

# Middle School: Level 1

## Themes, Updates, Clarification and General Notes

**KANSAS DIGITAL SUBMISSIONS ARE DUE:  
BY 11:59 PM CST on March 7<sup>th</sup>, 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>Biotechnology</i>	<i>Digital Photography</i>	<i>Off the Grid</i>
<i>Career Prep</i>	<i>Flight</i>	<i>Promotional Marketing</i>
<i>Children's Stories</i>	<i>Junior Solar Sprint</i>	<i>STEM Animation</i>
<i>Community Service Video</i>	<i>Mass Production</i>	<i>Video Game Design</i>
<i>Construction Challenge</i>	<i>Mechanical Engineering</i>	<i>Website Design</i>
<i>Data Science and Analytics</i>	<i>Microcontroller Design</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

!- Early and digital submission

%- State level alternation to the event

### **!Biotechnology\***

**KANSAS Digital Submission Due Date: 11:59 PM CST on March 6<sup>th</sup>**  
Include Images of Display (and Model/Prototype as applicable) in Portfolio

Theme: Participants select a contemporary issue concerning biotechnology

### Items Judged

Documentation

Display

Presentation

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### **!Career Prep**

**KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th**

Upload Cover Letter and Job Specific Resume as per guidelines in Event Guide

Theme: Select a career from one (1) of the following career clusters:

Architecture & Construction

1. Health Sciences
2. Human Services
3. Law, Public Safety, Corrections, & Security

#### Items Judged

Cover Letter

Job Specific Resume

Semifinalist interview

### **Challenging Technology Issues\***

MUST place in the top 3 to be eligible to compete in this event at the National Level

*Topics:*

- *Autonomous Vehicles*
- *Biometric Recognition (e.g., facial, temporal, fingerprint, etc.)*
- *Cloud Computing*
- *Robotic Technology Surgery*
- *Wearable Technology (e.g., watches, rings, glasses, etc.)*

#### Items Judged

Pro Side presentation

Con Side Presentation

### **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

## Middle School: Level 1

### **!Children's Stories\***

**KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th**

Include Images of Physical Storybook in Portfolio

#### Theme:

Students will write and illustrate a book that promotes leadership and perseverance. The book should be geared towards students in kindergarten to 2nd Grade.

Full rubric that reflects updates to the criteria/definitions in the Documentation Portfolio section [Updated Children's Stories rubric](#)

#### Items Judged

Tier 1- Storybook

Tier 2- Documentation Portfolio

Semifinalist Reading and Interview

### **Coding**

Teams will take a written test to determine semifinalist.

To prepare for MS Coding competition, teams should have knowledge of concepts (software development, computer science, and coding topics) that will be on the Coding written test. They also should be familiar and comfortable with using the Scratch programming language.

Scratch is a free visual programming language available from the MIT Media Lab ([https://scratch.mit.edu/starter\\_projects/](https://scratch.mit.edu/starter_projects/)). An offline version of the Scratch tool should be downloaded and available on each team's laptop.

Teams that advance to the semifinalist level, based on written test performance, will perform a challenge using the Scratch programming language. Semifinalist teams will receive the challenge on site and will have two hours to complete it. (PLEASE NOTE: Semifinalist teams MUST have a version of this program available for offline use, as there will be no Internet access available during the semifinalist level of the competition.)

Examples of the types of challenges students may be asked to complete can be found at this link: <http://scratched.gse.harvard.edu/resources/short-scratch-programming-challenges>.

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

#### Items Judged

Written Test

On-Site Problem- Subjective

On-Site Problem- Objective

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### **!Community Service Video**

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Include link to Video in the Portfolio

Full rubric that reflects updates to the Semifinal Presentation/Interview section point values and Time Deductions section. [Updated Community Service Video rubric](#)

#### Items Judged

Video Production

Video Effectiveness

Semi-Finalist Presentation/Interview

### **Computer Aided Design (CAD) Foundations\***

#### Items Judged

Layout

Software Utilization

### **!Construction Challenge**

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Include Images of Model/Display in Portfolio

Full rubric that reflects updates to the Preliminary Subtotal section point values [Updated Construction Challenge rubric](#)

#### Items Judged

Tier 1- Model/Display

Tier 2- Documentation Portfolio

Semi-Finalist Presentation/Interview

### **Cybersecurity**

Problem Statement:

The recent event is a possible data breach of customer information including the billing address, shipping address, and credit card information of all current customers.

