their places?
- Sergeant-at-Arms: They are, Mr./Ms. President.
- President: (raps three [3] times for assembly to rise) Mr./Ms. Sergeant-at-Arms, please lead the assembly in the Pledge to the Flag of the United States of America.
- Sergeant-at-Arms: (leads Pledge to the Flag)
- President: (raps once and assembly is seated) Mr./Ms. Secretary, will you please call the roll.
- Secretary: Mr./Ms. Sergeant-at-Arms.
- Sergeant-at-Arms Present. The symbol of my office is the “hearty handshake” (officer points to symbol), and it is my responsibility to see that the assembly is comfortable and properly welcomed. It is also my duty to serve as doorkeeper for this organization.
- Secretary: Mr./Ms. Reporter.
- Reporter: Present. The symbol of my office is the beacon tower (officer points to symbol), and it is my duty to see that our school, community, and national association have a complete report of our organization’s activities.
- Secretary: Mr./Ms. President.
- President: Present. The symbol of my office is the gavel (officer points to symbol). The duties vested in me by my office are to preside at all regular and special meetings of this organization and to promote cooperation in carrying out the activities and work of our organization. Mr./Ms. Secretary.
- Secretary: Present. The symbol of my office is the pen (officer points to symbol), and it is my responsibility to see that accurate and proper records are kept of all business and correspondence of this association. Mr./Ms. Treasurer.



- Treasurer: Present. The symbol of my office is a balanced budget (officer points to symbol), and it is the duty of my office to keep accurate records of all funds and see that our financial obligations are met promptly.
- Secretary: Mr./Ms. Vice-President.
- Vice President: Present. The symbol of my office is a star (officer points to symbol), and it is the duty of my office to see that we always have a strong membership, a good work program, and are alert to the welfare of our chapter.
- Secretary: Mr./Ms. President, all officers are present and in their place.
- President: Mr./Ms. Sergeant-at-Arms, do we have guests present?
- Sergeant-at-Arms: If so, introduce guest(s); if not, state the following: No, Mr./Ms. President.
- President: Mr./Ms. Secretary, we are ready to transact our business.
- Teams dispose of the assigned business following the suggested order of business.

CLOSING CEREMONY

- President: (raps three [3] times; assembly rises) Mr./Ms. Secretary, will you please (read) or (lead us in) the TSA Creed.
- Secretary: (recites the TSA Creed; when presented at state and national competitions, the creed may be presented in some more original method.)
- President: Will the assembly repeat the TSA Motto after me. (Motto is spoken.) Does anyone know of any reason why this assembly should not adjourn? If not, I will entertain a motion to adjourn. (following motion to adjourn, a second, and a vote) I now declare this meeting adjourned until a special meeting is called or until our next regular meeting (raps once with gavel).

SUGGESTED ORDER OF BUSINESS FOR CHAPTER MEETINGS

1. The president calls the meeting to order with opening ceremonies.
2. Roll call is taken and a quorum is established.
3. The secretary reads the minutes of the preceding meeting. Any necessary corrections and/or additions are made and the minutes are approved as read or corrected.
4. The treasurer's report is received as read and placed on file, subject to audit.
5. The chairperson calls for committee and officer reports as necessary. If a committee has no report, let the committee so state.
6. Unfinished business is addressed.
7. New business is addressed.
8. The program, if any, is held. The chairperson presides with the assistance of the program chairperson or the committee chairperson.
9. Make announcements.
10. Adjournment with closing ceremonies.

CHAPTER TEAM OFFICIAL MINUTES

Team ID number _____

Date _____

Location of conference _____

Participants may use the back of this page, if necessary.

Secretary's signature _____ Date _____

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

- A. Two (2) teams of 1-6 students per chapter may register.
- B. Five (5) 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 20 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 reading when setup is complete.
- C. Reading should be no longer than 12 minutes.
- D. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants review the annual design challenge found on the National TSA website under Themes & Problems.
- B. 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.).
- C. Participants develop a high-quality children's storybook with illustrations.

- D. Participants record their design process in a documentation portfolio.
- E. Participants "field test" their storybook and document outcomes and findings.

ON-SITE SEMIFINAL ROUND

- A. Participants report at the assigned time and place for the reading and interview.
- B. If applicable, teams decide who their reader is. The reader will read the story to the judges. All members participate in the interview process following the reading of the story.
- C. 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.
 16. Publishing rights remain with the authors and illustrators.
- B. Documentation Portfolio:**
1. Documentation portfolio is required and must be secured in a clear front report cover with the following single-sided, 8 ½" x 11" pages, in this order:
 - a. Title page with the title of the story, the event title, the conference city and state, the year, the team/individual chapter ID number, and the word count (number of words comprising the story's narrative); one (1) page
 - b. Table of contents; pages as needed
 - c. Purpose of story; one (1) page, to include:
 1. Story's intent
 2. Summary of storyline and theme
 3. Intended audience (age, gender, demographics, and special disabilities, if any)
 4. Word count – Number of words comprising the story's narrative
 - d. Photographic verification of book construction and binding; pages as needed
 - e. Field Tests Summary. A "field test" is a reading of the storybook to a group of children in the intended target age range; pages as needed
 1. A minimum of two (2) field tests must be conducted.
 2. Participants must document each field test with a summary paragraph that details the outcomes and findings.
 3. Each summary paragraph must include the date, time, and location of the field test.
 4. Each "field test" must be signed off by the chapter advisor.
 - f. 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.
 - g. 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.
 - h. A list of tools, software (if any), and techniques used in the creation of the physical storybook and illustrations; pages as needed.
 - i. References/research sources; one (1) page.
 - j. Work Log (see Forms Appendix); pages as needed
 - k. Photo/Film/Video Consent and Release Forms. If the entry contains images of people (minors require parental consent), proof of consent must be included (see Forms Appendix); pages as needed

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The portfolio

ON-SITE SEMIFINAL ROUND

- A. The reading
- B. The interview
- C. The physical storybook

Refer to the official rating form for more information.

Coding

Overview

Teams respond to an annual coding-related design challenge by developing a set of software programs that will accurately address onsite problems in a specified and limited amount of time. The specific languages will be posted on the National TSA website under Themes & Problems. Completed solutions are objectively measured using predetermined test cases to determine if the stated problem has been adequately and efficiently solved.

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

- A. Up to fifteen (15) minutes is allowed for students to set up their on-site workstation.
- B. Up to two (2) hours is allowed for the design and construction of the solution.

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. Both team members must test at the same time but will take the exam individually.
- D. The 10 teams with the highest average test scores will advance to the semifinal round.

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

ON-SITE SEMIFINAL ROUND

- A. Participants bring their own computer systems to the event area at the time and place stated in the conference program.
- B. Participants are given a problem, evaluation criteria, materials, and allotted two (2) hours for the design and construction of the solution.
- C. 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.
- 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.
- J. Participants are presented with a series of coding problems that must be completed on-site at the conference.

- K. 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.

Community Service Video

Overview

Participants create and submit a video that depicts their local TSA chapter's involvement with a community service project (e.g., American Cancer Society) of their choice.

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 video scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

- A. All components of the team's documentation portfolio and video 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
- B. The video cannot exceed a duration of more than two (2) minutes.
- C. A deduction of five (5) points will be applied to videos exceeding the time limit.
- D. There is no minimum length restriction.
- E. The video will be timed from the first sound or picture to the final sound or picture.

ON-SITE SEMIFINAL ROUND

Ten (10) minutes are allowed for the semifinal presentation and interview broken down as follows:

- A. Seven (7) minutes for the presentation
- B. Three (3) minutes to respond to questions from judges

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Teams identify a community service project.
- B. Teams prepare a video observing the requirements set forth under the Regulations and Requirements section of this event.
- C. Participants submit the community service video URL and the documentation PDF by 11:59 pm CST on February 18, 2025.

ON-SITE SEMIFINAL ROUND

- A. The semifinalist team or individual may report to the event area for the interview.
- B. Semifinalist teams will have a chance to answer questions about their entry, the video's purpose, value, design, and development process.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. 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. Entries received, or changes made to submitted entries after the deadline will not be judged.
 - 4. The year must be clearly illustrated at the beginning of the video.
 - 5. This entry is exempt from General Rule D.9., which states that a chapter name must not appear in an entry.
 - 6. All video footage, graphics, special effects, and audio clips must be originally created/filmed by the participants.
 - 7. No commercial or copyrighted material may be used, regardless of copyright fair use policy.
- B. Documentation:
 - 1. Participants will submit documentation online via a single PDF file containing all of the requirements below. Documentation must be submitted as one PDF file (not multiple files). Combine the Student Copyright Checklist with all Photo/Film/Video Consent and Release Forms into one PDF file.
 - a. Participants must complete the Student Copyright Checklist (see Forms Appendix) and save it as a PDF to be submitted electronically with the entry online; one (1) page
 - b. Photo/Film/Video Consent and Release Forms. If the entry contains images of people (minors require parental consent), proof of consent must be included for each person in the video (see Forms Appendix); pages as needed

ON-SITE SEMIFINAL ROUND

- A. Semifinalist teams will have a chance to make a presentation and answer questions about their entry, the video's purpose, value, design, and development process.
- B. Ten (10) minutes are allowed for the semifinal presentation and interview broken down as follows:
 - 1. Seven (7) minutes for the presentation
 - 2. Three (3) minutes to respond to questions from the judges

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

- A. The video
- B. Documentation

ON-SITE SEMIFINAL ROUND

The presentation and interview

Refer to the official rating form for more information.

Computer Aided Design (CAD)

Foundations

Overview

Participants demonstrate their understanding of CAD fundamentals as they create a two-dimensional (2D) graphic representation of an engineering part or object. For example, participants may be given an isometric drawing and would be expected to generate the required 2D views, complete with dimensions.

Eligibility

- A. Five (5) individuals per chapter may register.
- B. Seven (7) individuals will advance to the semifinal round based on their CAD scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

Two (2) 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 two (2)- 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 two (2)-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 two hours of opening the scenario; submissions automatically lock after two hours and no extensions can be granted.
- H. Judges will evaluate the PDF submissions and select seven (7) 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)

ON-SITE SEMIFINAL ROUND

The interview

Refer to the official rating form for more information.

Construction Challenge

Overview

Participants submit a scale model, display, and portfolio that documents the design idea, to fulfill an identified community need related to construction. Semifinalists demonstrate expertise in construction design through a presentation and an interview.

Eligibility

- A. Three (3) teams of 2-6 students per chapter may register.
- B. Nine (9) teams will advance to the semifinal round based on their documentation portfolio scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

- A. 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
- B. The project must have been in progress or completed during the current school year.

ON-SITE SEMIFINAL ROUND

- A. Ten (10) minutes are allowed for the semifinal presentation and interview broken down as follows:
 - 1. Seven (7) minutes for the presentation
 - 2. Three (3) minutes to respond to questions from judges

Procedure

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. No more than two (2) team representatives report at the time and place stated in the conference program to check in:
 - 1. The scale model/prototype
 - 2. The display

- 3. The documentation portfolio
- B. Each team reports at the assigned time and place to participate in a brief presentation, discuss their chapter's community project, and respond to questions.
- C. Participants pick up their entries from the display area at the time specified in the conference program.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. The chapter must address the impact of the construction project on the community. "Community" is defined as within an area near the school.
- B. Chapters must be involved in the majority of stages of development of the project, from planning to construction (where appropriate), by experiencing as many facets of the undertaking as possible.
- C. The history of long-term or ongoing projects that began in a previous year or that continue beyond the current school year may be included with the documentation, however, the scale model/prototype and portfolio must be based on current year activities.
- D. Model/Prototype and Display:
 - 1. The materials that make up the scale model/ prototype must be student-constructed and assembled.
 - 2. The display may occupy a space no more than 15" deep x 3' wide x 4' high.
 - 3. A/C electricity may not be used.
 - 4. If the display and/or model/prototype requires power, they must be powered by dry-cell batteries or photo-voltaic cells.
 - a. The power supply must physically fit within the display 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/prototype/display, complete instructions must be provided to judges on how to power up the model/display.
 - d. If operating instructions are necessary, they must be clearly displayed and should include information about turning on devices, logging in, etc.
- E. Once the display set-up time frame has closed, participants may not re-enter the event area.

