

2020 Kansas TSA State Showcase

2020 Kansas TSA State Showcase Purpose:

The goal for this conference is two-fold: Recognition and admiration of the effort students have already put into the competitions and to provide students something challenging and productive to work towards during this time away from the classroom.

We know not everyone has proper access to tools, materials, software, etc, but we want to reach as many of our students as we can in the best way we know how by providing these opportunities. Some students may be limited in what they can do, but we hope, with a little ingenuity, anyone who wants to can participate in some way.

Registration: There is NO entry fee this year, and pre registration is not required. Registration of students or projects is by submission and due **May 1st**

Go to the website www.kansastsaweb.org and select  button or Click this link: [Kansas TSA Showcase](#)

We are not cross checking entries with the National Roster, you are encouraged to challenge all of your students to show off their abilities.

Table of Contents

Page 1:	General Information
Page 2:	General Rules
Page 3:	Middle School Event Clusters
Page 4:	Middle School Themes, Prompts, Updates (from event guide and Nationals)
Page 17:	Middle School Event Prompts (onsite events and Semifinalist Problems)
Page 22:	High School Event Clusters
Page 23:	High School Themes and Updates (from event guide and Nationals)
Page 34:	High School Event Prompts (onsite events and Semifinalist Problems)

Questions?

Please contact tsakansas@gmail.com or Ruth DeLange, Associate State Advisor (620) 366-3388 (cell) tsakansas.associate@gmail.com if you should have any questions or need assistance.

2020 Kansas TSA State Showcase

General Rules:

1. Entries will all be completely digital submissions; no interactive video conference type presentations/interviews. All entries will be posted online for public viewing, so make sure you turn in projects you would be proud for anyone to see.
 - a. Due to the possibility of passing on COVID-19, we will not be accepting any physical entries or sending any physical items to participants.
2. The deadline to submit completed projects is **May 1, 2020, at 11:59 pm**. *Advisors will submit all student entries so that the individual students are not violating any rules prohibiting competition set forth by their districts. Please included the name(s) of the student(s) that created them. Entries posted online will be listed by Initial(s) and School only.*
Click following link to submit projects: [Kansas TSA Showcase Event Submission](#)
3. There are NO Event Tests this year
4. **"Onsite" Events:** Such as the CAD, Problem Solving or On Demand Video, have a prompt created especially for this showcase. See the [Kansas TSA website](#) for the event prompts. Again, students may have to be creative in completing these challenges.
5. **Combination Events:** Such as MS & HS Photography, MS & HS Promotional, Architectural Design and Off the Grid have a *preliminary* prompt (defined by in the Event Guides and by themes from Nationals) and would have an onsite *semifinalist* prompt in a normal year. The prompts on the [Kansas TSA website](#), are for the *semifinalist* portion of the event.
 - a. Students are encouraged to submit solutions to both the *preliminary* the *semifinalist* prompts. Entries of just the *preliminary* or *semifinalist* portion will be accepted. Recordings explaining anything should also be submitted as needed.
6. Without the live/interactive portions, many events are significantly changed but does not necessarily cancel them. The use of creativity is allowed and encouraged to complete project requirements.
 - a. For instance, there are no physical CO2 car races, but you can still design and build your car, then video, simulate, and/or work to prove why your CO2 car would be the fastest.
 - b. Events, such as Tech Bowl, cannot be held as written in the event guide, but entrants may try to create a project which fulfills the spirit of the competition. See event prompts for suggestions. In other words, no event is off the table at this point, if a student can find a reasonable way to represent their work, and put effort towards that event, they should do it.
7. Events with portfolios or other documentation should have some effort made to include the "paperwork" as defined in the official events guide.
8. LEAP Reports or Resumes are not required but are welcome.
9. **Judging:** a general rubric to score entries and, ratings (similar to what is used in music festivals) will be used. Additional awards not based on rating will be given to outstanding entries.

2020 Showcase Event Clusters- Middle School Level 1

Architecture, Construction and Design Technology (6)	Communication and Media Technology (6)
CAD Foundations MS	Children’s Stories MS
Construction Challenge MS	Community Service Video MS
Off the Grid MS	Digital Photography MS
Problem Solving MS	Essays on Technology MS
Structural Engineering MS	Promotional Marketing MS
Technical Design MS	STEM Animation MS
Computer Science and Information Technology (8)	Leadership (6)
Coding MS	Career Prep MS
Cybersecurity Foundations MS	Challenging Technology Issues MS
Data Science and Analytics MS	Chapter Team MS
Foundations of Information Technology (FIT) MS	
<i>Microcontroller Design MS</i>	Leadership Strategies MS
System Control Technology MS	Prepared Speech MS
<i>Video Game Design MS</i>	Tech Bowl MS
Website Design MS	
Manufacturing and Transportation Technology (6)	STEM General (6)
Dragster MS	Biotechnology MS
Flight MS	Electrical Applications MS
Junior Solar Sprint (JSS) MS	Forensic Technology MS
Mass Production MS	Inventions and Innovations MS
Mechanical Engineering MS	Medical Technology MS
VEX Robotics Competition MS	

Middle School: Level 1

2020 Kansas TSA Digital Showcase

Definitions:

The term "**Standard**" refers to the headings that are on the individual event rubrics in the Official event Guides.

