GEOSPATIAL TECHNOLOGY

OVERVIEW

Applying leadership and 21st century skills, participants interpret geospatial data in multiple formats and formulate projections about the area of interest based on an annual theme posted on the TSA website under Competitions/Themes and Problems. Participants develop a digital portfolio containing maps, data, and pertinent documentation, which is submitted pre-conference. Preliminary round participants summarize their findings in a visual infographic map to be submitted on-site. Semifinalists defend their projections in a presentation.

ELIGIBILITY

One (1) team of no more than three (3) individuals per chapter may participate.

TIME LIMITS

PRELIMINARY ROUND

A. All portfolio components of the chapter's entry must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on May 15th.

B. Email verification of each team's entry will be made by June 10th.

SEMIFINAL ROUND

A. No more than ten (10) minutes is allowed for the defense presentation, broken down as follows:

1. One (1) minute to set-up

2. Up to five (5) minutes to present

3. Up to four (4) minutes to respond to questions.

ATTIRE

TSA competition attire is required for this event.

PROCEDURE

PRE-CONFERENCE

A. Participants review the annual challenge found on the TSA website under Competitions/Themes and Problems.

B. Participants concentrate their efforts on researching the issue, collecting, analyzing, and synthesizing various types of Geospatial data, and making predictions.

C. Participants prepare their documentation portfolio and visual infographic according to the regulations.

D. Participants submit the digital portfolio as a multi-page PDF document online by 11:59 p.m. ET on May 15th.

E. Submission information will be provided on the TSA website under Competition Updates.

PRELIMINARY ROUND

A. Pre-conference submission entries are reviewed by evaluators with neither students nor advisors present based on the following criteria:

1. Judges review and score the Documentation Portfolio criteria to determine the top twenty-four (24) preliminary contestants.

B. The list of twenty-four (24) teams is posted on-site on the first full day of conference.

C. The twenty-four (24) teams selected to compete in the preliminary round report at the time and place stated in the conference program to submit their visual infographic map entries.

D. Judges review and score the Visual Infograhic criteria to determine the top twelve (12) semifinalist teams.

E. A list of twelve (12) semifinalist teams (in random order) is posted.

SEMIFINAL ROUND

A. Semifinalists report at the time and place stated in the conference program to sign up for a presentation/interview time.

B. Semifinalists report at the designated time and place for the presentation/interview.

C. Semifinalists participate in a defense presentation that lasts no more than ten (10) minutes, broken down as follows:

1. One (1) minute to set-up

2. Five (5) minutes to present

3. Up to four (4) minutes to respond to questions.

D. Ten (10) finalists are announced during the conference awards ceremony.

REGULATIONS AND REQUIREMENTS

Students will work to develop their leadership and 21st century skills in the process of preparing for and participating in this TSA competitive event. The development and application of those skills must be evident in their submission, demonstration, and/or communication pertaining to the entry.

PRE-CONFERENCE

A. Participants must understand the fundamental concepts and principles of the issue researched. Research about the issue shall focus on:

1. Analysis of the collected geospatial data, which may include but is not limited to: imagery, boundaries and places, demographics and lifestyles, basemaps, transportation, earth observations, urban systems, or historical maps

2. Representation of the data using any online platform (e.g. ArcGIS)

3. Synthesis of the prediction(s).

B. Documentation portfolio:

1. The finished portfolio must be saved as a multi-page PDF document with the pages presented in the following order:

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

   b. Table of contents

   c. Collected geospatial data; pages as needed.

   d. Analysis of collected geospatial data; pages as needed.

   e. Reflection project journal; pages as needed:

      i. Description of activities and timeline of work

      ii. Description of location factors for the project

   f. Written explanation of the team's prediction; two pages maximum

   g. Resource page, including citations and copyright letters if applicable; pages as needed

2. The portfolio must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on May 15th.

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

4. The submission must point directly to the team's portfolio. Entries that require a request for access be granted will not be judged.

PRELIMINARY ROUND

A. Visual infographic map:

1. Must have the team identification number clearly labeled in the upper right-hand corner of the submission.

2. May not reveal the school, chapter name, or city.

3. Cannot exceed dimensions of 15" deep x 3' wide x 4' high.

4. Must focus on the predicted outcomes/findings from the analyzed data

5. All ideas, text, images, and sound from other sources must be cited.

6. If copyrighted material is used, written permission must be included (See the Student Copyright Checklist in the Forms Appendix).

EVALUATION

PRELIMINARY ROUND

A. The documentation portfolio

B. The visual infographic map

SEMIFINAL ROUND

A. The defense presentation

Refer to the official rating form for more information.

STEM INTEGRATION

Depending upon the subject of the problem, this event may align with one or more STEM (Science, Technology, Engineering, and Mathematics) educational standards.