- F. Identifying information must not be placed on the scale model/prototype, display, or in the portfolio for the purpose of revealing the TSA chapter, however, the entry is excluded from General Rule D.9, and the chapter name or other identifying information may appear in the entry documentation portfolio but only in media clippings, photographs, etc.
- G. Documentation portfolio is 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 conference city and state, the year, and the team/chapter ID number; one (1) page
 2. Table of contents; pages as needed
 3. Work Log (see Forms Appendix); pages as needed
 4. Project journal, letters from community members that verify chapter involvement, pictures of the project, and other relevant materials that detail the project from inception to completion; pages as needed
 5. Photo timeline of project photos (before, during, and after the project), with dates and team members involved; pages as needed
 6. Identification of community need and community impact through research provided on the community need for the project; pages as needed
 7. Strategies and recommendations of the team that address the community need; up to three (3) examples; pages as needed
 8. References must follow 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.
 9. Photo/Film/Video Consent and Release Forms. If the entry contains images of people (minors require parental consent), proof of consent must be included for each person (see Forms Appendix); pages as needed

ON-SITE SEMIFINAL ROUND

- A. No more than two (2) team representatives set up the entry and submit the portfolio for judging.
- B. The team is allowed a maximum of ten (10) minutes to present and respond to interview questions.

Evaluation

PRELIMINARY ROUND

The documentation portfolio

SEMIFINAL ROUND

- A. The model/prototype
- B. The display
- C. The presentation and interview

Refer to the official rating form for more information.

Cybersecurity

Overview

Participants complete a cybersecurity test covering general cybersecurity vocabulary and knowledge needed to execute tasks commonly performed by all levels of cybersecurity professionals. Applying leadership and 21st century skills, participants prepare a presentation addressing a specific cybersecurity issue and present to a group of hypothetical corporate board members (i.e., judges). Participants must explain the importance of cybersecurity and why it is essential that the organization invest in such measures. Participants will answer questions from the judges following the presentation. The problem statement will be posted on the TSA website under Themes & Problems.

Eligibility

- A. An unlimited number of individuals per chapter may register.
- B. The 12 individuals with the highest average test scores will advance to the semifinal round.
- C. Eligible individuals will be announced by email and on the ARTSA website by March 18, 2025.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

The one (1)-hour test is administered to participants. 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

Five (5) minutes are allowed for the presentation and interview broken down as follows:

- A. Three (3) minutes for the presentation
- B. Two (2) minutes to respond to questions from judges

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. The 12 contestants with the highest test scores will advance to the semifinal round.
- D. Semifinalists will be announced via email and the ARTSA website on March 18, 2025.

PRE-CONFERENCE SEMIFINAL ROUND

- A. Participants access the annual problem on the TSA website under Themes & Problems.
- B. Participants prepare a presentation according to the regulations.

ON-SITE SEMIFINAL ROUND

- A. Semifinalists report at the assigned time and place stated in the conference program for the presentation.
- B. Semifinalists present their presentation to the judges and answer questions.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

The test will be administered online by a school-affiliated adult.

ON-SITE SEMIFINAL ROUND

- A. The Presentation
 - 1. Any participant that is late or fails to arrive to present at the designated time results in an automatic disqualification.
 - 2. Participants enter this event with the current year's problem which can be found on the Competition Updates page on the TSA website.
 - 3. No identifying information other than the participant's identification number and conference title and year are permitted.
 - 4. Participants shall focus on the following in their presentation:
 - a. Identify and explain the security problem.
 - b. Explain how physical and digital security measures protect electronic information.
 - c. Use real-world data metrics and situations to support the claim.
 - d. Explain trade-offs when selecting and implementing cybersecurity recommendations.
 - 5. Participants must use fictitious company names if needed for both the company in which the participant

is “employed,” as well as the fictitious company offering cybersecurity services. Real names may not be used.

6. Participants may use the presentation platform of their choice, such as PowerPoint, Prezi or Google Slides, however, audio may not be used.
 - a. Participants need to provide their own laptop. AC power will not be provided.
 - b. Each laptop device needs an HDMI connection or HDMI adapter.
7. The participant must orally present key points to the corporate board members.
8. No commercial or copyrighted material may be used.
9. Highlight your proposal with creative visual elements (e.g., graphics, photos, titles, transitions) to actively engage the audience. Participants may use images "labeled for reuse," but must properly cite the source (refer to the General Rules).
10. Photo/Film/Video Consent and Release Forms. If the entry contains images of people (minors require parental consent), proof of consent must be included for each person (see Forms Appendix).
11. Staple or paperclip the citation page (if necessary) and any Photo/Film/Video Consent and Release Forms (if necessary) together and present them to the corporate board members (judges) prior to the presentation.
12. Timing: Participants are allowed five (5) minutes for the presentation, broken down as follows:
 - a. Three (3) minutes to present solution to the theme/problem
 - b. Two (2) minutes to answer questions
 - c. A timepiece may be used by the participants, if desired
 - d. One (1) point per ten (10)-second interval is deducted for speaking over three (3) minutes. Time commences when the presenter begins speaking.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The test

ON-SITE SEMIFINAL ROUND

The presentation

Refer to the official rating form for more information.

Data Science and Analytics

Overview

Data science is a broad term for implementing a variety of methods to find connections between data to gain insightful knowledge about a particular issue. Data analytics is an even more focused way of sorting through collected data to make predictions.

Applying leadership and 21st century skills, participants conduct research on the annual topic posted on the TSA website under Themes & Problems, document their research in a supporting portfolio and create a display. Semifinalist teams participate in a timed, on-site challenge in which they must review specific data sets, provide insights, make predictions, and present their findings.

Eligibility

- A. Three (3) teams of 2-3 students per chapter may register.
- B. Ten (10) teams will advance to the semifinal round based on their documentation portfolio and their digital scientific poster.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

All components of the team's documentation portfolio entry and pictures/screenshots/PDFs of the display 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. Thirty (30) minutes are allowed for data analysis and synthesis.
- B. Five (5) minutes are allowed to present.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants access the annual topic on the TSA website under Themes & Problems.
- B. Participants research the issue using credible resources, analyze the data, and draw conclusions.

- C. Participants create their documentation and display according to the regulations.
- D. All components of the team's documentation portfolio entry and pictures/screenshots/PDFs of the display *clear enough to be evaluated* must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025

ON-SITE SEMIFINAL ROUND

- A. Semifinalist teams report at the assigned time and place stated in the conference program for the on-site challenge.
- B. Semifinalist teams are allowed thirty (30) minutes to review the data set in the holding room.
- C. Late participants will not receive extra time to analyze the data.
- D. After thirty (30) minutes have elapsed, semifinalists are given no more than five (5) minutes to present their analysis to the judges.

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 statistical graphs.
 - 3. Synthesis of the collected data in terms of factors influencing the issue, societal impacts, and ethical considerations.
- B. Display:
 - 1. The display shall include, at a minimum, the following major key points:
 - a. The team identification number and the event name in the upper-right hand corner of the display. No other identifying information shall be included.
 - b. The definition and explanation of the issue.
 - c. An explanation of the importance of the issue including problems, impact, and possible solutions or recommendations (if applicable).
 - d. Emphasis shall be placed on the graphs, which should depict not only the issue, but any causal factors.
 - 2. Highlight your display with creative visual elements (e.g., photos, titles) to actively engage the audience. Participants may use images "labeled for reuse," but

- must properly cite the source(s) on the display (refer to the General Rules).
3. No commercial or copyrighted material may be used. If the entry contains images of people, proof of consent must be provided for each person in the presentation.
 - a. Minors require parental consent
 - b. Use the Photo/Film/Video Consent and Release form (see Forms Appendix) for any individuals included in the presentation.
 - c. Participants must attach the consent forms within the documentation portfolio
 4. May be three-dimensional as long as it does not exceed the size limitations of 15" deep x 3' wide x 4' high
 5. Any digital display (e.g. iPad) must fit within the allotted display space. All power must be switched off once the team has completed set-up. If teams want judges to activate any electronic device in their display, complete instructions must be clearly displayed and should include information about turning on devices, logging in, etc.
 6. A/C electricity may not be used.
 7. If the display requires power, it must be powered by dry-cell batteries or photo-voltaic cells.
 8. Any power source used must fit within the display dimensions.
 9. No viruses, live plants, or animals may be used as a part of the display.
 10. No harmful or illegal substances may be displayed.
- C. Documentation Portfolio:
1. The documentation portfolio shall include all supporting material such as research notes, links to articles, sketches, illustrations, etc.
 2. Documentation portfolio is required and must be secured in a clear front report cover with the following single-sided, 8 ½" x 11" pages, in this order:
 - a. Title page that includes the event title, the conference city and state, the year, and the team/chapter ID number; one (1) page
 - b. Table of contents; pages as needed
 - c. Supporting materials; maximum of ten (10) pages
 - d. A summary of the issue, one (1) page
 - e. Analysis of the data collected; pages as needed
 - f. A summary of findings and recommendation, one (1) page
 - g. A list of references and credible resources; a minimum of three (3) different types of resources must be used; pages as needed
 - h. Work Log (see Forms Appendix); pages as needed

- i. Photo/Film/Video Consent and Release Forms. If the entry contains images of people on the display or in the documentation portfolio (minors require parental consent), proof of consent must be included for each person (see Forms Appendix); pages as needed

ON-SITE SEMIFINAL ROUND

- A. Semifinalists do *not* need to bring their display.
- B. The on-site challenge must include all team members.
- C. Participants report at the assigned time and place stated in the conference program and are ushered into the holding room.
- D. Once in the holding room participants are given the data set and have thirty (30) minutes to analyze the data and draw conclusions.
- E. Data will be provided to participants as a .csv file and be given to participants on a USB drive to transfer to their personal devices for analysis.
- F. Participants are permitted to present for up to five (5) minutes on their analysis, conclusions, and/or recommendations.
- G. Participants are permitted to:
 1. Use their laptops, including Microsoft Excel or a similar tool, to conduct their research during this time, however, Internet will not be provided. AC electricity will not be provided to participants; laptops must be charged and be able to run for the entirety of the event.
 2. Take notes on the index cards (to be provided by TSA)
 3. Reference their notes during the on-site challenge presentation to the judges
- H. Participants are NOT permitted to:
 1. Use their phones during the presentation to the judges
 2. Contact outside sources for assistance while in the holding room.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

- A. The documentation portfolio
- B. The display

ON-SITE SEMIFINAL ROUND

- A. Analysis of the on-site challenge
- B. The presentation

Refer to the official rating form for more information.

Digital Photography

Overview

Participants produce a digital photographic portfolio that represents or relates to a chosen theme posted on the National TSA website under Themes & Problems. Semifinalists demonstrate competency in the production of a series of digital photographs taken at the conference site within the time limit specified and complete a presentation/interview.

Eligibility

- A. Three (3) individuals per chapter may register.
- B. Thirteen (13) 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

- A. One-half (½) hour is allowed to set up equipment and receive the on-site challenge and procedures.
- B. Two (2) hours are allowed to complete the on-site challenge.
- C. Up to 10 minutes total for setup, presentation, and questions:
 - 1. Time begins when students arrive at the judging table.
 - 2. Students will have 1 minute to set up their entry and should begin the presentation when setup is complete.
 - 3. Presentation should be no longer than 3 minutes.
 - 4. Judges may use the remaining time for questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants access the annual theme on the National TSA website under Themes & Problems.
- B. Participants produce a photographic portfolio while observing regulations.
- C. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.

- D. A separate slideshow presentation of just the images should be created to use during the semifinal interview.

ON-SITE SEMIFINAL ROUND

- A. Participants report at the time and place stated in the conference program for the on-site challenge with all of the required equipment and software noted in the Regulations and Requirements section.
- B. Participants are allowed one-half (½) hour to set up and test their equipment.
- C. At the end of the set-up time, the event coordinator presents the on-site challenge and related procedure to the semifinalists.
- D. The challenge involves students taking photographs addressing a specific theme, or documenting a current aspect of the conference, such as a competitive event, a special focus of the site, a general session, etc.
- E. Participants are responsible for supplying USB flash drives for the on-site challenge.
- F. Semifinalists are given two (2) hours to complete the challenge, including taking their pictures, and editing or enhancing them. Editing must take place in the event room.
- G. The semifinalists save the final photos in a multimedia presentation on the USB flash drives, which will become property of ARTSA.
- H. Participants report at the assigned time and place stated in the conference program for the presentation/interview.
- I. Judges assess the entries and the interview responses.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. Photographs included in the portfolio must be unified.
- B. Participants are solely responsible for all aspects of the competition, including taking the photographs, editing, and completing the portfolio.
- C. The digital photographic portfolio must be submitted as a multi-page PDF document with pages in this order:
 - 1. Cover page – must include the event title, the conference city and state, the year, and the participant's ID number; one (1) page.
 - 2. 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.