The term "**Semifinalist**" is used to correlate back to the official event rubrics; everyone should do the Semifinalist portion/presentation of an event.

Use this as guide for what should be included in an entry.

We understand that:

Not all "Standard" items will be submitted due to limitations of the supplies and equipment that a student has on hand.

Items not listed as "Standard" for an event may be submitted to meet the spirit of the event.

Biotechnology*

Showcase Category: STEM (General)

Standard Items Judged

Documentation

Display

Semifinalists Presentation

CAD Foundations*

Showcase Category: Architecture, Construction and Design

Standard Items Judged

Layout

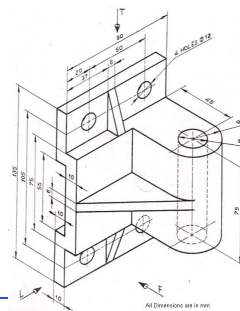
Software Utilization

*It is recommended to submit the set of orthographic drawings in PDF format as well as the original CAD files.

Showcase Prompt

Using the isometric drawing, create a set of orthographic drawings showing Front, Top, and Right sides (A larger image is located in the MS Prompt PDF file)

- Show Centerlines
- Dimension drawing in mm
- Create a title block with ID#, date, scale
- Title the drawing "Bracket"



Going Beyond Suggestion:

Design the product the bracket fits on.

Middle School: Level 1

!Career Prep

Showcase Category: Leadership

Participants are to select a career from one (1) of the following career clusters:

- Manufacturing
- Marketing, Sales, & Service
- Agriculture, Food, and Natural Resources
- Education and Training

Standard Items Judged

Letter of Introduction
Event Specific Resume
Semifinalist interview

Showcase Prompt for Semifinalist Interview

Demonstrate your growing career readiness in your chosen field. Prepare for an interview by researching common interview questions from companies in this field and record your answers in preparation for your interview day.

Going Beyond Suggestion:

Simulate and video you being interviewed.

Challenging Technology Issues*

Showcase Category: Leadership

Standard Items Judged

Pro Side presentation
Con Side presentation

Showcase Prompt

Prepare a presentation on the "the impact of Covid-19 on middle school learning."

Going Beyond Suggestion:

Brainstorm ways to improve any issues you identify as negative

Chapter Team

Showcase Category: Leadership

Standard Items Judged

Written Test (no test in 2020)
Business Meeting Presentation

Showcase Prompt

Demonstrate the ability of a TSA chapter to still have proper chapter meetings virtually, include various elements from Robert's Rules of Order as you conduct your meeting.

Going Beyond Suggestion:

Critique your, or other videoed meetings, identifying elements from Robert's Rules of Order which have either been properly carried out or misused.

Middle School: Level 1

Children's Stories*

Showcase Category: Communication and Media Technology

Theme:

Pop-Up STEM Book

Choose one of the following themes for your pop-up book:

1. Communicate how increases in human population and consumption of natural resources impact Earth's systems.
2. Discusses the rise in global temperatures over the past century.
3. Describe or give an example of how synthetic materials come from natural resources.

Standard Items Judged

Documentation

Storybook (DO NOT send the Book work to include quality images of it)

Semifinalist Reading and Interview

Coding

Showcase Category: Computer Science and Information Technology

Scratch programming language is recommended for this event.

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

Standard Items Judged

Written Test (no test 2020)

On-Site Problem

Showcase Prompt

Recreate an "old school" classic game (such as Breakout or Frogger).

Going Beyond Suggestion:

Give "old school" a modern look.

Community Service Video

Showcase Category: Communication and Media Technology

Standard Items Judged

Video Production

Video Effectiveness

Semifinalist Interview

Middle School: Level 1

Construction Challenge

Showcase Category: Architecture, Construction and Design

Standard Items Judged

Display

Portfolio

Semifinalist presentation

Cybersecurity -NEW-

Showcase Category: Computer Science and Information Technology

Theme:

Stark industries recently had a data breach that affected their daily operations. It was discovered that the compromise was related to system administrator reusing the same password across multiple websites and computer systems. At the time of the breach, he did to have multi-factor authentication enabled on his work computer.

Explain the importance of why you shouldn't reuse passwords and how multifactor authentication could have prevented this breach. In addition, how would you address concerns from employees about having multiple passwords and having to deal with multi factor authentication.

Standard Items Judged

Written Test (no test 2020)

Semifinalist presentation (use the original theme)

Data Science and Analytics* -NEW-

Showcase Category: Computer Science and Information Technology

Theme:

The number of species classified as endangered is constantly in flux due to various factors such as: Human activities, Environmental impacts, Climate change and decline of resources.

Standard Items Judged

Supporting Documentation (use original theme)

Display

Presentation of entry

Semifinalist Presentation/Interview (use Showcase prompt)

Showcase Prompt

Locate a set of data based on the Covid-19 outbreaks around the country and the responses of those states. Using the data, rank the states based on how their responses "flatten the curve."

