

High School: Level 2

Themes, Updates, Clarification and General Notes

**KANSAS DIGITAL SUBMISSIONS ARE DUE:
BY 11:59 PM CST on March 8th, 2023**

ALL Digital Submissions, MUST be saved as a PDF document.
PDFs with URL links are acceptable **IF** they are directing to a site that is hosting a submission for an event such as the link for Webmaster, Video Game Design, Digital Video Production, etc.

DO NOT submit a PDF with a link to a google drive or other protected file format, it must be accessible and downloadable by professionals outside a school district or local group

Events with a digital submission:

<i>Architectural Design</i>	<i>Digital Video Production</i>	<i>Music Production</i>
<i>Audio Podcasting</i>	<i>Engineering Design</i>	<i>Photographic Technology</i>
<i>Biotechnology Design</i>	<i>Fashion Design and Technology</i>	<i>Transportation Modeling</i>
<i>Board Game Design</i>	<i>Future Technology and Engineering Teacher</i>	<i>Video Game Design</i>
<i>Children's Stories</i>	<i>Geospatial Technology</i>	<i>Virtual Reality Visualization</i>
<i>Data Science and Analytics</i>	<i>Manufacturing Prototype</i>	<i>Webmaster</i>

Advisor Project Submission Link:

<http://judgespro.registermychapter.com/org/jpks-state/conf/jpks-state>

Student/Team Captain Project Submission Link:

<http://judgespro.registermychapter.com/org/jpks-state/conf/jpks-state/student>

*- National Qualifying Event

!- Digital submission

%- State level alternation to the event

Animatronics

Design Problem: Following the specified requirements, create an animatronic exhibit that would be seen in a History of Space Exploration Museum

Eligibility is three (3) teams of two to three (2-3) team members per state

Items Judged

Model Appearance

Model Function

Demonstration Presentation

!Architectural Design

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include Images of Model in Portfolio

Background

“Family” is a critical word to generations of people across America. A home is always an important aspect of establishing a family. An even more special place where family memories can be made is an amazing vacation home. Enjoying the features of a home on a river, lake, or stream is even more special. The best solutions will display considerations that reflect planning for at least two or three generations.

Challenge: Design Considerations and Constraints

The 2024 design problem is to design a vacation home for a family (minimum of 6 people) that is located on a river, lake, or stream.

1. Conduct research on the homes that are on a river, lake, or stream.
2. Select and identify the location for a vacation home and incorporate the necessary building codes and materials available in the immediate area.
3. The design must include, as a minimum, an open floor plan with a main living area, kitchen facilities, a pantry, and dining space for a minimum of six.
4. The solution must include a primary bedroom with a walk-in closet and a private bathroom with both a shower and a bathtub. The design must include at least two additional bedrooms that each have a walk-in closet and a bathroom with a shower.
5. A necessary portion of the home must be ADA compliant to accommodate elderly or disabled family members (for at least two or more members of the family).
6. The design may include one appropriate-sized deck/porch that could serve for enjoyment and entertainment.
7. Additional features can be included for utilizing the environment around the home and necessary storage.
8. The solution can be near the water or even over the water. The solution should incorporate the connection between the water and the home.
9. The finished design can be one or two floors and must be contained on one acre of land.
10. A maximum of 24”x24” site board must be used for submitting the model.

Items Judged

Documentation

Design Challenge

Model

Semi-Finalist Presentation/Interview

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!Audio Podcasting*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Theme: Students will develop a podcast focused on personal development, motivation, or coaching

1/8/24: TIME LIMITS

B. The audio piece must be more than one (1) minute and less than five (5) minutes in length.

More than one recording (episode) is acceptable if the total time for each episode, and the entire audio piece, meets the above time limit requirements

Items Judged

Audio Podcast

Documentation Portfolio

Semi-Finalist Interview

!Biotechnology Design

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include Images of Prototype/Model in Portfolio

Topic: Microplastics have long been a concern for their effects on marine ecosystems, but recently, scientists have discovered their existence in Antarctic snow, on the tops of mountains, in the air, and even in our blood. Research one source of microplastics (i.e., clothing, vehicle tires, manufacturing, plastic degradation, etc.) and document their effects on organisms and the environment, as well as what is being done to mitigate these effects.

Items Judged

Display (includes possible prototype/model)

Documentation

Semi-Finalist Presentation

!Board Game Design

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include Images of game and all parts pre and post package in Portfolio

2/14/23 Rubric - Go/No Go Specifications:

Documentation portfolio is present on the flash drive.

