

High School: Level 2

Themes, Updates, Clarification and General Notes

**KANSAS DIGITAL SUBMISSIONS ARE DUE:
BY 11:59 PM CST on March 7th, 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>Manufacturing Prototype</i>
<i>Audio Podcasting</i>	<i>Drone Challenge (UAV)</i>	<i>Music Production</i>
<i>Biotechnology Design</i>	<i>Engineering Design</i>	<i>Photographic Technology</i>
<i>Board Game Design</i>	<i>Fashion Design and Technology</i>	<i>Senior Solar Sprint</i>
<i>Children's Stories</i>	<i>Flight Endurance</i>	<i>Transportation Modeling</i>
<i>Data Science and Analytics</i>	<i>Future Technology and Engineering Teacher</i>	<i>Video Game Design</i>
<i>Debating Technological Issues</i>	<i>Geospatial Technology</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: Create an animatronic exhibit that would be seen at a state line travel welcome center.

Items Judged

Model Appearance

Model Function

Demonstration Presentation

!Architectural Design

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include Images of Model in Portfolio

Background

Americans work very hard for years to provide family members, parents, grandparents, and great grandparents with the help that they need to live in their private homes. Local governments also provide many services that help their residents with (among other things) daily meals, transportation, and socialization activities. At some point, however, support from family, friends, and local programs may not be enough. Residential facilities, assisted living facilities, and nursing homes are a critical element of many people's daily lives. People who require help full-time might move to a residential facility that provides many or all the long-term care services they need. Assisted living facilities can range in size from as few as 25 residents to 120 or more.

Challenge (Design Considerations and Constraints)

The 2023 design problem is to design an assisted living facility for people who need help with daily care. An assisted living facility will provide daily care, but not as much help as a nursing home provides.

1. Conduct research on the types of assisted living facilities in your community or state.
2. The team can select the "level of care" (or levels) and design the facility accordingly.
3. Select and identify the location for an assisted living facility and incorporate the necessary building codes and materials available in the immediate area.
4. The design must include, at a minimum, 'apartments or rooms' for at least 26 residents.
5. The assisted living facility will, at a minimum, provide three meals a day, housekeeping, have a laundry area, accommodations for 24-hour supervision and on-site staff, and have space for social/recreational activities.
6. The finished design can be one or multiple floors and must be contained on a 200'x200' plot of land. 7. A 24"x24" site board must be used for submitting the model.

Items Judged

Documentation

Design Challenge

Model

Semi-Finalist Presentation/Interview

High School: Level 2

!Audio Podcasting*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Theme: Product review of a product used daily by high school aged students.

Items Judged

Audio Podcast

Documentation Portfolio

Semi-Finalist Interview

!Biotechnology Design

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include Images of Prototype/Model in Portfolio

Topic: NASA is planning exploration to the Moon and beyond to Mars – How are food and beverages prepared, stored, and sustained for the entire trip? Document research findings that support proposed planning.

UPDATE: The title of the rubric table on page 68 should be “**Display**” instead of “**Digital Display**.” There is no digital requirement for the 2022 national TSA conference.

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 7th

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

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 7th

Include Images of Physical Storybook in Portfolio

Theme: Students will create an interactive book, for children in 1st-3rd grade, that promotes a career as a STEM teacher.

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.

High School: Level 2

Coding* (continued)

In addition to the specific HS Coding competition rules and regulations, students also must adhere to TSA's general rules (found in the HS competitive events guide).

The USA Computing Olympiad website and the ACM-ICPC International website are helpful resources for the Coding event. Additional resources that can be used to prepare for the event are listed below:

- <https://icpc.baylor.edu/compete/preparation>
- <https://www.codechef.com/>
- <http://www.usaco.org/index.php?page=contests>
- http://blog.hackerearth.com/2013/09/competitive-programming-getting-started_11.html
- <https://www.quora.com/What-is-the-best-strategy-to-improve-my-skills-in-competitive-programming-in-2-3-months>

Items Judged

Test Score
Testing of Solution

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 7th

See this link for the scientific poster layout:

https://tsaweb.org/docs/default-source/themes-and-problems-2018-2019/2022-2023-themes-and-problems/scientific-poster-template.pptx?sfvrsn=9cea803d_2

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

Items Judged

Documentation Portfolio

Scientific Poster Presentation

Semi-Finalist Visualization and Synopsis

!Debating Technological Issues*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

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

Upload digital copy of references to JudgePro as part of the GO-NO-GO check

A printed copy of references must be present onsite as well.