Going Beyond Suggestion:

Identify examples of how data can be manipulated to show what the analyst wants it to show.

Middle School: Level 1

!Digital Photography*

Showcase Category: Communication and Media Technology

Theme:

Nature (5 photos)

Standard Items Judged

Portfolio Album (use original theme)

Semifinalist Challenge (use Showcase prompt)

Semifinalist Interview

Showcase prompt

Create a short series of photographs which help others visualize how people in your community/household are handling the "Stay-at-Home" orders.

Going Beyond Suggestion:

Include a way you would prepare the collection to use in an art show.

Dragster

Showcase Category: Manufacturing and Transportation Technology

Clarification:

Please note the changes to the below specifications on p.132 of the 2020 and 2021 Middle School Competitive Events Guide. The spacer washers used shall not exceed ten (10), and the axle clips shall not exceed four (4). These quantities indicate **maximum amounts**, not *minimum*, as printed in the guide.

Spacer washers/clips		
	MINIMUM	MAXIMUM
1. Spacer washers		10
2. Axle clips		4

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.

The total **maximum**, not *minimum*, **width including wheels is 90mm.**

Dragster body		
	MINIMUM	MAXIMUM
1. One (1)-piece, all-wood construction		
a. Two (2) or more like or unlike pieces of wood glued together are not considered one (1)-piece, all-wood construction.		
b. Any type of lamination will result in disqualification.		
c. No add-ons, such as body strengtheners, fenders, plastic canopy, exhausts, or air foils may be attached to or enclosed within the vehicle.		
d. Fiberglass and shrink wrap are considered body strengtheners and cannot be used on the car body for any reason.		
e. 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	280mm	300mm
3. Body height with wheels		75mm
4. Body mass (completed car without CO ₂)	[*] (2020) – 50g	80g
[*] denotes specific school year requirement	[*] (2021) – 60g	85g
5. Body width at the point the axles pass through the body, front and back	35mm	42mm
6. Vehicle total width (including wheels).		90mm

Standard Items Judged

Dragster Construction (including drawing)

Top 16 Interview

Middle School: Level 1

Electrical Applications

Showcase Category: STEM (General)

Standard Items Judged

Written Test (no test 2020)

Semifinalist Challenge (use Showcase prompt)

Semifinalist Interview

Showcase Prompt

Create a schematic and the circuit that goes with it.

Going Beyond Suggestion:

Simulate a way to show someone who doesn't have access to electrical components how to learn to identify and use them.

Essays on Technology*

Showcase Category: Communication and Media Technology

Topic:

Post-secondary education

Defined as any level of education after high school that can include vocational degree programs, associate degree programs, or bachelor degree programs.

Imagine that you are ready to embark on the post-secondary path of your educational career in a technology related field. Analyze each subtopic as it relates to programs offered within this field and the cost. Choose a program within each post-secondary institution that fits your interests and write an essay. Discuss career possibilities for which the program would prepare you. You may include such information as salary structures, specialized locations, job demand, and job risks. Remember, each subtopic is independent of the others.

Subtopics

- Trade Schools/Technical Schools
- Community Colleges
- Four-Year Universities

Standard Items Judged

Detailed Outline

Essay

Flight

Showcase Category: Manufacturing and Transportation Technology

There are two gliders used in this event, one that is prebuilt and brought to conference, the other is built by semifinalists onsite.

Standard Items Judged

Documentation

Flight Times (Prelims and Finals)

Middle School: Level 1

Forensic Technology

Showcase Category: STEM (General)

Topics:

Teams need to be familiar with, and be able to demonstrate the following forensic science concepts:

1. Photographing a crime scene
2. Dusting, lifting and analyzing fingerprints
3. Tool Mark identification and analysis

Standard Items Judged

Written Test (no test 2020)

Skill Demonstration (use Showcase prompt)

Showcase Prompt

Create an interactive, resettable crime scene which could be used in to demonstrate to others how to critically assess a crime scene.

Going Beyond Suggestion:

Create a series of tutorial videos which demonstrate clearly how to use the skills needed for analyzing a crime scene.

Foundations of Information Technology -NEW-

Showcase Category: Computer Science and Information Technology

Standard Items Judged

Written Test (no test 2020)

Semifinalist On-Site Problem (use Showcase prompt)

Showcase Prompt

Create a short "how to" that explains to the viewer/user what they need to know so that they can use the software, software tool or digital application with little help.

Going Beyond Suggestion:

Video someone using the "How to" and get feedback from the user.

Invention Innovations

Showcase Category: STEM (General)

Theme:

Today's Society moves at a faster pace than ever before. This year's theme is for a mobile device to make everyday life on the go easier to handle.