3. Photos:
 - i. Submission: the original photo and the edited version should appear together on the same page and must be labeled “ORIGINAL” and “EDITED.”
 - ii. On the same page or on the page immediately following the Original and Edited photos should be a description of the two photos. The description should include the photo's metadata (camera make/model, f/stop, exposure time, ISO speed, focal length) and include a synopsis of how the original photo was edited/ changed, and how the theme is addressed by both the style and content of the edited photo.
 - iii. Enhancements and/or editing should be done ethically and in a way that makes a better photograph.
 - iv. The order of the photos in the portfolio should be as follows: Original photo and edited photo on the same page, description on the same or following page, then repeat for the remaining photos.
4. Resource page – must include a list of resources used to complete the portfolio, including camera, software, hardware, etc. Students must also cite any external resources used, if applicable. These resources 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
5. Consent and Release Forms – Recognizable individuals pictured in the images 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). All necessary consent forms must be included at the end of the multi page PDF album. Students may note in their photo description when a consent form has been deemed necessary and is included in the portfolio; pages as needed (if needed). NOTE: If consent forms are deemed necessary by the judges and have not been included by the competitor, the entry will not be judged.
- D. The entry must be finished, submitted, and accessible to JudgePro by 11:59 pm CT on February 18, 2025.
- E. Entries received, or changes made to submitted entries after this deadline will not be judged.

ON-SITE SEMIFINAL ROUND

- A. Participants are required to provide their own equipment, including:
 1. One (1) laptop. Laptop must be fully charged with enough battery for the duration of the semifinal round.
 2. One (1) computer mouse (if desired)
 3. Portable power bank (if desired)
 4. A method to transfer the images to the computer (such as a media reader) for editing, and to the USB drives.
 5. USB drive(s); The USB flash drives and the images contained therein become property of ARTSA and will not be returned. The images may be used in future ARTSA promotional materials and publications.
 6. Tripod
 7. DSLR or dedicated “point-and shoot” camera, with a timer feature and/or remote trigger as well as the ability to be mounted to a tripod; cell phones are permitted as cameras
 8. Semifinalists may bring optional related accessories (i.e., filters, reflectors, extra batteries, etc.) to use in the on-site challenge.
- B. Participants do NOT have access to electrical power/outlets during the event.
- C. No internet access will be provided during the competition. Participants are welcome to bring and use personal hotspots.
- D. When preparing their multimedia presentation, semifinalists must include the following information for each photograph:
 1. Camera make (e.g., Nikon, Canon, Panasonic, Sony, etc.)
 2. Camera model (e.g., CoolPix, Rebel, 5D, etc.)
 3. F-stop at which each photograph was taken
 4. Exposure time of each photograph
 5. ISO value, aperture (f-stop number), and shutter speed
 6. How the photo relates to the on-site challenge
 7. Any software or apps used to edit the photograph
- E. All multimedia presentations of images must be saved to a USB drive and will be given to judges after their presentation/interview.

Evaluation

PRELIMINARY ROUND

The digital photographic portfolio

SEMIFINAL ROUND

- A. The multimedia presentation
 - B. The presentation/interview
- Refer to the official rating form for more information.

Dragster

Overview

Individuals design, model, and build a CO²- 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 and parts list 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 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 and upload the documentation to JudgePro no later than 11:59 pm CT on February 18, 2025.

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

ON-SITE PRELIMINARY ROUND

Each entry must be submitted at check-in with a full-size metric drawing with materials list of the completed vehicle.

- A. A two (2)-view (top and side) full scale technical drawing with metric dimensions must be made on 11" x 17" drawing paper.
- B. The drawing must be developed using standard engineering practices and procedures; it may be produced using traditional drafting methods or CAD.
- C. The title block includes only the student's identification number, which is assigned at conference registration and is placed on the entry and drawing during check-in.

- D. A one (1) letter sized page with the Materials List must be printed on or attached to the back of the technical drawing
- E. The letter-sized parts and materials list must be printed on or fixed to the back of the technical drawing.

SEMIFINAL ROUND

- A. Semifinalists arrive at the time and place in the conference program for the interview.
- B. The Race:
 - 1. The official distance between the start line and the finish line on the race track is twenty (20) meters.
 - 2. Dragsters that do not meet the following specifications and tolerances are disqualified from the race
 - 3. No repair or maintenance is allowed after the entries have been submitted.
 - a. Any vehicle damaged during the race is evaluated by the event coordinator to determine whether or not the vehicle is allowed to race again.
 - b. 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 participant entering the vehicle; this is the only reason a participant is allowed to touch his/her vehicle after registration.
 - c. Undamaged wheels that come off during the event may be replaced as determined by the event coordinator.
 - 4. All CO₂ cartridges for the race are provided by ARTSA.

Evaluation

PRELIMINARY ROUND

Sixteen (16) qualifying entries

SEMIFINAL ROUND

Dragster construction, interview, and race points

Refer to the official rating form for more information.

Dragster body		
	MINIMUM	MAXIMUM
1. The Dragster body must be one (1) piece of any species of wood or can be from plastics, including urethane modeling foam. It may be produced using traditional hand tools, power tool, CNC Milling and 3D printing, following applicable safety rules. <ol style="list-style-type: none"> Two (2) or more like or unlike pieces of material glued together are not considered one (1)-piece Any type of lamination will result in disqualification. 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. Fiberglass, vinyl wrap, and shrink wrap are considered body strengtheners and cannot be used on the car body for any reason. 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	*(2024) – 220mm	230mm
* denotes specific school year requirement	*(2025) – 205mm	215mm
3. Body height with wheels		75mm
4. Body mass (completed car without CO ₂)	*(2024) – 45g	65g
* denotes specific school year requirement	*(2025) – 60g	70g
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 only be measured at the lowest point of the side surfaces of the wood car body at the axle hole.)	5mm	10mm
3. Axle hole from front and rear of car	10mm	100mm
4. Wheelbase (axle distance apart at farthest points)	105mm	Not specified
5. Bearings, bushings and lubricants may be used.		
6. Glue may only 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 (CO ₂ 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 CO ₂ cartridge. <ul style="list-style-type: none"> a. A minimum of 5mm thickness around the entire power plant hole must be maintained on the dragster for safety. b. There should be no paint inside the CO₂ cartridge hole. 		
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

Eye screws		
	MINIMUM	MAXIMUM
1. Dragsters must have no more than two (2) eye screws per car that meet tolerances. <ul style="list-style-type: none"> a. Eye screws must not make contact with the racing surface. b. The track string must pass through both eye screws, which are located on the center line of the bottom of the car. c. Eye screws may be glued in place with CA glue or epoxy. d. It is the responsibility of the car designer/engineer to see that the eye screw holes are tightly closed to prevent the track string from slipping out. e. Any adjustments must be done prior to event check-in. 		
2. Inside diameter	3mm	5mm
3. Distance apart (at farthest points)	150mm	Not Specified

Wheels		
	MINIMUM	MAXIMUM
1. A dragster must have exactly four (4) wheels, each of which separately must meet regulations in items in 2 and 3 below. <ul style="list-style-type: none"> a. All four (4) wheels must touch the racing surface at the same time. b. All wheels must roll. c. Wheels must be made entirely from plastic. d. Dimensions must be consistent for the full circumference of the wheel. 		
2. Wheel diameter	30mm	40mm
3. Wheel width*	2mm	18mm
* Width is determined by the continuous point of contact between the wheel and track or flat surface.		

Electrical Applications

Overview

Participants take a test of basic electrical and electronic theory to qualify as semifinalists. Applying leadership and 21st century skills, semifinalists assemble a specific circuit from a schematic diagram using their own kit and make required electrical measurements. Semifinalists explain their solution during an interview.

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

- A. Semifinalists are allotted one (1) hour to solve the circuit problem.
- B. Upon completion of the circuit, or at the end of the time limit, semifinalists are questioned about their solution in an interview.

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. Both team members must test at the same time but will take the exam individually.
- D. The 10 teams with the highest average test scores will advance to the semifinal round.

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

ON-SITE

- A. The same two (2) team members compete in the semifinal round, should the team qualify.
- B. Participants report to the event area at the time stated in the conference program.
- C. Participants build a circuit from the provided schematic diagram and make electronic measurements with their multimeter at the designated positions in the circuit, within the time limit, using their own kit.
- D. The semifinalist teams are interviewed before they leave.

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. All work must be completed in the event area during the time specified for the event.
- B. Semifinalists must bring a toolkit with identification (school name, address, and advisor cell phone number). Each toolkit must contain all required materials to fabricate the solution. The following is a suggested list of materials:
 - 1. (Minimum) 1.375" x 3.25" solderless circuit breadboard 10 x 30 pin positions
 - 2. One (1) 9-volt battery with snap-on battery connector
 - 3. One (1) speaker (wires pre-soldered)
 - 4. Two (2) LEDs
 - 5. Twelve (12) connector wires
 - 6. Pushbutton switch (wires pre-soldered)
 - 7. One (1) photocell
 - 8. One (1) potentiometer
 - 9. One (1) IN4003 diode
 - 10. One (1) IC555 integrated circuit
 - 11. One (1) 2N3906 transistor
 - 12. One (1) 2N3904 transistor
 - 13. Resistors (minimum of one [1] each, ohms): 10, 10K, 47, 100, 220, 1K, 2.2K, 3.3K, 6.8K, 16K, 33K, 120K, 330, 470K
 - 14. Capacitors (in microfarads): .01, .1, 10, 100, 1000

- 15. S106B1 SCR
- 16. Wire strippers
- 17. Standard 4-function calculator (scientific calculators will not be permitted)
- 18. Digital multimeter
- C. Paper to complete on-site calculations is provided by TSA.
- D. All other equipment necessary to solve the on-site problem is provided by ARTSA
- E. Semifinalists remain with their circuit solution until the judges have completed the interview.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The average of the team members' scores is factored into the final total score.

ON-SITE SEMIFINAL ROUND

The accuracy and degree of completion of the circuit problem in the allotted time, and the exit interview, determine the final standings.

Refer to the official rating form for more information.

Essays on Technology

Overview

Participants conduct research on specified subtopics of a broader technological area. The topic and subtopics will be posted on the TSA website under Themes & Problems. Participants apply the knowledge and resources gained through their research to write a comprehensive essay on the one (1) subtopic that is designated on-site.

Eligibility

Three (3) individuals per chapter may register.

Time Limits

ON-SITE

Two (2) hours for the on-site detailed outline and corresponding note challenge and to complete the on-site essay challenge.

Procedure

PRE-CONFERENCE

- A. In preparation for the event, participants research the topic and related subtopics (refer to Themes & Problems on the TSA website).
- B. Each participant shall record key points of their research using a 3" x 5" note card for each subtopic.
- C. Note cards (1 per subtopic) may be used for the detailed outline round of the on-site challenge at the conference.

ON-SITE

- A. Participants report to the event area at the time and place stated in the conference program with their prepared note cards.
- B. One (1) of the subtopics is randomly selected.
- C. Timing begins after the subtopic is announced.
- D. Using the information on the prepared 3" x 5" note cards, participants must draft the detailed outline.
- E. Participants will write an essay on the subtopic as submitted, using their detailed outline.
- F. Participants will be given one (1) hour to write an essay on the subtopic.
- G. Each participant turns in an essay not to exceed five (5) pages.
- H. Judges independently review entries.

Regulations and Requirements

PRE-CONFERENCE

Participants must handwrite notes on one side of the 3" x 5" note cards (one [1] for each subtopic), and the sources and references will be handwritten on the other side of the note card.