Items Judged

Packaging

Board Game

Documentation Portfolio

Semi-Finalist Presentation/Interview

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Chapter Team

The Navy-Blue Blazer with TSA patch is REQUIRED for this event. Participants in this event will compete as the same team of six (6) in both the preliminary (written exam) and the semifinal (oral presentation) rounds.

%Kansas Quirk: The test is completed according to published schedule which may be prior to the start of the conference.

Items Judged

Written Test
Business Meeting Presentation

!Children's Stories*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include Images of Physical Storybook in Portfolio

Theme: Adventure book. Students will use each page to help unlock a clue/experiment/activity at the end of the book.

3/1/23: [Updated Rubric](#)

Items Judged

Storybook
Documentation Portfolio
Semi-Finalist Reading and Interview

Coding*

%Kansas Quirk: The test is completed according to published schedule which may be prior to the start of the conference.

The following programming languages may be used to complete the assigned problems: C (version C11), C++ (version C++14), C# (version 6.0), Java (version 10), Javascript (NodeJS version 8.10), Python (version 3.6), Ruby (version 2.5), Swift (version 4.2)

Additional languages may become available as we near the conference. Participants will be presented with a series of coding problems that must be completed on site at the conference. Evaluation will be based on the successful completion of the problems and the time in which it takes students or teams to complete all the challenges.

Items Judged

Test Score
Testing of Solution

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Computer-Aided Design 2D Architectural*

Students can enter only ONE CAD Event not Both

%Kansas Quirk: Exit interviews may be utilized in lieu of formal scheduled interviews

Items Judged

Solution to Problem
Layout
Architectural Application
Interview

Computer-Aided Design 3D Engineering*

Students can enter only ONE CAD Event not Both

%Kansas Quirk: Exit interviews may be utilized in lieu of formal scheduled interviews

Items Judged

Solution to Problem
Layout
Engineering Application
Software Utilization

!Data Science and Analytics*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

See [this link](#) for the scientific poster layout

9/2/22 OVERVIEW: Semifinalists participate in a two (2) hour semifinal challenge visually representing a data set provided as an on-site challenge.

9/6/22 SEMIFINAL ROUND: B. Semifinalist teams submit the following as a multi-page PDF online:

A visual representation
A brief synopsis of their entry

%Kansas Clarification: Portfolio score determines who presents the Poster; Poster presentation score determines who does finalist problem; no interview/presentation after semi-finalist problem released

%Kansas Quirks: Preliminary round procedure may be altered depending on the number of entries

Items Judged

Documentation Portfolio
Scientific Poster Presentation
Semi-Finalist Visualization and Synopsis

!Debating Technological Issues*

%Kansas Quirks: Using preliminary rounds depends on the number of teams entered

Topic: Technology in Infrastructure

Subtopic 1: Autonomous vehicles are the answer to increasing traffic demands, especially in large urban areas.

Subtopic 2: Current carbon and renewable energy policies have a negative impact on power grid reliability and consumer pricing.

Subtopic 3: Manufacturing companies should be exempt from restrictions on waste production due to their contributions to society.

Items Judged

Debate

!Digital Video Production*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Theme: Epic or high fantasy - defined by the epic nature of its setting or satire of characters, themes, or plot. It is set in an alternative, fictional world.

Items Judged

Digital Video

Documentation Portfolio

Semifinalist Interview

Dragster Design

Design Challenge Requirements: Car body must have horizontal wings extending from both sides at front and rear. Maximum vehicle total width cannot exceed 90mm.

9/27/22: [Updated rubric](#)

11/4/22: Dragster Body

One (1)-piece, construction of wood or plastics, including urethane modeling foam. Materials, processing equipment or tools are not specified. CNC milling and 3D printing is allowed.

10/31/23: The one-piece body must be sculpted to have horizontal wings (or fins like rockets) two on either side of the front of the body and 2 extending from the rear of the body.

"**The Front**" is anywhere from the center point (length) of the body to the nose, or the farthest point at the front of the body.

"**The Rear**" of the body is from the center point (length) of the body to the Powerplant Hole, or the farthest point at the rear of the body.

No part of the front wing/fin may exist past the center point of the body.

No part of the rear wing/fin may exist past the center point of the body.