Standard Items Judged

Static Entry (Display and Prototype)

Semifinalist Presentation/Interview

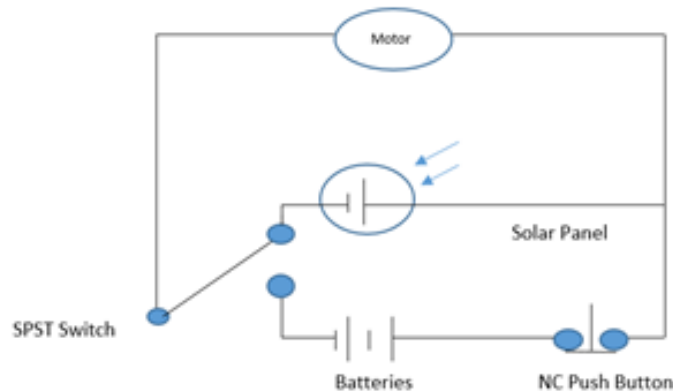
Junior Solar Sprint

Showcase Category: Manufacturing and Transportation Technology

UPDATE:

1. Page 191-Section D, Number 11

JSS Wiring Diagram



2. 15b should be removed.
3. Page 101-Section E should read:

"A student-designed attachment device must be part of the car to accommodate the easy attachment and removal from a guide wire for steering. A purchased screw eye or eye bolt is not considered a student designed attachment device."

4. Please note there is a new interview section for semifinalists.
5. Focus groups for advisors and JSS participants are required at the national JSS event.
6. See the [JSS competition rubric](#).

Standard Items Judged

Display and Model
Documentation
Race

Leadership Strategies*

Showcase Category: Leadership

Standard Items Judged

On-Site Presentation (use Showcase prompt)

Showcase Prompt

With the current Covid-19 situation and the "Stay-at-Home" order, local TSA chapters will be challenged to maintain membership, interest, and individual growth. Develop a plan which keeps your members excited about TSA and keeps them connected to one another.

Going Beyond Suggestion:

Put your plan into action and critique the results, then make a new plan.

Middle School: Level 1

Mass Production

Showcase Category: Manufacturing and Transportation Technology

Theme:

An organizer for a teacher's desk

Standard Items Judged

Static Entry

Semifinalist Presentation/Interview

Mechanical Engineering

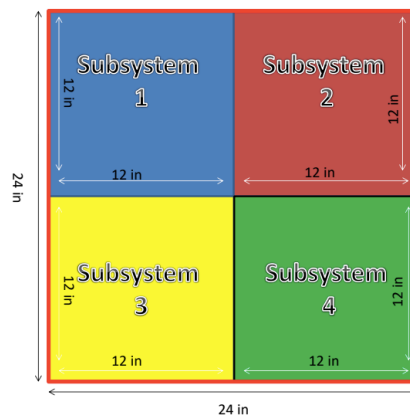
Showcase Category: Manufacturing and Transportation Technology

Theme:

"Rube Goldberg" mechanical device

Teams will design and build a "Rube Goldberg" mechanical device. This device will contain four (4) subsystems that when combined make up a larger system.

- Each subsystem will contain four (4) simple machines in a fun and inventive way.
- Each type of simple machine must be used at least twice across the complete system (all four subsystems).
- The transfer of energy in the device will travel a specific path from start to finish for a minimum of seven (7) seconds per board.
- The device must be self-powered utilizing kinetic energy after the initial touch that starts the device.
- The device must be capable of repeating demonstrations with the reset time for the entire system to be less than 3 minutes.
- The size of each sub system must not exceed 12" wide x 12" deep x 18" tall.
- The entire system must fit within an area of 24" wide x 24" deep x 18" tall.
- Each subsystem should be self-contained to its own 12"x12" base made from a material of your choice (see the diagram below for a visual reference).



Standard Items Judged

Mechanical Device

Semifinalist Presentation/Interview

Middle School: Level 1

Medical Technology*

Showcase Category: STEM (General)

Standard Items Judged

Documents/Display
Model/Prototype
Semifinalist Presentation/Interview

Microcontroller Design

Showcase Category: Computer Science and Information Technology

Theme:

Prototype Laser Game

Standard Items Judged

Documentation
Product
Presentation/Interview

Off the Grid*

Showcase Category: Architecture, Construction and Design Technology

Theme:

Design a home for a family of four (4) in a country that is classified as a developing economy.

Standard Items Judged

Documentation
Design Challenge
Display and Model
Semifinalist Presentation/Interview

Prepared Speech*

Showcase Category: Leadership

Theme:

Inspire a Shared Vision

Standard Items Judged

Content
Stage Presence
Organization

Middle School: Level 1

Problem Solving

Showcase Category: Architecture, Construction and Design Technology

Standard Items Judged

Testing Solution

Showcase Prompt

Almost every student in the country is faced with having limited resources at their disposal. Create your own problem solving challenge which can be solved with the basic supplies most students have in their homes. Make sure to provide a possible solution.

Going Beyond Suggestion:

Challenge someone virtually to complete your problem then evaluate their design.

!Promotional Marketing

Showcase Category: Communication and Media Technology

TSA Marketing Tool Kit:

Invite participants to attend a special interest session at the National TSA Conference that discusses how technologies can mitigate the effects of minimizing human impacts on the environment. Fake names must be used for the special interest presenters and any affiliated organizations (i.e. if using an organization for example, Peta, use "Organization for Animal Ethics" or another fake name).