LEADERSHIP AND 21ST CENTURY SKILLS DEVELOPMENT

This event provides opportunity for students to build and develop leadership and 21st century skills including but not limited to:

- Communication
- Collaboration/Social Skills
- Initiative
- Problem Solving/Risk Taking
- Critical Thinking
- Perseverance/Grit
- Creativity
- Relationship Building/Teamwork
- Dependability/Integrity
- Flexibility/Adaptability

CAREERS RELATED TO THIS EVENT

This competition has connections to one (1) or more of the careers below:

- Geographic Information Systems (GIS) Analyst
- Geospatial Programmer
- Cartographer
- Photogrammetrist
- Land Surveyor
- Surveying Technician
- Mapping Technician
- Logistics planning manager
- Transportation systems technician
- Infrastructure planning manager

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GEOSPATIAL TECHNOLOGY

2021 & 2022 OFFICIAL RATING FORM

HIGH SCHOOL

Judges: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline in the rating form, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Go/No Go Specifications

- Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box.
- If an item is missing, leave the box next to the item blank and place a check mark in the box labeled ENTRY NOT EVALUATED.
- If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- ☐ PDF of the documentation portfoliowas submitted and scored
- ☐ Visual infographic map is present
- ☐ ENTRY NOT EVALUATED

DOCUMENTATION PORTFOLIO (100 points)				Record scores in the column spaces below.
CRITERIA	Minimal performance	Adequate performance	Exemplary performance	
	1-4 points	5-8 points	9-10 points	
Portfolio (X1)	Portfolio is unorganized and/or missing three (3) or more components.	Portfolio has most components and is generally organized.	One (1) or no components are missing in the portfolio, and content and organization are clearly evident.	
Explanation of Predicted Outcomes (X2)	The predicted outcome is missing or unclear.	The prediction is somewhat clear and generally supported.	A clear and concise prediction is made and supported strongly by the data.	
Maps (X1)	Maps provided are not appropriate, and/or they are missing a number of parts; the maps do not contribute to the overall impact of the project.	Maps have most needed parts; information is adequate; the maps align with the intended purpose.	Maps provided contain all or nearly all needed parts, with information that is clear and appropriately supports the purpose of the project.	
Project Journal and Descriptions (X1)	Little or no documentation of the project has been included, and/or it is disorganized.	Partially complete documentation of the project is included.	The project documentation is organized, orderly, and largely or entirely complete.	
Data (X2)	Data is inconsistent and disorganized and does not contribute to the impact of the project.	Information is organized in a format that contributes to the impact of the project, but some data supports are missing, or do not align with the intended purpose.	All required forms of information are present in a format that greatly contributes to the purpose of the project.	
Analysis Documents (X2)	Few documents are provided that explain the data and their relationship to the prediction.	Most documents show the correlation between the data and the prediction.	The data is thoroughly analyzed and well represented.	
References (X1)	References are missing or incomplete.	Most references are present, but are not accurately recorded.	A fully organized and well-documented reference sheet is included.	
DOCUMENTATION PORTFOLIO SUBTOTAL (100 points)				

THE VISUAL INFOGRAPHIC MAP (50 points)

CRITERIA	Minimal performance	Adequate performance	Exemplary performance	
	1-4 points	5-8 points	9-10 points	
Predicted Outcome (X2)	The predicted outcome of the data analysis is inconsistent with the data findings or is missing from the visual presentation.	The predicted outcome based on the data analysis is logical, but it is not represented clearly in the visual presentation; some ideas are confusing.	The predicted outcome demonstrates an original and innovative use of data and is represented in the visual presentation; the prediction is logical and easy to follow.	
Use of Data (X1)	Little or no use of data is included.	Some data is used and adequately represented.	The use of data is included and complete and in an appropriate format; the data clearly supports the prediction.	
Aesthetics and Creativity (X1)	The visual design is confusing, disorganized, and lacking creativity.	The visual design has some appealing and interesting elements, but the elements detract from the ideas or message.	The visual design is appealing, interesting, and contributes greatly to the overall idea or message.	
Content Design (X1)	The content seems disconnected and unorganized.	The content displays some cohesion between ideas, but some content is not relevant to the overall idea.	The content demonstrates connections between ideas that results in an interesting infographic.	
THE VISUAL INFOGRAPHIC MAP SUBTOTAL (50 points)				

Rules violations (a deduction of 20% of the total possible points for the above sections) must be initialed by the judge, coordinator, and manager of the event. Record the deduction in the space to the right.

Indicate the rule violated: _____

PRELIMINARY SUBTOTAL (150 points)

SEMIFINAL DEFENSE PRESENTATION/INTERVIEW (60 points)

CRITERIA	Minimal performance	Adequate performance	Exemplary performance	
	1-4 points	5-8 points	9-10 points	
Organization (X1)	Participants seem unorganized and unprepared for the interview; illogical explanation of problem and prediction is presented.	Participants are generally prepared for the interview; explanation of problem and prediction are generally communicated.	Interview is logical and easy to follow; the problem and prediction are communicated in a concise manner.	
Presentation (X1)	Presentation is full of illogical thoughts that lack clarity, and/or there is insufficient information provided describing the project.	Presentation is somewhat logical, easy-to-follow, and/or there is sufficient information provided describing the project.	Presentation is clear, concise, and there is ample information provided describing the project.	
Confidence (X1)	Majority of the delivery is made by one (1) member of the team; partner(s) may be disengaged from the presentation.	Team members are engaged in the process, though one (1) member may take on more responsibility than the others.	All team members are actively involved in the interview and responses to questions; there is shared responsibility among the team members.	