1. Participants are not permitted to enter the competition area with computer-generated notes, notes that are not handwritten, or notes not contained on 3" x 5" note cards.
2. The outline on the note card may contain a thesis statement.
3. The bulleted outline for note cards must follow the required format below:

OUTLINE FORMAT FOR NOTE CARDS

TITLE OF ESSAY

A. INTRODUCTION

1. Thesis statement (may be written in sentence form)

B. BODY

1. Point A
 - a. Supporting detail
 - b. Supporting detail
2. Point B
 - a. Supporting detail
 - b. Supporting detail
3. Point C
 - a. Supporting detail
 - b. Supporting detail

C. CONCLUSION

ON- SITE DETAILED OUTLINE

- A. All research material brought into the event area must be handwritten on the note cards.
- B. Each participant may also bring a hard copy dictionary and/or a thesaurus to the event (no electronic formats permitted).
- C. Participants are responsible for bringing a blue or black ink pen to the event site, which may be "erasable."
- D. Participants may also bring correcting fluid or correction tape to the site.
- E. Each participant will be provided with lined paper.

- F. Detailed outline guidelines (to be submitted for judging):
 - 1. Length is limited to two (2) handwritten pages, one (1) side of the paper only, single-spaced.
 - 2. Each submitted outline page must have the participant entry number only (i.e., no other identifying information) written in the upper right-hand corner of each page.
 - 3. Participants are required to follow the outline displayed below.
 - 4. Requirements must include:
 - a. Introductory paragraph
 - b. Details for a body (of the essay)
 - c. Concluding paragraph
 - d. All details are to be in sentence form.
- G. With the outline, participants must turn in a one (1) page bibliography (written on one [1] side of the paper only, using proper MLA bibliography format), and the relevant note card.
- H. The relevant note card is to have the participant entry number written in the upper right-hand corner.
- I. Only participants are allowed in the event area.
- J. Once a participant finishes their detailed outline, they may begin working on their written essay.

ON-SITE ESSAY WRITING

- A. Participants are allowed to bring correcting fluid or correction tape, and a hard-copy dictionary and/or thesaurus to the event (no electronic formats will be permitted).
- B. Participants are responsible for bringing a blue or black ink pen to the event site. The pen may be “erasable.”
- C. Each participant will receive his/her outline, bibliography, and note card submitted from the preliminary round.
- D. Each essay must have the participant’s entry number only written in the upper right-hand corner of each page submitted.
- E. The essay must be no more than five (5) pages, written on one (1) side of the paper only, and double-spaced. The list of references (bibliography) is not included in the five (5) pages.
- F. With the essay, participants must turn in:
 - 1. A one (1)-page bibliography (written on one [1] side of the paper only, using proper MLA bibliography format)
 - 2. The outline from the preliminary round
 - 3. The relevant note card
- G. All essays, outlines, and note cards become the property of ARTSA.

Evaluation

ON-SITE

- A. The detailed outline
- B. The essay

Refer to the official rating form for more information.

DETAILED OUTLINE FORMAT PRELIMINARY ROUND

TITLE OF ESSAY

A. INTRODUCTORY PARAGRAPH

B. BODY

- 1.
 - a.
 - i.
 - ii.
 - b.
 - i.
 - ii.
- 2.
 - a.
 - i.
 - ii.
 - b.
 - i.
 - ii.
- 3.
 - a.
 - i.
 - ii.
 - b.
 - i.
 - ii.

C. CONCLUDING PARAGRAPH

Forensic Technology

Overview

Participants take a test of basic forensic science theory to qualify as semifinalists. Semifinalists demonstrate expertise of forensic science concepts through the application of techniques within a limited time frame. Each year, three (3) skills or techniques will be posted on the TSA website under Themes & Problems. Students will need to be familiar with and able to demonstrate all three (3) skills. During the semifinalist portion, the students will demonstrate one (1) skill to the judges. Students will be notified of the presentation topic upon completion of the written test.

Eligibility

- A. An unlimited number of 2-person teams per chapter may register.
- B. The 6 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

- A. Five (5) minutes is allowed to set up supplies and prepare the demonstration. Semifinalists are required to bring their own supplies.
- B. Ten (10) minutes is allowed to demonstrate the selected skill and answer questions from the judges.
 - 1. Seven (7) minutes for the demonstration
 - 2. Three (3) minutes for the interview.
 - 3. Three (3) minutes is allowed to clean the demonstration area.

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. Both team members must test at the same time but will take the exam individually.
- D. The 6 teams with the highest average test scores will advance to the semifinal round.
- E. 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 skills challenge.
- B. Each team is given a copy of the skill they are required to demonstrate upon completion of their written test.
 - 1. Participants use the allotted time to set up necessary materials and prepare the demonstration.
 - 2. Participants demonstrate the selected skill in the application of using proper forensic science techniques, and to respond to questions.
 - 3. Participants clean the demonstration area and pack necessary supplies for the next competitors.

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. No reference may be made concerning the name of the team, the team members, or their school. Team members write their team identification number on any material used to demonstrate their skill.
- B. No reference materials may be used during this event.
- C. No observers are allowed in the event or preparation rooms during the event.
- D. Participants are responsible for bringing all of the necessary supplies to the semifinalist demonstration. ARTSA will not provide any supplies.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The score of both team members will be averaged to determine ranking.

ON-SITE/SEMIFINALS

The demonstration/interview

Refer to the official rating form for more information.

Inventions and Innovations

Overview

Participants research and brainstorm the need for an invention or innovation of a device, system, or process related to the current year's theme, which will be posted on the TSA website under Themes & Problems. Team entries must include documentation of the team's work through a static display and a model/prototype. Semifinalists give a "sales pitch" presentation to a panel of judges (who act as venture capital investors) to persuade the panel to invest in their invention/innovation.

Eligibility

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

Time Limits

Ten (10) minutes are allowed for the semifinal presentation and interview broken down as follows:

- A. One (1) minute for set-up
- B. Seven (7) minutes for the presentation
- C. Two (2) minutes to respond to questions from judges

Procedure

PRE-CONFERENCE

- A. Participants access the annual theme on the TSA website under Themes & Problems.
- B. Participants concentrate their efforts in researching and identifying a need that has the potential for the invention/innovation of a device, system, or process.
- C. Participants design a scaled model/prototype, which may be a conceptual model or a working model of a device, system, or process.
- D. Participants document the design through the creation of a static display.
- E. Participants prepare a "sales pitch" presentation that further explains the invention/innovation to a panel of judges acting as venture capitalists.

ON-SITE

- A. No more than two (2) team representatives report at the time and place stated in the conference program to check in:
 - 1. The static display
 - 2. The model/prototype

- B. Entries are evaluated by the judges with neither students nor advisors present based on the following criteria:
 - 1. Judges score the static display criteria
 - 2. Judges score the Documentation Portfolio criteria
- C. Semifinalist team representatives make a "sales pitch" presentation to the judges (venture capitalists).
- D. The "sales pitch" presentation begins on the timekeeper's signal.
- E. Team representatives pick-up their entry from the display area at the time and place stated in the conference program.

Regulations and Requirements

PRE-CONFERENCE

- A. The invention/innovation entry (of a device, system, or process) must be the result of an identified need.
- B. Static display:
 - 1. The size of the display (including the model/prototype) for the invention/innovation may not exceed 15" deep x 3' wide x 4' high.
 - 2. Content:
 - a. Invention name
 - b. Description of the invention/innovation
 - c. Explanation of the necessity
 - d. Description of brainstorming process
 - e. Drawings or illustrations of the invention/innovation. If the entry contains images of people, proof of consent but be included on the back of the display. Images of minors require parental consent (see Forms Appendix)
 - f. Process of building the model/prototype
 - 3. A/C electricity may not be used.
 - 4. If the display and/or model/prototype requires power, they must be powered by dry-cell batteries or photo-voltaic cells.
 - a. The power supply must physically fit within the display 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/prototype/display, complete instructions must be provided to judges on how to power up the model/display.
 - 5. The display must be presented as if it were in a product showcase geared toward an audience of venture capitalists.

- C. Model/Prototype:
 - 1. The model/prototype may be a scaled version of the invention/innovation idea.
 - 2. The idea should be realistic and have the potential to be workable.
 - 3. The following options may be used to provide direct current electrical power for the model/prototype when it is demonstrated during the semifinalist presentation. No other electrical source may be used.
 - a. Up to 4 “C” or “D” batteries, OR
 - b. Up to 8 “AA” or “AAA” batteries
- D. Once the display set-up time frame has closed, participants may not re-enter the event area.
- E. Violation of the following will result in disqualification:
 - 1. No viruses, live plants, or animals may be used as part of the display.
 - 2. No harmful or illegal substances may be displayed

ON-SITE

- A. No more than two (2) team representatives report at the time and place stated in the conference program to check in:
 - 1. The static display
 - 2. The model/prototype
- B. Entries are independently reviewed by judges.
- C. The team reports at the time and place stated in the conference program for the “sales pitch” presentation.
- D. Using leadership and/or 21st century skills, the goal of the team is to convince the judges that the invention/innovation is needed and has real-world potential.
- E. Representatives may reference their display and documentation during the presentation and interview.
- F. Teams may bring and use audio/visual materials or a laptop for their presentation. AC power will not be provided or available. Projectors and screens are not permitted.
- G. Time limits:
 - 1. One (1) minute for set-up
 - 2. Seven (7) minutes for presentation
 - 3. Two (2) minutes to respond to questions from judges
 - 4. A five-(5) point deduction will be incurred for any time infraction.

Evaluation

ON-SITE SEMIFINAL ROUND

- A. The static display
- B. The model/prototype
- C. The “sales pitch” presentation

Refer to the official rating form for more information.

Leadership Strategies

Overview

Teams prepare a presentation based on a selected challenge that TSA chapter officers might encounter, within a specified, limited amount of time.

Eligibility

Three (3) teams of three (3) individuals per chapter may participate.

Time Limits

ON-SITE

- A. Presentations must be between three and five (3-5) minutes.
- B. Teams will be penalized one (1) point per ten (10) seconds for speaking over five (5) minutes or under three (3) minutes.
- C. Time commences when the first team member begins talking and concludes at the end of the presentation.

Procedure

ON-SITE SEMIFINAL ROUND

- A. Participants report at the time and place stated in the conference program, five (5) minutes prior to the assigned presentation time.
- B. At the team's assigned time, one (1) team member draws three (3) cards – each containing one (1) topic– from a box and selects one (1) topic from the three (3) on which the team presents. The cards with the unused topics are returned to the box.
- C. After selecting a topic, the first team enters a preparation room separate from the presentation room and is given fifteen (15) minutes to prepare the team presentation. Multiple teams may be in the preparation room together during the rotation period due to conference logistics.
- D. The event coordinator introduces each team by team identification number only in the order of the sign-up time.
- E. As participants present, the timekeeper visually notifies the team when it has reached the three minutes minimum time by holding up a 5" x 7" notecard with "3:00" displayed.
- F. After speaking, the team returns the topic card to the judges.
- G. Judges independently score each presentation according to the criteria on the official rating form.

Regulations and Requirements

ON-SITE

- A. No reference may be made concerning the name of the team, the team members, or their school.
- B. Each presentation must be the result of the team's own effort.
- C. No reference materials or devices may be brought to the preparation room.
- D. Any notes for the presentation must be written during the fifteen (15)-minute preparation period.
 - 1. Each team is provided a maximum of three (3) 3" x 5" blank notecards.
 - 2. Although teams are permitted to use notes when speaking, it should be noted that deductions in scoring may be made for this practice if it detracts from the effectiveness of the presentation.
- E. Observers are allowed as long as they adhere to the following rules:
 - 1. No talking or gesturing is permitted.
 - 2. Observers are NOT allowed to enter or leave during a presentation.
 - 3. THERE IS NO APPLAUSE UNTIL THE PRESENTATION HAS CONCLUDED.
- F. Teams are penalized one (1) point per ten (10) seconds for speaking over five (5) minutes or under three (3) minutes.
- G. Each member of a team must participate in the presentation.

Sample Topic Questions:

Topics that might be encountered by teams in this event may include but are not limited to:

- 1. A newly created school ruling does not allow for school related travel out of state. How will your chapter approach a solution to the problem?
- 2. A mandated curriculum severely limits opportunities for students to select and schedule elective courses such as technology education. What can be done to resolve this issue?
- 3. Plans to upgrade athletic facilities within the school district severely limit previously approved plans to fund technology education with needed maintenance and equipment expenditures. What will you do in an attempt to resolve this dilemma?

4. A school policy that pertains to fundraising activity now requires such funds to become part of a general pool to be distributed at the discretion of the school administrator regardless of who or how they were raised. What will be your plan of action to reverse this decision?
5. Conflict exists within the local chapter related to members who are not engaged within their committee assignments. If the problems are not resolved, the health of the chapter will deteriorate. How do you plan to solve this problem?
6. It is assumed that our school's technology and engineering program will be strengthened through the support of local businesses and industries. Currently, there is little participation of these groups. How might we change this?