1. Printable: a trifold brochure advertising the special interest session.
2. Wearable: a t-shirt that promotes minimizing human impacts on the environment
3. Digital Signage: to be displayed in the lobby of the Gaylord that promotes this theme.

Standard Items Judged

Print Design

Wearable Marketing

Digital Signage

Semi Finalist Problem (use Showcase prompt)

Showcase Prompt

There will be a whole new class coming next year who would love to join TSA if they only knew what it was all about. Let them know! Design several elements to be used in a marketing campaign for TSA in your school.

Going Beyond Suggestion:

Run your campaign and report on the results and feedback you get.

Middle School: Level 1

!STEM Animation*

Showcase Category: Communication and Media Technology

Theme:

Podcast Technologies

Context: Podcasting has become one of the most consumed mediums in the world, changing the way that information and entertainment are written, produced and delivered.

Challenge: Create a STEM animation that demonstrates what podcasting is, its production process, and what its future holds.

Standard Items Judged

Portfolio

Animation

Semifinalist Presentation

Structural Engineering

Showcase Category: Architecture, Construction and Design Technology

Challenge: The challenge this year is to research, design, and build a truss tower that uses minimal construction materials but holds the maximum weight possible.

Please click [here](#) for the complete problem statement.

[MS Structural Engineering Analysis and Assessment Form](#)

[MS Structural Engineering Verification form](#)

Standard Items Judged

Pre-Built Structure

Drawing

Onsite Structure

System Control Technology*

Showcase Category: Computer Science and Information Technology

Standard Items Judged

Inventors Log

Solution to Problem

Programming Structure

Showcase Prompt

Design and construct or simulate an automated parking garage. Have a system which keeps track of how many cars are in the garage how signals when it is full. Include an interactive way for the vehicle to enter or exit.

Going Beyond Suggestion:

Add some automated amenities for customers of your automated garage.

Middle School: Level 1

Tech Bowl

Showcase Category: Leadership

Standard Items Judged

Test (no test 2020)

Oral Competition (use Showcase prompt)

Showcase Prompt

Design a new "look" for how Tech Bowl is conducted at TSA State. This could be a new format, new control system, etc.

Going Beyond Suggestion:

Write your own Tech Bowl questions and try them out on somebody. Address how others performed on your questions.

Technical Design

Showcase Category: Architecture, Construction and Design Technology

Standard Items Judged

Solution to Problem (use Showcase Prompt)

Showcase Prompt

With the "Stay-at-Home" order, students now, more than ever, need a way to organize the environment around them in order to establish a better learning environment. Identify an area of your house which is in need a new organizational system. Design a new system which could be produced using available supplies.

Going Beyond Suggestion:

Construct your design and try it out, then evaluate the results.