Items Judged

Dragster Qualifying Race/Post Race Inspection

Dragster Construction (Including Drawings)

Semifinalist Interview

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!Drone Challenge (UAV)*

Challenge: Carnival Games See [LINK](#) for full Challenge Statement

1/12/23: Participants are not required to have two drones. However, if they choose to have a backup drone, it is required at event check-in

8/25/23: All competitors are required to wear safety glasses and high visibility safety vest at a minimum

9/23/23:2024 Challenge – Obstacle 3 is worth 10 points

10/5/23: At the national TSA conference, the USB containing the documentation portfolio PDF will not be returned.

Items Judged

Testing of Drone
Portfolio
Semifinal Interview

!Engineering Design*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include Images of Display and Prototype/Model in Portfolio

Theme: Advance Health Informatics

Items Judged

Display and Prototype
Documentation Portfolio
Semi-Finalist Presentation

Essays on Technology*

Items Judged

Essay

Extemporaneous Speech*

%Kansas Quirk: Using preliminary rounds depends on the number of individuals entered

Item Judged

Speech

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!Fashion Design and Technology*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include Images of Garments and Patterns in Portfolio

Theme: Avant-Garde

Avant-Garde is characterized by a radical approach. It values aesthetic innovation and unorthodox and experimental approaches. It often combines fabrics of different textures and shapes to result in clothing that is affordable and artistic. The prototype garment can be one (1) piece or two (2) to four (4) separate pieces.

Items Judged

Quality of Garments

Patterns

Documentation Portfolio

Semi-Finalist Presentation

!Flight Endurance

Items Judged

Documentation

Flight Times

Forensic Science

%Kansas Quirk: The test is completed according to published schedule which may be prior to the start of the conference.

Participants are required to bring the full forensics kit as outlined on page 216.

Items Judged

Written Test (scores averaged)

Analysis of Crime Scene

!Future Technology and Engineering Teacher

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Submit PDF with Instructional Video link, copyright & photo/video consent forms

4/3/23: SEMIFINAL ROUND

B. Participants report at the time and place stated in the conference program to sign up for a scheduled time to present the lesson plan/activity.

Items Judged

Instructional Video

Semi-Finalist Lesson Plan Presentation

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Geospatial Technology

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include Images of Infographic Map in Portfolio

%Kansas Clarification: Portfolio score determines which Visual Infographic Map are evaluated; Visual Infographic Map score determines who will participate in the Semi-Final Defense Presentation/Interview

Theme: Research a local, regional, state, or national Ecosystem Issue

Items Judged

Documentation Portfolio

The Visual Infographic Map

Semi-Final Defense Presentation/Interview

Manufacturing Prototype

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include images of product and manufactured pieces in Portfolio

Theme: An item that could be used to represent a TSA state delegation at a trade show. It could be a giveaway or a tabletop promotional item.

Items Judged

Documentation Portfolio

Component Analysis

Semi-Finalist Sales Pitch

!Music Production*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include link to Audio in the Portfolio

9/12/22 SEMIFINAL ROUND

A. The interview

Refer to the official rating form for more information.

10/18/22 PRECONFERENCE

D. Musical Piece

4. There will be a five (5)-point deduction for:

a. each fifteen (15) seconds under the one (1)-minute minimum

Items Judged

Musical Piece

Documentation Portfolio

Semi-Finalist Interview

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On-Demand Video

%Kansas Quirk:

- Teams have approximately **30 hours** to complete and submit their video
- Confirm participation and pick up problem at the registration desk Day 1 of the conference beginning at 10:00am.
- Entries **MUST** be turned in by **4:00pm on Day 2 of the conference** to JudgePro (preferred) OR on a flash drive to the registration desk.

Items Judged

Production

!Photographic Technology

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Upload Portfolio as per guidelines in Event Guide

Theme: Forced Perspective, Long Exposure, Architectural, and Abstract Photography (incorporate one photo using each of these types of photography in the portfolio)

%Kansas Clarification: Semifinalist will have approximately Twenty-Four (24) Hour to complete and submit a Semifinal Portfolio. The specific details and procedures will be picked up on Day 1 of the conference beginning at 10:00am.

- Semifinalist Entries **MUST** be turned in by **12:00pm on Day 2 of the conference.**

Items Judged

Photographic Portfolio

Semifinalist Portfolio

Prepared Presentation*

%Kansas Quirk: Using preliminary rounds depends on the number of individuals entered

Theme: 2024 National TSA Conference Theme, "Evolution of Excellence"

Items Judged

Presentation

Stage Presence

Organization of the Presentation

Promotional Design*

Theme: Develop promotional materials for a leadership development program for high school students. The program will consist of 6 two-hour sessions will be held on the 2nd Tuesday of each month from September to March. Students must apply by August 15th and 25 students will be selected to participate. You will need to design and produce recruitment documents for students, a flyer, and an application.