Evaluation

ON-SITE

The presentation

Refer to the official rating form for more information.

Mass Production

Overview

Participants manufacture a marketable product addressing the annual theme, noted on the TSA website under Themes & Problems. Teams create three (3) identical copies of a product to demonstrate their skill and knowledge pertaining to the mass production process, however, the official entry is comprised of a documentation portfolio and only one (1) prototype. Semifinalists present their product and participate in an interview.

Eligibility

Three (3) teams of 3-6 students 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

Ten (10) minutes are allowed for the semifinal presentation and interview broken down as follows:

- A. One (1) minute for set-up
- B. Seven (7) minutes for the presentation
- C. Two (2) minutes to respond to questions from judges

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants access the annual theme on the TSA website under Themes & Problems.
- B. Participants research designs for products and develop a prototype that can be replicated for three (3) identical copies of the product. Only one (1) prototype will be submitted on-site as a part of the entry.
- C. Create working drawings and devise production plan flow chart(s).
- D. Tool up for production.
- E. Conduct a trial run and evaluate the process for effectiveness and efficiency.

- F. Manufacture several products using line production techniques.
- G. Document the process with photographic images of the additional copies of the prototype as part of the portfolio submission.
- H. Document the team project with a photo timeline.
- I. 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. Semifinalist teams participate in the on-site presentation and interview.
- B. Team representatives 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. Documentation Portfolio:
 - 1. Documentation portfolio is required and must be secured in a clear front report cover with the following single-sided, 8 ½" x 11" pages, in this order.
 - a. Title page with the event title, the product name, the conference city and state, the year, and the team/chapter ID number; one (1) page
 - b. Table of contents; pages as needed
 - c. Description of the product: a written description of the product, instructions for its use, the overall advantages and usefulness of the product, its audience, and related safety considerations; one (1) page
 - d. Design efforts: sketches, pictures, magazine clippings, and other graphic design elements used in the development of the final design; maximum three (3) pages
 - e. Drawings:
 - i. An orthographic drawing in three (3) views with dimensions to aid production; one (1) page
 - ii. An assembly drawing or a pictorial drawing with labels; one (1) page
 - f. Materials list: a list of materials (including sizes and market value) used to fabricate the product; each item or sub-assembly should be identified as

- student produced, standard stock item, or purchased subassembly; one (1) page
- g. Tools and machines list: a list of any hand, power, and stationary tools and/or machines used to fabricate the product; one (1) page
- h. Production plan: a production outline or flow chart; pages as needed.
- i. Photo/Film/Video Consent and Release Forms. If the entry contains images of people (minors require parental consent), proof of consent must be included for each person (see Forms Appendix); pages as needed
- j. Work Log (see Forms Appendix); pages as needed
- 2. All documentation must be contained in the portfolio.
- 3. Tabs or dividers may be used between the sections of the portfolio and are not counted as pages.
- 4. The documentation portfolio will be collected by the coordinator during event submission and placed with the prototypes following all submissions.
- B. Prototype of Product:
 - 1. The prototype must be displayed in such a way that it does not exceed 15" deep x 24" wide x 24" high. The documentation portfolio will be collected by the coordinator and placed with the prototypes following all submissions.
 - 2. Craftsmanship:
 - a. The product must display good craftsmanship.
 - b. The product should show creative thinking by the students.
 - 3. Appropriate materials: The product must use the materials in a manner that adds value to the product.
 - 4. Efficiency of design: The product must address the identified consumer need, and use the materials effectively.
 - 5. Aesthetics: The product must be pleasing to view.
 - 6. Ergonomics: The product must be easy to use.
 - 7. Appropriate solution: The product must function in a manner that solves the identified problem.
 - 8. Creativity: The product must display an original solution to the identified consumer need.
 - 9. ONLY the documentation contained within the portfolio and the prototype may be submitted for judging.
- B. Entries are independently reviewed by judges with neither students nor advisors present.
- C. Once the display set-up time frame has closed, participants may not re-enter the event area.
- D. The goal of the team is to demonstrate their skill and knowledge pertaining to the mass production process.
- E. Each member should be an active participant in the presentation.
- F. Teams may reference their documentation portfolio and prototype during the presentation and interview.
- G. Teams may bring and use audio/visual materials or a laptop for their presentation. AC power will not be provided or available. Projectors and screens are not permitted.
- H. Time limits:
 - 1. One (1) minute for set-up
 - 2. Seven (7) minutes for presentation
 - 3. Two (2) minutes to respond to questions from judges
 - 4. A five-(5) point deduction will be incurred for any time infraction.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The documentation portfolio

ON-SITE SEMIFINAL ROUND

- A. The prototype
- B. The presentation/interview

Refer to the official rating form for more information.

ON-SITE SEMIFINAL ROUND

- A. No more than two (2) team representatives report at the time and place stated in the conference program to check in:
 - 1. One (1) prototype
 - 2. The documentation portfolio

Mechanical Engineering

Overview

Participants design and build a mechanical device to solve the problem statement for the identified theme. Through device functionality, presentation, and documentation, the team members demonstrate their knowledge of mechanical engineering and the application of their solution. The challenge is to make a vehicle that meets the stated Vehicle Specifications and comes to rest exactly the required distance in the fastest time for the specific conference year. The current year's problem statement will be posted on the TSA website under Themes & Problems.

Eligibility

- A. Three (3) teams of two to three (2-3) students per chapter may register.
- B. Thirteen (13) teams 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.

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

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Teams must identify and understand the use of subsystems within a larger system
- B. Teams must research and identify an engineering design process chosen that influenced the design of the vehicle
- C. Participants review and implement the annual problem statement posted on the TSA website under Themes & Problems.
- D. The documentation portfolio, including a materials list, a ½ scale technical drawing on letter-sized (8 ½" x 11") that shows the side and top views of the finished product, and a written description detailing the process, 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. Participant teams report to the place indicated in the conference program at least five (5) minutes ahead of their time slot. There will be a testing area to prep the vehicle prior to their assigned time.
- B. Once called, participants must have their vehicles ready to run and take the vehicle to the start line
- C. On the "start" command by the conference staff, all vehicles will be set off toward the target line
- D. The timing of the vehicle will begin when any part of the vehicle passes over the start line and will end when the vehicle comes to a complete stop
- E. The distance from the target line will be measured in centimeters, from the point of the vehicle that first passed the start line to the finish line or target. The measurement will be taken after the vehicle comes to a complete stop on its own.
- F. Cars in an assigned time slot will be set on the start line at their assigned time and will run one at a time in a staggered start. The vehicle must steer itself and remain in the lane in which it started. If a car leaves its assigned lane and makes contact with another car, its run is not scored, and the car that was struck by the car that left its lane will be allowed to run again.
- G. Each car has two attempts. The best attempt is recorded.
- H. Each team has a short two (2)-minute exit interview with the judges

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. Documentation portfolio is required and must be secured 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 conference city and state, the year, and the team/chapter ID number; one (1) page
 - 2. Table of contents; pages as needed
 - 3. Identification and explanation of the engineering design process used to produce the vehicle; maximum six (6) pages
 - 4. Materials list; one (1) page
 - 5. A ½ scale technical drawing on A size paper which includes a top and right-side view of the finished product; one (1) page

6. Written description of the design and construction of the solution which includes photographic verification; pages as needed
- B. The vehicle must meet the following requirements:
 1. The overall dimensions of the Mouse Trap Car cannot exceed 20" L x 10" W x 12" H. The measurement is taken while the car is in resting position.
 2. The vehicle MUST be powered by a single VICTOR brand mousetrap measuring 3 7/8" L x 1 3/4" W. The mousetrap spring CANNOT BE ALTERED to add power in any way.
 3. The vehicle must have three (3) or four (4) wheels that make contact with the race surface.
 4. Vehicles MUST be self-starting. The vehicle may not start with additional potential and/or kinetic energy other than what is stored in the mouse trap spring. Rubber bands or any other elastic materials may not be used in the launch mechanism.
 5. The vehicle must steer itself and may not receive a push in any direction in order to avoid a collision.
 6. No repair or maintenance is allowed after the entries have been submitted.
- E. Each team will have a two (2)-minute exit interview with the judges
- F. Entries placing 1st through 20th will receive points based on that placement as specified in the scoring rubric

Refer to the official rating form for more information.

ON-SITE SEMIFINAL ROUND

- A. The test track consists of lanes created by tape on the conference site floor creating three (3) to five (5) lanes 5' wide. Track surface description (carpet or concrete) will be posted on the TSA website under Themes & Problems under the current year. The length from start to the target line is based on the assigned distance for that year. Three (3) to five (5) vehicles will run simultaneously.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The documentation portfolio

ON-SITE SEMIFINAL ROUND

- A. Each vehicle has two attempts. The best attempt score will be kept.
- B. The scoring will be: the total of the time in seconds added to the distance from the finish line in centimeters when the vehicle comes to a rest and stops. Score=time (seconds) + distance from finish line (cm). The lowest number is the best car.
- C. A car that leaves its lane and strikes another car will not be scored for that attempt.
- D. Any vehicle damaged during the 1st run is evaluated by the event coordinator to determine whether or not the vehicle is allowed to race again.

Medical Technology

Overview

Participants conduct research on a contemporary medical technology issue, related to the current year's theme, noted on the TSA website under Themes & Problems, document their research and solution, and present their documentation through a static display. The entry may include student research, or a re-creation or simulation of research performed by the scientific community. A student-designed model or prototype depicting an aspect of the issue will also be included in addition to the display. Semifinalist teams participate in an on-site presentation/interview.

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 documentation portfolio score.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

All components of the team's documentation portfolio 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 (7) minutes to present
- C. Up to two (2) minutes to respond to questions.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants access the annual theme posted on the TSA website under Themes & Problems.
- B. Participants research the issue using credible sources.
- C. Participants prepare their display and model/ prototype according to 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. No more than two (2) team representatives report at the time and place stated in the conference program to check in the display and the model/prototype.
- B. Entries are evaluated by the judges with neither students nor advisors present
- C. The team reports at their assigned time to the designated place for their presentation.
- D. Semifinalist team representatives participate in the on-site presentation and interview.
- E. Team representatives 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. Students must understand the fundamental concepts and principles of the contemporary medical technology issue they research. Research about the issue should focus on significant impacts (opportunities and risks) on the environment, economy, and society, as well as any important ethical considerations.
- B. Display Guidelines:
 - 1. The size of the display may not exceed 15" deep x 3' wide x 4' high.
 - 2. Supporting materials, such as research, references, and resources, should be exhibited in a creative and effective manner on a stand-alone display and should include at a minimum:
 - a. Team identification number
 - b. Summary of the issue researched
 - c. Societal impact, including economic, social, environmental, and ethical considerations
 - d. Supporting information such as logs, graphs, sketches, drawings, illustrations, and photographs
 - e. Photographic verification: Photographic or digital images clearly displaying the design and creation of the model/prototype.
 - f. The display must incorporate the use of design principles. Participants highlight the display with creative visual elements (e.g., photos, titles) to actively engage the audience. Participants may use images "labeled for "re-use," but must properly cite the source (refer to the TSA Membership System/Total TSA/Competition Forms and Resources).

- g. Copyright: 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) and MUST be included on the back of the display. Clip art must be documented.
 - h. Written permission for all copyrighted material must be included on the back of the display (see Forms Appendix).
 - i. Photo/Film/Video Consent and Release Forms. If the entry contains images of people (minors require parental consent), proof of consent must be included for each person and included on the back of the display (see Forms Appendix).
3. A/C electricity may not be used.
 4. If the display and/or model/prototype requires power, they must be powered by dry-cell batteries or photo-voltaic cells.
 - a. The power supply must physically fit within the display 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/prototype/display, complete instructions must be provided to judges on how to power up the model/display.
- C. Model/Prototype
1. Participants must create a model or prototype of the medical technology solution chosen
 2. Models/prototypes may use additive and/or subtractive manufacturing of any traditional, Computer Numerical Control (CNC), 3D printing, or laser technology available to the participant
 3. Models/prototypes may not be commercially purchased or obtained from a medical facility or other retail supplier
 4. A/C electricity may not be used
 5. Any power source used must fit within the maximum display area
 6. Dry cell or photo-voltaic cells may be used for power, if desired
 7. Photographic verification of the design and creation of the model or prototype must be included as part of the display.
 8. If operating instructions are necessary (including electronics), they must be clearly displayed.
- D. Once the display set-up time frame has closed, participants may not re-enter the event area.