!Video Game Design

Showcase Category: Computer Science and Information Technology

Standard Items Judged

Documentation

Game Design

Semi-Final Interviews

!Website Design

Showcase Category: Computer Science and Information Technology

Theme: Virtual Reality and Augmented Reality

See National Website for Context and Challenge

Standard Items Judged

Website Development

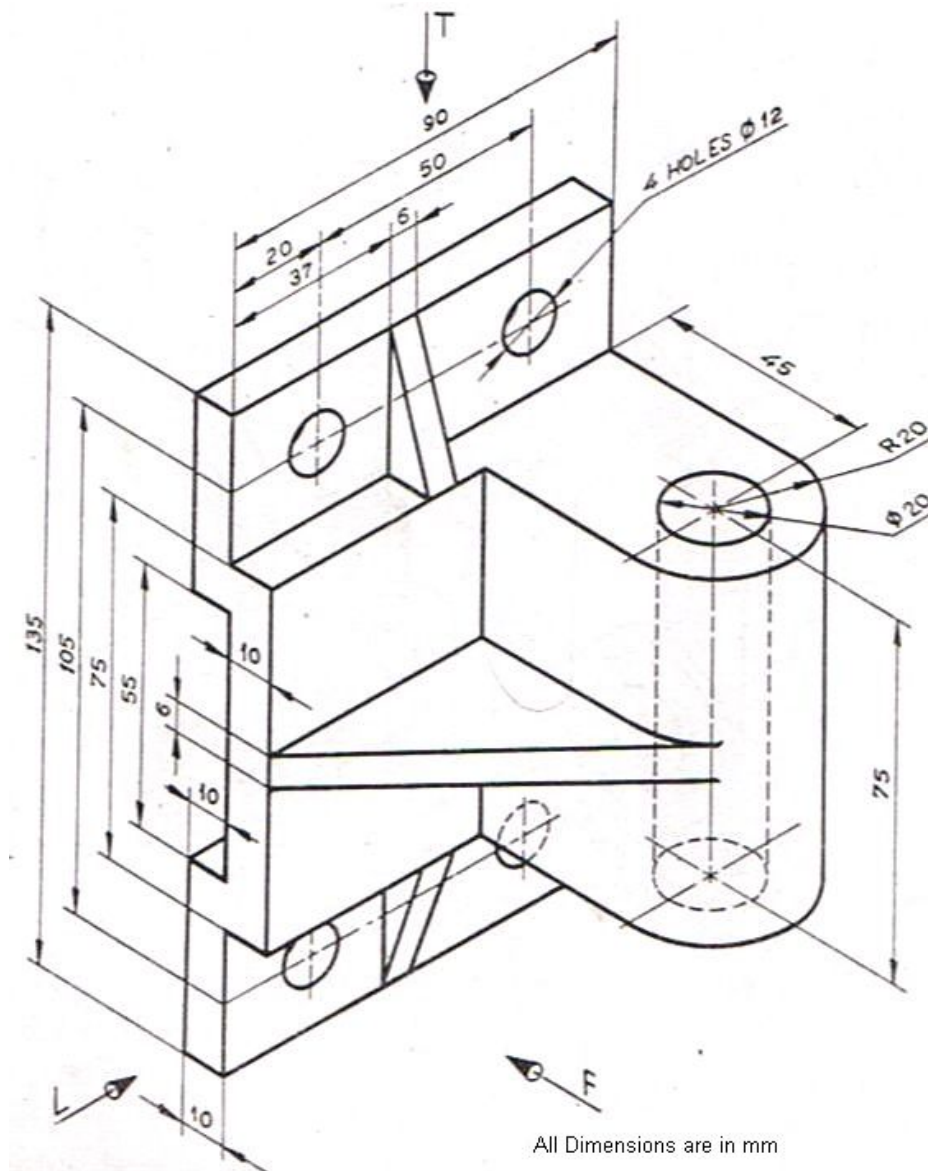
Semi-Final Interviews

MS CAD Foundations

Challenge

Using the isometric drawing, create a set of orthographic drawings showing Front, Top, and Right sides

- Show Centerlines
- Dimension drawing in mm
- Create a title block with ID#, date, scale
- Title the drawing "Bracket"



Going Beyond Suggestion:

Design the product the bracket fits on.

MS Career Prep

Challenge

Demonstrate your growing career readiness in your chosen field. Prepare for an interview by researching common interview questions from companies in this field and record your answers in preparation for your interview day.

Going Beyond Suggestion:

Simulate and video you being interviewed.

MS Challenging Technical Issues

Challenge

Prepare a presentation on the "the impact of Covid-19 on middle school learning."

Going Beyond Suggestion:

Brainstorm ways to improve any issues you identify as negative.

MS Chapter Team

Challenge

Demonstrate the ability of a TSA chapter to still have proper chapter meetings virtually, include various elements from Robert's Rules of Order as you conduct your meeting.

Going Beyond Suggestion:

Critique your, or other videoed meetings, identifying elements from Robert's Rules of Order which have either been properly carried out or misused.

MS Coding

Challenge

Recreate an "old school" classic game (such as Breakout or Frogger).

Going Beyond Suggestion:

Give "old school" a modern look.

MS Data Science and Analytics

Challenge

Locate a set of data based on the Covid-19 outbreaks around the country and the responses of those states. Using the data, rank the states based on how their responses "flatten the curve."

Going Beyond Suggestion:

Identify examples of how data can be manipulated to show what the analyst wants it to show.

MS Foundations of Information Technology

Challenge

Create a short "how to" that explains to the viewer/user what they need to know so that they can use the software, software tool or digital application with little help.

Going Beyond Suggestion:

Video someone using the "How to" and get feedback from the user.

MS Digital Photography

Challenge

Create a short series of photographs which help others visualize how people in your community/household are handling the "Stay-at-Home" orders.

Going Beyond Suggestion:

Include a way you would prepare the collection to use in an art show.

MS Electrical Applications

Challenge

Create a schematic and the circuit that goes with it.

Going Beyond Suggestion:

Simulate a way to show someone who doesn't have access to electrical components how to learn to identify and use them.

MS Forensic Technology

Challenge

Create an interactive, resettable crime scene which could be used in to demonstrate to others how to critically assess a crime scene.

Going Beyond Suggestion:

Create a series of tutorial videos which demonstrate clearly how to use the skills needed for analyzing a crime scene.

MS Leadership Strategies

Challenge

With the current Covid-19 situation and the "Stay-at-Home" order, local TSA chapters will be challenged to maintain membership, interest, and individual growth. Develop a plan which keeps your members excited about TSA and keeps them connected to one another.

Going Beyond Suggestion:

Put your plan into action and critique the results, then make a new plan.

MS Problem Solving

Challenge

Almost every student in the country is faced with having limited resources at their disposal. Create your own problem solving challenge which can be solved with the basic supplies most students have in their homes. Make sure to provide a possible solution.

Going Beyond Suggestion:

Challenge someone virtually to complete your problem then evaluate their design

MS Promotional Marketing

Challenge

There will be a whole new class coming next year who would love to join TSA if they only knew what it was all about. Let them know! Design several elements to be used in a marketing campaign for TSA in your school.

Going Beyond Suggestion:

Run your campaign and report on the results and feedback you get.

MS System Control

Challenge

Design and construct or simulate an automated parking garage. Have a system which keeps track of how many cars are in the garage how signals when it is full. Include an interactive way for the vehicle to enter or exit.