SEMIFINAL DEFENSE PRESENTATION/INTERVIEW (60 points) – continued			
Knowledge (X2)	Team members exhibit little understanding of the concepts in their project; answers to questions may be vague.	Participants exhibit a general understanding of the concepts in their project.	Participants show clear evidence of a thorough understanding of the project.	
Articulation (X1)	Communication of the solution is unclear, unorganized, and or illogical; leadership and/or 21st century skills are not evident.	Communication of the solution is somewhat logical and clear; leadership and/or 21st century skills are somewhat evident.	Communication of the solution is clear, concise, and logical; leadership and/or 21st century skills are clearly evident.	
SEMIFINAL DEFENSE PRESENTATION/INTERVIEW SUBTOTAL (60 points)				

Rules violations (a deduction of 20% of the total possible points for the above sections) must be initialed by the judge, coordinator, and manager of the event. Record the deduction in the space to the right. Indicate the rule violated: _____	

SEMIFINAL SUBTOTAL (60 points)	

To arrive at the TOTAL score, add the PRELIMINARY SUBTOTAL and the SEMIFINAL SUBTOTAL. **TOTAL (210 points)**	

Comments:

_____

I certify these results to be true and accurate to the best of my knowledge.

JUDGE

Printed name: _____ Signature: _____

GEOSPATIAL TECHNOLOGY
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Judges:

    1. Preliminary round, two (2) or more (documentation)
Preliminary round, two (2) or more (map)

    2. Semifinal round, two (2) or more

MATERIALS

A. Coordinator's packet, containing:

    1. Event guidelines, one (1) copy for the coordinator and for each judge.

    2. TSA Event Coordinator Report

    3. List of evaluators/assistants

    4. Results envelope with coordinator forms

B. Stick-on labels for identifying entries

C. Tables and chairs for event coordinator and evaluators

D. Tape or a board with clips to hold the visual infographic maps in place

RESPONSIBILITIES

PRE-CONFERENCE

A. National TSA will collect entries until 11:59 p.m. ET on May 15th and send out receipt confirmations to participants. The results are shared with the CRC manager, event coordinator, and assigned judges.

B. Review entries as they are submitted to the designated online storage utility.

C. Manage communication and Pre-conference evaluation (at least two [2] or more judges should be recruited earlier in the year). Coordinate with the Judge Manager.

D. Judges determine the twenty-four (24) preliminary contestants for the on-site challenge, and discuss and break any ties. Results are posted on-site at the national conference on the first full day of conference.

AT THE CONFERENCE

A. Attend the mandatory coordinator's meeting at the designated time and location.

B. Report to the CRC room and check the contents of the coordinator's packet.

C. Review the event guidelines and check to see that enough evaluators and assistants have been scheduled.

D. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, tables, chairs, etc. Notify the event manager of any potential problems.

E. One (1) hour before the semifinal event is to begin, meet with evaluators to review time limits, procedures, regulations, evaluation, and all other details related to the event. If questions arise that cannot be answered, speak to the event manager before the event begins.

PRELIMINARY ROUND

A. On the first full day of conference, post a list of the twenty-four (24) preliminary round participants.

B. Participants report to the time and place stated in the conference program to submit their visual infographic maps.

C. Late participants and/or entries are considered on a case-by-case basis and only when lateness is caused by events beyond the participant's control.

D. In order to compete, participants must be on the entry list or must have approval of the CRC.

E. Judges evaluate the entries with neither students nor advisors present.

F. Judges use the same official rating form for both the preliminary and semifinal round of judging.

G. Decisions about rules violations must be discussed and verified with the judges, event coordinator, and the CRC manager to determine either:

    1. To deduct twenty percent (20%) of the total possible points in this round

    2. To disqualify the entry

    The event coordinator, judges, and CRC manager must initial either of these actions on the rating form.

H. Judges determine the twelve (12) semifinalists and discuss and break any ties.

I. Submit the semifinalist results and all related forms in the results envelope to the CRC room.

J. If necessary, manage security and the removal of materials from the event area.

SEMIFINAL ROUND

A. Semifinalists report at the time and place stated in the conference program to sign up for a presentation/interview time.

B. Semifinalists report at the designated time and place for the presentation/interview.

C. Semifinalists locate and set-up their visual infographic maps in the event space.

D. Semifinalists participate in a defense presentation that lasts no more than ten (10) minutes, broken down as follows:

1. One (1) minute to set-up

2. Up to five (5) minutes to present

3. Up to four (4) minutes to respond to questions.

E. Discuss rule violations (e.g. 20% deduction, disqualification) and have all relevant parties initial the rating form.

F. Judges determine the ten (10) finalists and discuss and break any ties.

G. Submit the finalist results and all related forms in the results envelope to the CRC room.

H. If necessary, manage security and the removal of materials from the event area.