- E. Violation of the following will result in disqualification:
1. No viruses, live plants, or animals may be used as a part of the display
 2. No harmful or illegal substances may be displayed.

ON-SITE SEMIFINAL ROUND

- A. The presentation is limited to three (3) team representatives. Each member should be an active participant in the presentation.
- B. Representatives may reference their display and documentation during the presentation and interview.
- C. Teams may bring and use audio/visual materials or a laptop for their presentation. Projectors and screens are not permitted.
- D. Time limits:
 1. One (1) minute for set-up
 2. Seven (7) minutes for presentation
 3. Two (2) minutes to respond to questions from judges
 4. A five-(5) point deduction will be incurred for any time infraction.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The documentation portfolio

ON-SITE SEMIFINAL ROUND

- A. The display
- B. The model/prototype
- C. The presentation/interview

Refer to the official rating form for more information.

Microcontroller Design

Overview

Participants design a working digital device (product) with real-world applications. Through product demonstration and documentation, the team demonstrates in detail its knowledge of microcontroller programming, simple circuitry, and product design and marketing. The project should have educational and social value, and conform to the theme for the year. The theme will be posted on the TSA website under Themes & Problems. Teams demonstrate and promote their work in a timed presentation.

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 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

Participants are allowed:

- A. Five (5) minutes to set up for the presentation.
- B. Five (5) minutes for the presentation.
- C. Three (3) minutes for removal of any items.
- D. A deduction of five (5) points will be incurred for exceeding the five (5)-minute presentation time limit.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants concentrate their efforts in the design and development of a working digital device (product).
- B. Participants create a portfolio, documenting their research and process.
- C. Participants prepare an oral presentation.
- D. 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. No more than three (3) team representatives report at the time and place stated in the conference program with:
 - 1. The device (product)
 - 2. The documentation portfolio
- B. The team presents the following at their assigned time:
 - 1. Research findings
 - 2. An explanation of the value of their product
 - 3. A demonstration of the product's functionality
- C. The device will be taken by the team at the time and location posted in the conference program.
- D. Judges score the entries and presentation.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. Documentation portfolio is 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 conference city and state, the year, and the team identification number; one (1) page
 - 2. Table of contents; pages as needed
 - 3. A description of the team's project, including an explanation of the theme; pages as needed
 - 4. Research into the problem; three (3) pages maximum
 - 5. Work Log (see Forms Appendix); pages as needed
 - 6. Circuit diagrams; pages as needed
 - 7. Source code; pages as needed
 - 8. Materials list; pages as needed
 - 9. Team's evaluation of its work; pages as needed
 - 10. References and resources list in a professional citation style of the competitors choosing; pages as needed. 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.
- B. The Device (product):
 - 1. The device (product) must include a programmed microcontroller that controls the device functionality.
 - 2. Aesthetics: The product must be well-designed, design elements are incorporated, and show good craftsmanship.
 - 3. Functionality: The product must operate as intended; remote control technology may be used to operate the device.

4. The product must be relevant to the given theme.
5. Coding and Circuit Design: The product must show proper and effective use of coding and circuit methods.
6. AC power and/or a dry cell battery may be used.
7. The device may be no larger than 18" x 12" x 12".

ON-SITE SEMIFINAL ROUND

- A. The Presentation:
 1. Participants are given five (5) minutes to set up their device and five (5) minutes to explain the problem and demonstrate the functionality of the device.
 2. A deduction of five (5) points will be incurred for exceeding the five (5)-minute presentation time limit.
 3. Judges may ask questions after the presentation.
 4. Participants are allowed three (3) minutes for the removal of any items used in the presentation.
- B. All portfolios become the property of TSA and will not be returned after the event.
- C. The device will be taken by the team at the completion of the presentation or will be picked up by the team at the time and location posted in the conference program.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The documentation portfolio

ON-SITE SEMIFINAL ROUND

- A. The product
- B. The presentation

Refer to the official rating form for more information.

Off the Grid

Overview

Throughout the world, people are working to become more self-sustaining when it comes to landscaping and architectural design. Sometimes the purpose is to live off the grid, other times it is to create a smaller carbon footprint; yet other times it is to meet a need in locations where there is no access to power, water, or other basics. There are many options for sustainability throughout the world, but sometimes a location limits or enables those options.

Applying leadership and 21st century skills, participants conduct research on a sustainable architectural design for a home in a country of the team's choosing other than the team's resident country. Teams will create a display and a model. The model can be of the home the team designs or of a specific aspect of their design.

Semifinalists demonstrate competency by presenting and responding to questions about their design. The design brief for this competition 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. Six (6) teams will advance to the semifinal round based on their portfolio score.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

All components of the individual's resume and cover letter 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

Ten (10) minutes are allowed for the semifinal presentation and interview broken down as follows:

- A. Seven (7) minutes for the presentation
- B. Three (3) minutes to respond to questions from judges

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants access the design brief posted on the TSA website under Themes & Problems.
- B. Participants select a country and design a sustainable home based on that country's climate conditions, raw materials available, construction methods, and infrastructure.
- C. Participants concentrate their efforts researching conditions in their chosen country and sustainability efforts.
- D. Participants prepare their documentation, display, and model according to the regulations.
- E. Participants prepare to present.

ON-SITE SEMIFINAL ROUND

- A. No more than two (2) team representative report at the time and place stated in the conference program to check in:
 - 1. The display
 - 2. The model
 - 3. The documentation portfolio
- B. The team reports at the assigned time and place stated in the conference program to participate in the presentation/interview.
- C. Judges score the presentation/interviews.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants must understand the fundamental concepts and principles of the sustainable architecture that they are implementing. Research should focus on the country's environment, climate, natural resources, and economy.
- B. Display and Model:
 - 1. The display must include:
 - a. Model of the solution or model of a system used for the design
 - b. The chosen country's name
 - c. A world map clearly indicating the location of the chosen country, the location of the current year's National TSA Conference, and the distance in miles between the two (2) locations
 - d. A tri-fold flier or brochure that provides basic information and facts about the chosen country and a description of the design features of the home (one [1] piece of 8 ½" x 11" paper)
 - e. The team's documentation portfolio

2. The size of the display and model may not exceed 15" deep x 3' wide x 4' tall. The documentation portfolio must be placed in the display with the model and remain within the dimensions.
 3. A/C electricity may not be used.
 4. If the display and/or 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 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.
 5. Once the display set-up time frame has closed, participants may not re-enter the event area.
- C. Documentation portfolio is 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 conference city and state, the year, and the team ID number; one (1) page
 2. Table of contents; one (1) page
 3. A description of how the team interpreted the design challenge and an explanation of the style and merits of the solution; two (2) pages
 4. A description of the country's environment, climate, natural resources, and economy; three (3) pages
 5. Building materials used in the construction of the home interior and exterior surfaces of the architectural design (this is different from the list of the model construction materials); one (1) page
 6. CAD drawings for the required drawings (each drawing to be submitted on maximum drawing sheets cut size B [11" x 17"] with appropriate scale size noted on the drawing); pages as needed
 - a. Original floor plan/s of the design
 - b. Landscape plan
 - c. Diagrams explaining design elements
 7. References and resources page. Participants must cite a minimum of three (3) different types of credible resources; pages as needed
 8. Work Log (see Forms Appendix); pages as needed

ON-SITE SEMIFINAL ROUND

- A. No more than two (2) team representatives check in the entry and set up the display, observing the requirements in Rules and Regulations B.1-5
- B. Violation of the following will result in disqualification:

1. No viruses, live plants, or animals may be used as a part of the display.
 2. No harmful or illegal substances may be displayed.
- C. Participants may reference the display and the portfolio. No additional materials or devices are allowed for the presentation.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The documentation portfolio

ON-SITE SEMIFINAL ROUND

- A. The display
- B. The model
- C. The presentation/interview

Refer to the official rating form for more information.

Prepared Speech

Overview

Participant delivers a speech that reflects the theme of the current National TSA Conference. See the TSA website under Themes & Problems for the current conference theme.

Eligibility

Three (3) individuals per chapter may register.

Time Limits

- A. Each speech should be no less than three (3) minutes and no more than five (5) minutes.
- B. A one (1)-point deduction will be incurred for each ten (10)-second interval under or over the allotted time for speaking.

Procedure

ON-SITE

- A. Participants report to the event area at the time and place of their assigned presentation time.
- B. The event coordinator introduces each student by identification number only and in the order of scheduled times.
- C. Participants deliver their speech in the allotted time limit.

Regulations and Requirements

- A. Each speech must be the result of the participant's own efforts.
- B. The topic for the Prepared Speech event is the published theme of the current year's conference.
- C. Information about technology and TSA is appropriate as long as it relates to the published theme.
- D. Participants are not permitted to use any type of props, computers, display boards, etc.
- E. Costumes are not permitted.
- F. Participants may use note cards during the speech.
- G. Participants may not reveal their school, chapter name, or city, but the appearance of a state name on an official TSA badge is acceptable.
- H. TSA will provide a podium in the event room.
- I. Participant scores are penalized one (1) point per ten (10)-second interval for speaking over or under the allotted time

- J. Time commences when the speech begins.
- K. Participants are not allowed to hear the speech of any other participant.
- L. Observers are allowed to sit in the audience during the semifinals.
- M. Observers may not enter or leave during a speech.
- N. No talking, gesturing, or interaction with the audience is permitted.
- O. There should be no applause until a speech has concluded.
- P. No audio or visual recording devices (including cell phones, digital cameras, etc.) by any observer are permitted.

Evaluation

- A. The quality, content, and effectiveness of the speech
- B. The speaker's stage presence

Refer to the official rating form for more information.

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

Six (6) 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; time will begin upon arriving at the event area.
- 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 masking 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. Quick squares are permitted.
 - 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)
- 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.
- 5. 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 according to the entry with the earlier testing time given the advantage.

Refer to the official rating form for more information.

Promotional Marketing

Overview

Participants create a marketing portfolio observing the theme and required elements, which will be electronically submitted pre-conference. The theme will be posted on the TSA website under Themes & Problems. Semifinalists design a solution to an on-site challenge.

Eligibility

- A. Three individuals per chapter may register.
- B. Six (6) individuals will advance to the semifinal round based on their marketing portfolio PDF and digital signage URL scores.

Time Limits

PRE-CONFERENCE PRELIMINARY ROUND

All components of the individual's marketing portfolio PDF and digital signage URL 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) minutes is allowed to set up.
- B. One (1) hour is allotted to complete, save, and submit the on-site challenge.

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants access the annual theme and on the TSA website under Themes & Problems.
- B. Participants concentrate their efforts in creating a three (3)-part marketing portfolio containing:
 - 1. A printable advertisement
 - 2. A wearable design
 - 3. Digital signage
- C. Participants submit the printable advertisement and wearable design electronically as multi-page PDF documents separated into the following categories:
 - 1. The printable advertisement and supporting documentation for the design

- 2. Wearable design and supporting documentation for the design
- D. Participants submit the digital signage part of the marketing portfolio via a URL link.
- E. The marketing portfolio PDF and digital signage URL 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. Semifinalists report at the time and place stated in the conference program with a laptop computer.
- B. Semifinalists are responsible for bringing their own USB flash drive.
- C. Semifinalists complete the on-site layout and design challenge within the one (1)-hour time limit.
- D. Once semi-finalists complete their solution to the the design challenge, they will save their final entry to the the USB flash drive as a multimedia presentation or PDF format. The participant will then alert the coordinator and wait for judges to evaluate their final product on the participant's computer screen.
- E. Judges independently assess the entries. Once judges are finished with their evaluation, the participant must submit the USB to the coordinator and may leave and take their computer out of the room.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. The required elements are posted on the TSA website under Themes & Problems.
- B. Use of the TSA logo is permitted as long as it adheres to the current TSA Branding Guide.
- C. Pre-conference, participants design the following three (3) components as part of the marketing portfolio based on the theme and requirements posted on the TSA website under Themes & Problems:
 - 1. Printable signage must be viewable and saved as a PDF.
 - 2. Participants design a wearable design. This design must be viewable and saved as a PDF.
 - 3. Participants create digital signage using presentation software. This multimedia signage would be scrolling throughout an event. A URL link must be provided for submission, which points directly to the team's entry.