Going Beyond Suggestion:

Add some automated amenities for customers of your automated garage.

MS Tech Bowl

Challenge

Design a new "look" for how Tech Bowl is conducted at TSA State. This could be a new format, new control system, etc.

Going Beyond Suggestion:

Write your own Tech Bowl questions and try them out on somebody. Address how others performed on your questions.

MS Technical Design

Challenge

With the "Stay-at-Home" order, students now, more than ever, need a way to organize the environment around them in order to establish a better learning environment. Identify an area of your house which is in need a new organizational system. Design a new system which could be produced using available supplies.

Going Beyond Suggestion:

Construct your design and try it out, then evaluate the results.

2020 Showcase Event Clusters- High School Level 2

Architecture, Construction and Design Technology	Leadership
Architectural Design HS	Chapter Team HS
CAD, Architecture HS	Debating Technological Issues HS
CAD, Engineering HS	Extemporaneous Speech HS
Structural Design & Engineering HS	Future Technology Teacher HS
Technology Problem Solving HS	Prepared Presentation HS
	Technology Bowl HS
Communication- Audio/ Visual Media Technology	Manufacturing and Transportation Technology
3D Animation HS	Computer Integrated Mfg. HS
Digital Video Production HS	Dragster Design HS
Music Production HS	Flight Endurance HS
On Demand Video HS	Transportation Modeling HS
Photographic Technology HS	VEX Robotics Competition HS
Scientific Visualization (SciVis) HS	
Communication- Print & Graphics	STEM (General)
Board Game Design HS	Animatronics HS
Children's Stories HS	Biotechnology Design HS
Essays on Technology HS	Engineering Design HS
Promotional Design HS	Fashion Design and Technology HS
	Forensic Science HS
Computer Science & Information Technology	
Coding HS	
Cybersecurity HS (not in 2020)	
Software Development HS	
System Control Technology HS	
<i>Video Game Design HS</i>	
Webmaster HS	

High School: Level 2

2020 Kansas TSA Digital Showcase

Definitions:

The term "**Standard**" refers to the headings that are on the individual event rubrics in the Official Event Guides.

The term "**Semifinalist**" is used to correlate back to the official event rubrics; everyone should do the Semifinalist portion/presentation of an event.

Use this as guide for what should be included in an entry.

We understand that:

Not all "Standard" items will be submitted due to limitations of the supplies and equipment that a student has on hand.

Items not listed as "Standard" for an event may be submitted to meet the spirit of the event.

!3D Animation*

Showcase Category: Communication- Audio/Visual Media Technology

Theme:

Create a 3D animation that illustrates the impact of humans on the environment.

Standard Items Judged

Documentation

Animation (use original Theme)

Semifinal Project (use Showcase prompt)

Semifinalist Interview

Showcase Prompt

Create an animation of what you miss most about being away from school.

Going Beyond Suggestion:

Animate yourself thinking about what you miss.

Animatronics

Showcase Category: STEM (General)

Theme: Create an Animatronic exhibit for a national park

Standard Items Judged

Demonstration Interview

Model Appearance

Model Function

Semifinalist Interview

!Architectural Design

Showcase Category: Architecture, Construction and Design Technology

Focus: A Community Center

That enhances the ability of the community members to meet, to communicate, to work together, to exercise or play, to learn, and to strengthen the bonds that are the underlying basis of "community." Design will be based on the needs of your community, and your socio-economic area.

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

Standard Items Judged

Documentation
Design Challenge
Model
Semifinalist Presentation/Interview

Biotechnology Design

Showcase Category: STEM (General)

Theme: The use of biotechnology in sports

Standard Items Judged

Documentation
Display (includes possible prototype/model)
Semifinalist Presentation/Interview

Board Game Design

Showcase Category: Communication- Print and Graphics

UPDATE:

The physical game and packaging must be the original work of the team members. The game must be designed, engineered, created, and assembled together solely by the team. *Updated 1/16/19*

Standard Items Judged

Documentation
Packaging
Board Game
Semifinalist Presentation/Interview

High School: Level 2

Chapter Team

Showcase Category: Leadership

Standard Items Judged

Written Test (no test 2020)

Business Meeting Presentation

Showcase Prompt

Demonstrate the ability of a TSA chapter to still have proper chapter meetings virtually, include various elements from Robert's Rules of Order as you conduct your meeting.

Going Beyond Suggestion:

Critique your, or other videoed meetings, identifying elements from Robert's Rules of Order which have either been properly carried out or misused.

Children's Stories*

Showcase Category: Communications- Print and Graphics

Theme:

Design a "choose your own adventure" book for children ages 5-8

Standard Items Judged

Documentation

Storybook (DO NOT send the Book work to include quality images of it)

Semifinalist Reading/Interview

Coding

Showcase Category: Computer Science and Information Technology

Standard Items Judged

Solution Development

Testing of Solution

Showcase Prompt

Create a program which allows your TSA adviser to stay organized even at home. This should include keeping track of chapter finances, attendance in virtual meetings, and competition readiness.

Going Beyond Suggestion:

Make a tutorial video showing your advisor how to use your program.