Full rubric that reflects updates to the Preliminary and Semifinal Subtotal sections point values [Updated Cybersecurity rubric](#)

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

#### Items Judged

Written Test

Semifinal Presentation

## Middle School: Level 1

### **!Data Science and Analytics\***

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Include Images of Display in Portfolio

Topic (1/12/23):

Use “[College/University Data](#)” to review and analyze how various institutions stack up in comparison to each other. Analyze the quantitative, qualitative, and geospatial data to provide additional insights on institutions based on one or more metric.

PRELIMINARY ROUND: There is no presentation in the preliminary round

SEMIFINAL ROUND: A. Thirty (30) minutes are allowed for data analysis and syntheses. B. Five (5) minutes are allowed to present.

Items Judged

Tier 1- Display

Tier 2- Documentation Portfolio

Semi-Finalist Presentation/Interview

### **!Digital Photography\***

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Upload Portfolio as per guidelines in Event Guide

Theme: Patterns or Textures in Architecture

Four (4) digital photographs are required for the portfolio.

Items Judged

Digital Photographic Portfolio Album

Semi-Finalist Challenge

Semi-Finalist Presentation/Interview

### **Dragster**

There are no Special Design Challenge Requirements.

Full rubric that reflects updates to the Semifinal Subtotal section point values

[Updated Dragster 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 Construction (including drawing)

Top 16 Interview

Race

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### Electrical Applications

Check event guide for required toolbox items

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

#### Items Judged

Written Test

Semi-Finalist Solution to On-site Problem

### Essays on Technology\*

Topic: Is the use of technology changing people for the better ... or worse?

#### Subtopics:

- Cell phone technology
- Medical technology
- Careers in technology

*%Kansas Quirk: Contestants should be prepared to upload or bring their completed outline to conference. Specific details will be communicated to the Chapters involved with the event.*

#### Items Judged

Detailed Outline

Essay

### **!Flight**

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Upload Portfolio as a Multi-Page PDF in order noted in the Event Guide

*Read the Rules carefully; the event has changed.*

Students are to bring a completed glider, portfolio, safety glasses, toolbox and building materials to competition. All contestants will fly the pre-built glider. The average of best 3 flight times (out of 4) will determine contestants moving on to the semifinalist portion.

Semifinalist will have 45 minutes to construct a new glider; and then will fly the new glider.

#### Items Judged

Documentation Portfolio

Flight Times (Finals)

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### **Forensic Technology**

Teams should have the necessary supplies to make a presentation on each of the three Forensic Science concepts.

Be familiar with, and be able to demonstrate, the following forensic concepts:

1. Fingerprint and Impression Analysis
2. DNA Analysis
3. Document Analysis: Handwriting, Forgery and Counterfeiting+

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

#### Items Judged

Written Test

Skill Demonstration

### **Foundations of Information Technology**

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

#### Items Judged

Written Test

### **Invention Innovations**

Theme: A device that will make your daily life easier

#### Items Judged

Interactive Display

Semi-Finalist Presentation/Interview

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### **!Junior Solar Sprint**

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Upload Portfolio as a Multi-Page PDF include Images of display and Car

Full rubric that reflects an update to the total score point value.

[Updated Junior Solar Sprint Rubric](#)

[AEOP JSS Website Link](#)

#### Items Judged

Display and Model

Documentation Portfolio

Race

Car Builder Interview

### **Leadership Strategies\***

*%Kansas Quirk: The use of preliminary rounds depends on the number of entries in the event. Specific details will be communicated to the Chapters involved with the event.*

#### Items Judged

Presentation

### **!Mass Production**

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Upload Portfolio as a Multi-Page PDF include Images of the Prototype Product

Theme: Remote control organizer for 4 remotes

#### Items Judged

Documentation Portfolio

Prototype

Semi-Finalist Presentation/Interview

### **!Mechanical Engineering**

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Upload Portfolio as a Multi-Page PDF include Images the Vehicle

Problem: Mousetrap Vehicle 2023 – Vehicle full stop required target distance is 19 feet  
Vehicles will run on a hard surface, not carpet.

#### Items Judged

Placement from Best of Two Runs

Interview

Portfolio Contents



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### Medical Technology\*

Theme – Participants select a contemporary medical technology issue.