- D. Additional information about design work needs to be a typed PDF file submitted with the corresponding design PDF file (pages as needed), and include the following:
 - 1. Notation of all ideas, fonts, and images that are completely original.
 - 2. 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).
 - 3. Notation of the type of software program(s) used for designs and layout.
- E. Copyright information
 - 1. Student Copyright Checklist (see Forms Appendix); one (1) page.
 - 2. Photo/Film/Video Consent and Release Forms. If the entry contains images of people (minors require parental consent), proof of consent must be included for each person (see Forms Appendix); pages as needed
- F. The solution must be the combination of each of the items as one (1) PDF (the URL of the digital signage will be submitted separate from the PDF). Combine the printable signage, wearable design, additional information about design work, the Student Copyright Checklist, and any necessary Photo/ Film/Video Consent and Release forms into a single PDF with the file name "Marketing Portfolio" and the individual student ID number.
- G. The URL submission of the digital signage must point directly to the individual's entry. Entries that require a request for access be granted will not be judged.
- H. The marketing portfolio PDF and digital signage URL must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
- I. 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 location provided in the conference program to complete the on-site layout and design challenge with-in the one (1) hour time limit.
- B. Participants are required to bring:
 - 1. One (1) laptop. Laptop must be fully charged with enough battery for the duration of the semifinal round.
 - 2. One (1) computer mouse (if desired).
 - 3. Pencils and/or Pens.
 - 4. Notebook paper or copier paper.
 - 5. Portable power bank (if desired).
- C. Participants do NOT have access to electrical power/outlets during the event.

- D. Clip art may be used for the on-site challenge, but the use of a template is not permitted. Students are responsible for providing their own graphic library.
- E. The on-site work must be an original creation.
- F. Internet access is permitted, but it will not be provided by TSA. TSA cannot guarantee the availability of cellular and/or Wi-Fi signals in the competition room.
- G. Students save the design solution for the on-site problem as a multimedia presentation or PDF on the USB for submission.
- H. Judges will evaluate the solution to the design challenge on the screen of the participant.
- I. Participants may leave the room only with permission from the event coordinator.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The marketing portfolio PDF and digital signage URL

ON-SITE SEMIFINAL ROUND

The design challenge

Refer to the official rating form for more information.

STEM Animation

Overview

Participants use computer graphics tools and design processes (e.g., animation) to communicate, inform, analyze and/or illustrate a topic, idea, subject, or concept that focuses on one (1) or more of the STEM (science, technology, engineering, or mathematics) areas. Sound may accompany graphic images. Participants will find the current year's theme posted on the National TSA website under Themes & Problems for this information. Semifinalists make a presentation.

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 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 animation is not to exceed three (3) minutes in length. There is no minimum time requirement.
- B. There will be a three (3)-point deduction for each fifteen (15) seconds, or fraction thereof, over the three (3)-minute length.
- C. The animation time 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 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 access the annual theme posted on the National TSA website under Themes & Problems.
- B. Participants design and create a STEM animation video and documentation portfolio.
- C. Participants submit the documentation portfolio PDF and animation URL by 11:59 pm CT on February 13, 2024.

ON-SITE SEMIFINAL ROUND

- A. The team reports to the event area for the presentation at the time and place stated in the conference program.
- B. Each semifinalist team explains its portfolio to the judges, discussing the purpose, value, research and design, and development process of its work.

Regulations and Requirements

PRE-CONFERENCE PRELIMINARY ROUND

- A. Documentation portfolio is required and must be submitted as a single, multi-page PDF document with pages in this 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. Purpose of animation; one (1) page
 - 4. Images of a hand-sketched storyboard (no digital screen captures) that documents the flow and progression of the animation, with written notes; special effects, audio cues, dialogue, transitions, and scene duration should be incorporated into the storyboard; pages as needed
 - 5. Written description of what the animation illustrates or demonstrates; one (1) page
 - 6. List of references that includes sources for materials, copyrighted and otherwise; the term "Fair Use" and similar terms are not acceptable citations when creating the list of references; (pages as needed)
 - 7. Permission letters for copyrighted material; pages as needed
 - 8. List of software and hardware used in the development of the animation; one (1) page
 - 9. Work Log that indicates preparation for the event, as noted by date, task, time involved, team member

responsible, and comments (see Forms Appendix);
pages as needed

10. A completed Student Copyright Checklist (see Forms Appendix); one (1) page

B. Animation:

1. The video must be submitted in a common video format suitable for viewing with a VLC player, utilizing a Microsoft Windows operating system.
2. The URL must point to the main page of the team's entry. Entries that require a request for access to be granted will not be judged.
3. Each animation must advance automatically once it has been opened and started by judges.
4. The animation is not to exceed three (3) minutes in length.
5. There will be a three (3)-point deduction for each fifteen (15) seconds, or fraction thereof, over the three (3)-minute maximum length. For example: An animation that runs 37 seconds beyond the three (3)-minute limit will receive a deduction of nine (9) points.
6. Sound may accompany the animation, but it is not required.
7. All video footage, graphics, special effects, and audio clips must be originally created/filmed by the participants.
8. Where applicable, all ideas, text, images, and sound from other sources must be cited.
9. If copyrighted material is used, proper written permission must be included in the documentation portfolio (see Student Copyright Checklist in Forms Appendix).
10. Absolutely no purchased content may be used in any part of the animation. (Purchased content includes, but is not limited to, texture, models, and royalty free music.)
11. Free and purchased items from sites like PowToons and Animaker are not acceptable for this event.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The quality of the portfolio and the animation

ON-SITE SEMIFINAL ROUND

The project presentation

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.
- J. Team members report to the event area at the time and place stated by the event coordinator to pick up their equipment.

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. Access to AC power will be provided. One electrical outlet per team. Each team should bring a power strip.
- D. 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.
- E. 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.
- F. 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.
- G. Programs must be written completely on-site.
- H. Use or modification of any programs written prior to the competition will result in disqualification.
- I. 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.

D. The interview

Refer to the official rating form for more information.

Johnson Recycling Center needs an automatic system for separating its two primary types of recycling material products. If type A material is detected in the product, the system should move the product to the right side of a sorting line. If type B material is detected on the assembly line, the product should be delivered to the left side. Whenever a product is delivered, a light or buzzer should activate for 10 seconds to alert workers that a product is available on one or the other of the sorting lines. The system should then reset to separate and deliver a new product. Design a prototype that can automatically deliver at least four products without any user intervention, then reset.

Evaluation

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

SYSTEM CONTROL TECHNOLOGY INVENTOR'S LOG

Participant/Team ID# _____

Use only the space provided. This section must be completed DURING the process of problem analysis.

1. Description or interpretation of the given problem:

The two parts below must be completed AFTER the problem analysis session.

2. Description of the team solution (explain the unique features of the program and model):

3. Directions to evaluators to start the system:

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.

ON-SITE SEMIFINAL ROUND

Performance during the oral competition.

Refer to the official rating form for more information.

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

Averaged test scores are used to determine the sixteen (16) semifinalist teams.

Technical Design

Overview

Participants demonstrate their ability to use the technical design process to solve an engineering design problem. For ARTSA, this event is entirely virtual/remote.

Eligibility

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

Time Limits

Between March 3rd at 12:01 am and March 7th at 11:59pm, participants must solve the engineering design problem and upload the solution to JudgePro. The submission portal will close on March 7th at 11:59pm.

Procedure

- A. Teams follow the technical design process loop to solve the provided engineering design problem.
- B. All work must be completed solely by the teams entered in this competition. No outside help is permitted.

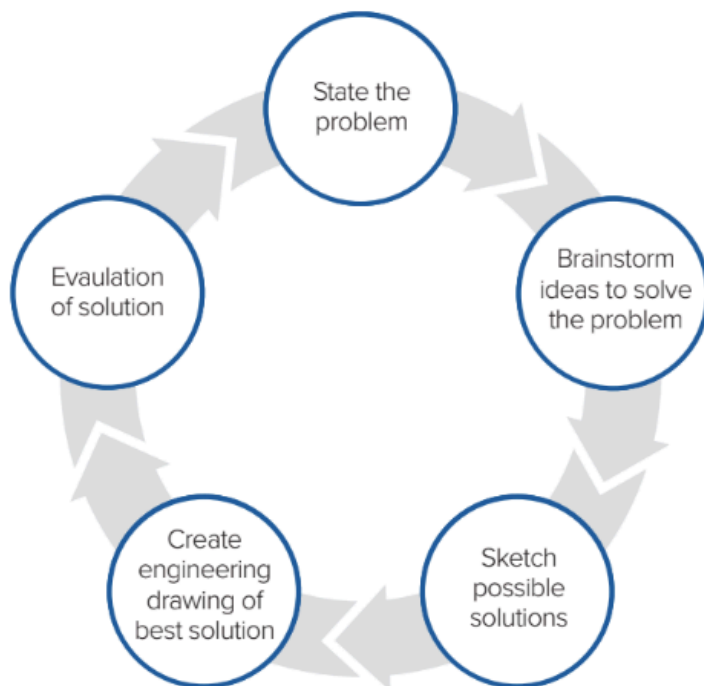


Figure 1: Technical design process loop

Regulations and Requirements

Design Preparation

- A. Students prepare a portfolio that includes each step of the technical design process loop. (Figure 1).
- B. Students develop a problem statement interpretation from the problem provided.
- C. The portfolio should show a logical progression from one step of the loop to the next.
- D. Documentation Portfolio:
 1. Documentation portfolio is required and must be secured in a clear front report cover with the following single-sided, 8½" x 11" pages, in this order:
 - a. Title page with the event title, conference city and state, the year, and the team/chapter ID number; one (1) page
 - b. Table of contents; one (1) page
 - c. Team's interpretation of the problem, including a list of criteria and constraints set forth in the design brief; one (1) page
 - d. Demonstrated use of a brainstorming technique of the team's choice (mind mapping, reverse engineering, word association, etc.), to develop ideas to solve the problem; brainstorming ideas should be documented; one (1) page
 - e. At least three (3) hand-drawn sketches of different solution options to a given problem. One (1) page for each hand-drawn sketch; three (3) pages total
 - i. Each hand-drawn solution must be developed based on the selected brainstorming technique.
 - ii. Each hand-drawn sketch also must include a solution pro/con list written on each sketch to aid in selecting the best design;
 - iii. Label the first solution "Solution Option 1," the second "Solution Option 2," and the third "Solution Option 3."
 - f. Based on the pro/con list for each of the hand-drawn solutions to the problem, select the best solution and create an engineering drawing based on the solution; one (1) page.
 - g. Using the engineering drawing of the final solution, write a paragraph that evaluates the final solution and answers the following question, "Does the final

design meet all the elements set forth in the design brief?"; one (1) page.

- E. A sample design brief is provided below to help students understand a typical engineering design problem for this event

Design Brief Sample

(This design brief is ONLY an example of the type of problem that participants may expect to see when they open the assignment.)

Aircraft carriers are much shorter than a typical airport runway. How do aircraft manage to gain enough speed for takeoff over a much shorter distance? A catapult gives them the extra boost they need to take-off.

An elementary school teacher would like to use the basic principles of this technology to teach his/her students about kinetic and potential energy, but apply the same knowledge to launching a small paper airplane.

Design a hand-held paper airplane launcher that a classroom teacher can incorporate into a classroom lesson and have the students build as a class project.

Your solution must be able to be built by 5th grade students using materials and supplies that they can bring from home and incorporate a rubber band as the power source.

The solutions have a maximum length of 9", width of 8", and a height of 7".

The solution is contained in a documentation portfolio. A prototype or model is not allowed.

Evaluation

- A. Each element of the portfolio
- B. The overall technical design process

Refer to the official rating form for more information.

Video Game Design

Overview

Applying leadership and 21st century skills, participants develop a video game that focuses on a subject of their choice. 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.

Eligibility

- A. Three (3) teams of 2-6 students per chapter may register.
- B. Nine (9) 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. The game submitted for evaluation must be greater than three (3) minutes in length of play and must be interactive.

- A. A deduction of five (5) points total will be incurred for a game that completes under the three (3)-minute time minimum.
- B. The timing of the game segment starts with the first image or sound presented.
- C. Games must be playable from the deadline until the end of the ARTSA State Conference.