Theme: Social Media and Society

- *Sub-Topic 1: Social media promotes collective ideas and strengthens groups*
- *Sub-Topic 2: Social media companies profit off controversial and dangerous topics/discussions*
- *Sub-Topic 3: Schools should have the ability to ban social media use on their campuses for student safety*

Items Judged

Debate

!Digital Video Production*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Theme: Promote a good cause in your community

Items Judged

Digital Video
Documentation Portfolio
Semifinalist Interview

Dragster Design

2023 – No special design requirements

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.

Items Judged

Dragster Qualifying Race/Post Race Inspection
Dragster Construction (Including Drawings)
Semifinalist Interview

!Drone Challenge (UAV)*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

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

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

10/12/22 [UAV Drone Specifications](#)

E. Drone Regulations

The UAV Drone propellers can be in size from 4" (101mm) to 8" (203.2mm) in overall length.

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

11/4/22 UAV Drone Specifications

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

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

Items Judged

Testing of Drone
Portfolio
Semifinal Interview

High School: Level 2

!Engineering Design*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include Images of Display and Prototype/Model in Portfolio

Theme: Prevent Nuclear Terror

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

!Fashion Design and Technology*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include Images of Garments and Patterns in Portfolio

Theme: The Oscars

Prototype garment can be from one to three separate pieces

Items Judged

Quality of Garments

Patterns

Documentation Portfolio

Semi-Finalist Presentation

!Flight Endurance

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include Images of Plane and flight box in Portfolio

Items Judged

Documentation

Flight Times

High School: Level 2

!Flight Endurance

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include Images of Plane and flight box in Portfolio

Items Judged

Flight Times

Flight Rankings

Documentation Portfolio

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 7th

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

Two videos for this event no Portfolio component

Items Judged

Instructional Video

Semi-Finalist Lesson Plan Presentation

Geospatial Technology

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

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 weather issue

Items Judged

Documentation Portfolio

The Visual Infographic Map

Semi-Final Defense Presentation/Interview

High School: Level 2

Manufacturing Prototype

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include images of product and manufactured pieces in Portfolio

Theme: Create a decoration that would be used for a Fourth of July celebration.

Items Judged

Documentation Portfolio

Component Analysis

Semi-Finalist Sales Pitch

!Music Production*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

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

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

High School: Level 2

!Photographic Technology

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Upload Portfolio as per guidelines in Event Guide

Theme: Elements: Students will use one or all of the four elements of nature as an inspiration in their photography 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 **11:00am 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: A legacy of Innovation

Items Judged

Presentation
Stage Presence
Organization of the Presentation

Promotional Design*

Theme: Develop promotional materials for a three-day elementary school STEM Day Camp. The daily schedule is 9am – 3pm. A lunch for all participants is included. Cost is \$25 per student. You will need to design and produce recruitment documents (flyer/poster) for elementary school students, documents to inform parents, documents for potential sponsors, and an application.

Items Judged

Promotional Folder Cover
Promotional Folder Contents
Semifinal Problem

!Senior Solar Sprint

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include Images of Display and Model in Portfolio

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

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

Individual structural members working together to support a load is the challenge for every engineering project. The problem statement for 2023 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

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

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

Items Judged

Pre-Built Structure

Onsite Structure

Subjective Criteria

High School: Level 2

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

!Transportation Modeling

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Include Images of Model, and Display in Portfolio

Design Problem: Research and display a Water Vessel that includes living quarters for 4 – 6 people - Yacht / Houseboat (no actual water in display)

Items Judged

Model and Display
Documentation Portfolio
Semifinalist Interview

High School: Level 2

!Video Game Design*

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

Upload Portfolio with Game Link as per guidelines in Event Guide

Theme: Puzzlers and party games

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 7th

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

Theme: Create a virtual reality visualization that will assist a shelter in the adoption of pets. The VR must include a virtual meet with at least one adoptable animal as well as showcase the facility and the process for adoption.

%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

!Webmaster

KANSAS Digital Submission Due Date: 11:59 PM CST on March 7th

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

Topic: Space tourism: a company that will make you an astronaut

Challenge: Create a fictitious company and design and appropriate website. The website should provide information starting with promotion, basic information, cost, planning, training, vehicles, safety, launch and recovery

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

Items Judged

Website

Semi-Finalist Interview