#### SEMIFINAL ROUND

B. **Up to** (3) team representatives report at least ten (10) minutes prior to their assigned time to the designated place for their presentation.

#### Items Judged

Display  
Model/Prototype  
Semi-Finalist Presentation/Interview

### !Microcontroller Design

**KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th**

Upload Portfolio as a Multi-Page PDF include Images the Product

Problem: Design an interactive educational toy for toddlers.

#### Items Judged

Documentation Portfolio  
Device/Product  
Presentation

### !Off the Grid\*

**KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th**

Upload Portfolio as a Multi-Page PDF include Model and Display

Design Brief: Design a home in a country containing a forest biome for a family of four (4) with three (3) generations living in the home. The country can be any country containing the forest biome of your choice. The house must be designed for an area that does not have access to a power grid. In addition, the house must include a renewable energy source, vegetation gardening system for food production, and solve one (1) problem that is specific to the area.

#### Items Judged

Tier 1- Display  
Tier 1- Model Design  
Tier 2- Documentation Portfolio  
Semi-Finalist Presentation/Interview

## Middle School: Level 1

### Prepared Speech\*

*Theme:* A Legacy of Innovation

*%Kansas Quirk: The use of preliminary rounds depends on the number of entries in the event. Specific details will be communicated to the Chapters involved with the event.*

#### Items Judged

Content

Stage Presence

Organization

Semi-Finalist Presentation/Interview

### 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.*

Page 259 should read: PRELIMINARY ROUND

D. 3. f. Abrasives sheets, sanding sponges, emery boards

#### Items Judged

Testing of Solution

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### **!Promotional Marketing**

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Upload Portfolio as a Multi-Page PDF as noted in the Event Guide

Theme: College students are attending a college fair. Your challenge is to create promotional materials used to encourage them to pursue a career in STEM/Technology Education.

Your promotional toolkit needs to include the following three items.

Printable: Design a tri-fold brochure

1. Wearable: A tote bag that can be used to carry promotional materials
2. Digital Signage: Short video (1 ½ - 2 ½ minutes) to be shown at the career fair booth

Rubric, PRINTED DESIGN section: All reference to "poster" should be "printed design".

### 1/6/23 RULES AND REGULATIONS PRECONFERENCE

3. Participants create digital signage using presentation software, and should include:

- c. The digital signage must be between one and one half to two and one half (1 ½ to 2 ½) minutes in duration.

### Items Judged

Print Design

Wearable Design

Digital Signage

Semi Finalist Challenge

### **!STEM Animation\***

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Upload Portfolio as noted in the Event Guide; Include link to the animation

Theme: The Sun, Moon, Planets, and Stars: Patterns of Apparent Motion.

### Items Judged

Documentation Portfolio

Animation

Semifinal Presentation

# Middle School: Level 1

## Structural Engineering

### Design Brief

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

### Verification Form

### Analysis and Assessment Form

### Items Judged

Pre-Built Structure  
Onsite Structure

## System Control Technology\*

### Items Judged

Inventor's Log  
Solution to Problem  
Programming Structure

## Tech Bowl

*%Kansas Quirks: Test is completed online Day 1 of the Kansas State Conference.  
- Multiple teams per school at the Middle School level maybe allowed; Schools with multiple teams CANNOT interchange team members.*

### Items Judged

Test (averaged)  
Oral Competition

## Middle School: Level 1

### Technical Design

*%Kansas Quirk: Confirm participation and pick up Problem at the registration desk begins Day 1 at 10:00am.*

*-Entries MUST be turned in by 12:00pm on Day 2 to the registration desk.*

#### Items Judged

Solution to Problem

### !Video Game Design

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

Upload Portfolio with Game Link as per guidelines in Event Guide

No theme – subject is participant’s choice.

#### Items Judged

Video Game Design

Documentation Portfolio

Semi-Final Presentation

### !Website Design

***KANSAS Digital Submission Due Date: 11:59 PM CST on March 6th***

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

Design Brief: Website for a New Children’s Show - rated TV Y

Challenge: Develop a website for a fictitious children’s show rated TV Y that is interactive, engaging, graphically interesting, and easy to understand and navigate with the intent of enticing viewers to watch. The website must introduce the characters of the show, inform viewers where and when they can watch the show, and have an interactive area that is geared towards its viewers.

#### Items Judged

Website

Semi-Final Interviews