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

SEMIFINAL ROUND

Ten (10) minutes are allowed for the on-site presentation and interview broken down as follows:

- A. Five (5) minutes for the presentation
- B. Five (5) minutes for the interview

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Teams design an online video game based on a subject of their choice.
- B. The documentation portfolio must be submitted to JudgePro by 11:59 pm CT on February 18, 2025.
- C. Semifinalists will be announced by email and on the ARTSA website by 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

- A. All online game submissions must be a hyperlink to the online game and be accessible for evaluation by 11:59 pm CT on 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.
- B. Entries received, or changes made to submitted entries after this deadline will not be judged.
- C. The URL must point to the team's entry. Entries that require a software download, running an executable file (.exe), or request that access be granted will not be judged.
- D. Video Game:
 - 1. Must be a hyperlink to the online game.
 - 2. Must be the original work of the team.
 - 3. Work that is not created by the team must have proper documentation, showing copyright permissions and/or license for usage in the game segment.
 - 4. When creating the game, the game must be free of any weapons or violence as stated in the general rules.
 - 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 Conference.
 10. Bonus points may be awarded for exceptional game features or content.
- E. The portfolio must include the following pages in a multi-page PDF document with pages in this order:
1. Title page with the event title, the conference city and state, the year, and the team's identification number; one (1) page
 2. Table of contents; pages as needed
 3. Purpose and description of the game, the target audience, including market research, explanation of how the game is unique, and a detailed explanation of how to play the game, including a list of control functions; two (2) pages
 4. A hand-drawn or digitally sketched storyboard that depicts the design concept of the video game; pages as needed. No screenshots of the game will be permitted as part of the storyboard.
 5. The Student Copyright Checklist (see Student Copyright Checklist in the Forms Appendix). Failure to include the Student Copyright Checklist will result in disqualification.
 6. Permission letters for the use of copyrighted material; if applicable, pages as needed.
 7. Work Log (see Forms Appendix); pages as needed
- F. Judges score the entries.

SEMIFINAL ROUND

- A. Semifinalist teams report to the assigned time and place.
- B. Participants make a presentation to the judges about their video game.
- C. The game may be available on the laptop of the semifinal judges, but Internet access may not be provided. Prepare for no Internet access. Semifinalist teams must bring one (1) laptop that has a full charge. Prepare a multimedia presentation on the laptop using screen snags or pictures that does not require Internet access. The presentation may be from a judges' laptop, the team laptop with Internet access, or the team laptop without Internet access.
- D. Semifinalists do NOT have access to electrical power/ outlets during the event.

- E. The presentation shall not last longer than five (5) minutes.
- F. Judges will ask questions up to five (5) minutes following the presentation.
- G. The top ten (10) finalists are announced at the TSA conference awards ceremony.

Evaluation

PRELIMINARY ROUND

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

SEMIFINAL ROUND

- A. The presentation
- B. The interview

Refer to the official rating form for more information.

Vlogging

Overview

Participants use digital video technology to create original content around a predetermined technology theme. Vlogging encourages good storytelling, videography, and editing techniques to create a coherent series of creative work. Participants will find the current year's theme posted on the National TSA website under Themes & Problems for this information.

For ARTSA, this event is entirely virtual/remote.

Eligibility

An unlimited number of teams of 2-6 students per chapter may register.

Time Limits

PRE-CONFERENCE

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 video series may not exceed 6 minutes in length for all videos included.
- B. The timing starts with the first sound of the first video and continues until the last sound of the final video.

Procedure

- A. Participants access the annual theme posted on the TSA website under Themes & Problems.
- B. Participants concentrate their efforts on the design of a series of original digital videos, while observing the regulations and requirements.
- C. Participants record their process in a documentation portfolio.
- D. Participants submit the video series URL and documentation portfolio PDF by 11:59 pm CT on February 18, 2025.
- E. Entries are evaluated by the judges with neither students nor advisors present based on the following criteria:
 1. Judges score the Vlog Series criteria.
 2. Judges score the Documentation Portfolio criteria.

Regulations and Requirements

- A. The Video Series:
 1. Participants may choose any video hosting site that allows for a playlist feature (such as UNLISTED YouTube Playlist of UNLISTED YouTube Videos)
 2. The URL must point directly to the participant's playlist. Entries that require a software download, request access be granted, or have multiple video links not in a playlist will not be judged.
 3. Entries received, or changes made to submitted entries after the deadline, will not be judged.
 4. All video footage, graphics, special effects, and audio clips must be originally created/filmed by the participants.
 5. All ideas, text, images, and sound from other sources must be properly cited.
 6. If copyrighted material is used, proper written permission must be included. NOTE: The video production produced will not be judged if copyright procedures are not followed.
- B. The documentation portfolio must be submitted with the playlist URL address in the form of a multi-page PDF document with pages in this order:
 1. Title page with the event title, the title of the vlog series, 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 series; one (1) page
 4. Overview of each video in the series; up to two (2) pages
 5. Hand sketched storyboard (screenshots are not acceptable); pages as needed
 6. Video scripts; pages as needed
 7. List of hardware and software used in the development of the videos; one (1) page
 8. Team's self-evaluation of the video series, using the criteria for TIER-1 VLOG SERIES on page 322 (can be in paragraph format or a copy of the rubric portion with data from the team); one (1) page
 9. List of references that include sources for materials (copyrighted and non-copyrighted); pages as needed
 10. Permission letters for copyrighted material (including clips and images); pages as needed

11. Student Copyright Checklist (see Forms Appendix); one (1) page
 12. Signed Photo/Film/Video Consent and Release forms for all video participants (see Forms Appendix); pages as needed
 13. Work Log (see Forms Appendix); pages as needed
- C. The video and documentation portfolio must adhere to the general rules F. Prohibited Materials, References, and Images.

Evaluation

The vlog series

Website Design

Overview

Participants are required to design, build, and launch a website that features the team's ability to incorporate the elements of website design, graphic layout, and proper coding techniques. The design brief for this event will be posted on the National TSA website under Themes & Problems. Semifinalists participate in an interview, with an emphasis on web design as it pertains to their solution, to demonstrate the knowledge and expertise gained during the design process.

Eligibility

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

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, 2024. 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

Ten (10) minutes are allowed for the semifinal presentation and interview broken down as follows:

- A. Seven (7) minutes for the presentation
- B. Three (3) minutes to respond to questions from judges

Procedure

PRE-CONFERENCE PRELIMINARY ROUND

- A. Participants access the middle school event design brief from the National TSA website under Themes & Problems.
- B. Participants design a website while observing the theme and design requirements.
- C. The website address URL (which includes the documentation) must be submitted by 11:59 pm CT on February 18, 2024.
- D. Semifinalists will be announced by email and on the ARTSA website by March 18, 2025

ON-SITE SEMIFINAL ROUND

- A. Participants report at the assigned time and place for the interview.
- B. Judges score 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 middle school design brief.
- C. The URL must point to the main page of the team's entry. Entries that require a request for access be granted will not be judged.
- D. All web pages must be completed during the current school year.
- E. The solution to the design brief is developed as a series of web pages with a minimum of three (3) pages and no maximum of pages linked under the main design brief solution web page.
 - 1. One (1) of the pages must list all sources of information used to create the website.
 - 2. If copyrighted material, such as text, images, or sound from other sources is used, proper written permission must be included/documented on one (1) of the pages.
 - 3. Participants must submit a completed Student Copyright Checklist (in PDF format) as a link on their website reference page. (See Forms Appendix); one (1) page
 - 4. Participants also must include a completed Work Log (in PDF format) as a link on their website reference page. (See Forms Appendix); pages as needed
- F. All entries must be compatible using the latest versions of Microsoft Edge, Firefox, Chrome, etc. on a desktop/laptop computer.
- G. In addition to basic HTML code, the website may contain Java applets, HTML5, Shockwave, and other state-of-the-art web-based applications.
- H. Framework systems, such as Drupal, Joomla, WordPress, Bootstrap, or other current technologies may be used. If a framework system is used, a statement affirming the framework was built by the team must be posted on an "About" section or page.

- I. The website must be finished, submitted, and accessible via the Internet by 11:59 pm CT on February 18, 2024.
- J. Changes made after submission will result in disqualification from the event.

ON-SITE SEMIFINAL ROUND

The team must be prepared to discuss at a minimum:

- A. Overall website design and originality
- B. Design brief
- C. The appropriate use of new Internet and web-based applications (different browsers, monitor resolution, plug-ins, etc.).

Evaluation

PRE-CONFERENCE PRELIMINARY ROUND

The website

ON-SITE SEMIFINAL ROUND

The interview

Refer to the official rating form for more information.

Forms Appendix

Downloadable forms are available in the [TSA Membership System](#) under Total TSA → Competition Forms

TECHNOLOGY STUDENT ASSOCIATION WORK LOG					
Date	Task	Time involved	Team member responsible (student initials)	Comments	
1.					
2.					
3.					
4.					
5.					
6.					



STUDENT COPYRIGHT CHECKLIST (for students to complete and advisors to verify)

STUDENT: Answer question 1 below.

- 1) Does your solution to the competitive event integrate any type of music and/or sound? ☐ YES ☐ NO

If NO, go to question 2.

If YES, is the music and/or sound copyrighted? ☐ YES ☐ NO

If YES, move to question 1A. If NO, move to question 1B.

- 1A) Have you asked for author permission to use the music and/or sound in your solution and included that permission (letter/form) in your documentation? If YES, move to question 2. If NO, ask for permission and if permission is granted, include the permission in your documentation.
- 1B) Is the music/sound royalty free, or did you create the music/sound yourself? If YES, cite the royalty free music/sound OR your original music/sound properly in your documentation.

CHAPTER ADVISOR: Sign below regarding your student's answer(s) to the use of music/sound in his/her competitive event solution. Even if your student answers "NO" to question 1, please sign below noting that you have evaluated the competitive event solution and the student answered the question(s) accurately.

I, _____ (chapter advisor), have checked my student's solution and confirm that any use of music/sound is done so with proper permission and is cited correctly in the student's documentation and/or the solution has been found to have no music/sound included.

STUDENT: Answer question 2 below.

- 2) Does your solution to the competitive event integrate any graphics/videos? ☐ YES ☐ NO

If NO, go to question 3.

If YES, is(are) the graphics/videos copyrighted, registered and/or trademarked? ☐ YES ☐ NO

If YES, move to question 2A. If NO, move to question 2B.

- 2A) Have you asked for author permission to use the graphics and/or videos in your solution and included a permission (letter/form) in your documentation for graphic/video used? If YES, move to question 3. If NO, ask for permission and if permission is granted, include the permission in your documentation.
- 2B) Is(are) the graphics/videos royalty free, or did you create your own graphic? If YES, cite the royalty free graphics/videos OR your own original graphics/videos properly in your documentation.

CHAPTER ADVISOR: Sign below regarding your student's answer(s) to the use of graphics/videos in his/her competitive event solution. Even if your student answers "NO" to question 2, please sign below noting that you have evaluated the competitive event solution and the student answered the question(s) accurately.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of graphics/videos with proper permission and is cited correctly in the student's documentation and/or the solution has been found to have no graphics/videos included.

STUDENT: Answer question 3 below.

- 3) Does your solution to the competitive event use another's thoughts or research? ☐ YES ☐ NO

If NO, this is the end of the checklist.

If YES, have you properly cited other's thoughts or research in your documentation? ☐ YES ☐ NO

CHAPTER ADVISOR: Sign below regarding your student's answer(s) to having integrated any thoughts/research of others in his/her competitive event solution. Even if your student answers "NO" to question 3, please sign below noting that you have evaluated the competitive event solution and the student answered the question(s) accurately.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of the thoughts/research of others is done so with proper permission and is cited correctly in the student's documentation and/or the solution has been found to have all original thought with no use of other's thoughts/research.

Student Initials: _____

Chapter Advisor Signature: _____

PHOTO/FILM/VIDEO CONSENT AND RELEASE

I hereby give permission for images of my child or myself (as applicable), captured during Technology Student Association (TSA) activities through film, photo or digital camera, to be used solely for the purposes of TSA promotional materials and publications, and I waive any rights of compensation or ownership thereto.

Name of Minor in Images (please print)

Name of Minor's Parent/Guardian (please print)

Name of Adult in Images (please print)

Parent/Guardian or Adult's Signature (as applicable)

Date