3/22/23

PRELIMINARY ROUND

C. 6. Items that may be considered for the four (4) Promotional Folder items might include: a pamphlet, post card, letter, small poster, or business card.

Items Judged

Promotional Folder Cover
Promotional Folder Contents
Semifinal Problem

!Senior Solar Sprint

%Kansas Quirk: Car maybe be run indoors if clear weather is not available.

2/27/23:

Pre-Conference

D. Solar Paneling

13. Each vehicle must include a mounted battery holder that is capable of holding two AA batteries. This system needs a switch and button as illustrated. This is to be used at the starting line as follows.

- a) on the "READY" command the button is depressed and held, this opens the circuit.
- b) on the "SET" command the switch is flipped, to connect the batteries to the motor.
- c) on the "GO" command the button is released, thereby closing the circuit, sending power to the motor, causing the vehicle to move.

Items Judged

Display and Model
Documentation Portfolio
Race
Car Builder Interview

Software Development

Live Demonstration of the Software.

9/6/22 PROCEDURE

PRELIMINARY ROUND

F. A list of twelve (12) semifinalists (in random order) is posted.

Items Judged

Tool Design
Demonstration

Structural Design and Engineering

The problem statement for 2024 is to design a balsa structure that will support the greatest load possible (in the center) using the least amount of materials. The solution must transfer the load to the top of the abutments as efficiently as possible.

3/8/23: When submitting the pre-built preliminary structure solution, the team will identify where the test block should be placed for evaluation.

3/21/23: The full-size three-view drawing can be full-size or a scaled drawing

Click [Here](#) for the problem statement.

Click [Here](#) for the HS Structural Team Verification

Items Judged

Pre-Built Structure

Onsite Structure

Subjective Criteria

System Control Technology*

%Kansas Quirk: Exit interviews may be utilized in lieu of formal scheduled interviews

Items Judged

Inventor's Log

Solution to Problem

Programming Structure

Demonstration/Interview

Technology Bowl

The team of 3 students who take the written tests **MUST** be the same 3 students who compete in the oral rounds.

%Kansas Quirk: Test is completed online Day 1 of the Kansas State Conference.

Items Judged

Written Test (averaged)

Oral Competition

Technology Problem Solving

%Kansas Quirk: Kansas TSA commonly provides the materials to be used for the solution of the problem. Notice will be sent out prior to the Conference detailing what supplies, if any need to be brought.

All toolbox tools listed in the event guide should be brought.

Items Judged

Testing of Solution

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!Transportation Modeling

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Include Images of Model, and Display in Portfolio

Design Problem: Research and present a modern motor home/RV/camper.

Items Judged

Model and Display

Documentation Portfolio

Semifinalist Interview

!Video Game Design*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Upload Portfolio with Game Link as per guidelines in Event Guide

Theme: Fantasy Adventure game

1/23/23 Page 352 EVALUATION

PRELIMINARY ROUND

C. Up to **ten (10)** bonus points may be added by the judges for exceptional game features, or for content showing exemplary educational and social value.

Items Judged

Game Design

Documentation Portfolio

Semi-Finalist Interview

!Virtual Reality Visualization (VR)

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Upload Digital copy of the Documentation Portfolio; Include URL if one is used

Theme: Create a virtual reality (VR) simulation that will help assist children to become more active and healthier.

%Kansas Quirk: Visualization MAY be posted on a video hosting site (such as an UNLISTED YouTube URL) in ADDITION to submitting as listed in the Events guide.

Items Judged

Visualization

Documentation Portfolio

Semifinalist Presentation/Interview

High School: Level 2

!Webmaster

KANSAS Digital Submission Due Date: 11:59 PM CST on March 8th

Upload PDF with Link to Website as per guidelines in Event Guide

Topic: Green energy initiatives are important to reduce the negative effects of fossil-fuels on the environment. There are many renewable energy programs promoted and listed by the Environmental Protection Agency and they promote various incentives for homeowners to include more green and clean energy solutions in their homes.

Challenge: Develop a website that compiles information for homeowners on green and clean energy home solutions and other initiatives. The website should provide basic information, cost, tax rebate information, and clean/green energy practices.

9/27/2022 UPDATED [Rubric](#)

Items Judged

Website

Semi-Finalist Interview