Computer-Aided Design 2D Architectural*

Showcase Category: Architecture, Construction and Design Technology

Standard Items Judged

Solution to Problem
Layout
Architectural Application
Software Utilization

*It is recommended to submit the set of drawings in PDF format as well as the original CAD files.

Showcase Prompt

Students across Kansas are needing some time out of the house, but most are unable to go anywhere outside of their yard. Design a Kid's Dream Hangout spot in the backyard. It should be between 300-500 square feet and should have all the amenities a kid would need to let the imagination run wild as they do to. Consider the lot to have a 15% grade (slope) and include all drawings necessary to showcase the Hangout.

Going Beyond Suggestion:

Some kids need to be really active, include active climbing, running, jumping, etc. elements.

Computer-Aided Design 3D Engineering*

Showcase Category: Architecture, Construction and Design Technology

Standard Items Judged

Solution to Problem
Layout
Engineering Application
Software Utilization

*It is recommended to submit the set of drawings in PDF format as well as the original CAD files.

Showcase Prompt

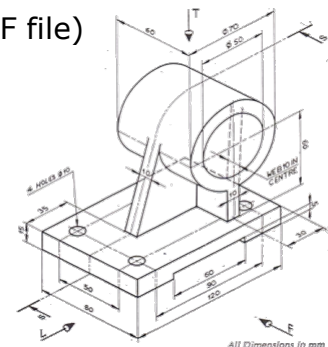
Using the isometric drawing, recreate the isometric drawing as well as producing a set of orthographic drawings showing Front, Top, and Side

(A larger image is located in the next section of HS Prompt PDF file)

- Include Section drawing for view "S"
- Show Centerlines
- Dimension drawing in mm
- Create a title block with ID#, date, scale
- Title the drawing "Bracket"

Going Beyond Suggestion:

Create plans for what this piece attaches to



High School: Level 2

Computer Integrated Manufacturing (CIM)

Showcase Category: Manufacturing and Transportation Technology

Theme:

Students will design and create an original model of one of the simple machines that a teacher can use for a demonstration in class . All designs must be the original work of the students. Pre-made kits and designs will be disqualified. The final product will need to showcase the current conference city and state.

Standard Items Judged

Documentation
Component Analysis
Semifinalist Presentation/Interview

Cybersecurity

Not open at the 2020 State TSA Conference

Debating Technological Issues*

Showcase Category: Leadership

Theme:

Smartphones and Tablets in the Hands of Small Children (Ages 0-10)

Subtopic #1: Smartphones and tablets hinder learning when used in educational settings for children younger than 9 years old.

Subtopic #2: Children are more likely to become addicted to technology if given a smartphone or tablet of their own before age 10.

Subtopic #3: Smartphones and tablets in the hands of small children result in adverse health effects later in life.

Standard Items Judged

Debate

Digital Video Production*

Showcase Category: Communication- Audio/Visual Media Technology

Theme:

A Mystery Film

Standard Items Judged

Preproduction Documentation
Video Production

High School: Level 2

Dragster Design

Showcase Category: Manufacturing and Transportation Technology

There are no special specifications or theme for 2020

Standard Items Judged

Dragster Construction (Including Drawings)

Semifinalist Interview

Race

Engineering Design*

Showcase Category: STEM (General)

Theme:

Identify a need in a developing country and design a project that will empower that community to meet basic human needs (for ideas, check out: [Engineers Without Borders](#) and other similar organizations that are helping people build better, safer communities)

Standard Items Judged

Documentation

Display

Semifinalist Presentation/Interview

Essays on Technology*

Showcase Category: Communication- Print and Graphics

Standard Items Judged

Essay (use Showcase prompt)

Showcase Prompt

Prepare an essay on the "The Impact of Covid-19 on STEM Fields."

Going Beyond Suggestion:

Brainstorm ways to improve any issues you identify as negative.

Extemporaneous Speech*

Showcase Category: Leadership

Standard Items Judged

Speech

Showcase Prompt

Have a parent, teacher, or other responsible adult give you a topic which pertains to TSA, your community, how technology can benefit a group, success through hands-on learning, etc. and video your speech.

Going Beyond Suggestion:

Follow the spirit of the competition and make sure your speech is extemporaneous.

High School: Level 2

Fashion Design and Technology*

Showcase Category: STEM (General)

Theme:

"Futuristic Formal Wear"

Students must design and create three (3) garments to fit the theme "Futuristic Formal Wear". Students will need to integrate technology into each one of their garments. This can include but not limited to; lights, sound and mechanical elements.

Standard Items Judged

Documentation

Patterns

Quality of Garments

Semifinalist Presentation/Interview

Flight Endurance

Showcase Category: Manufacturing and Transportation Technology

Standard Items Judged

Documentation

Flight Times

Forensic Science

Showcase Category: STEM (General)

Standard Items Judged

Written Test (no test 2020)

Analysis of Crime Scene

Showcase Prompt

Create an interactive, resettable crime scene which could be used in to demonstrate to others how to critically assess a crime scene. In the spirit of Whodunits and escape rooms, make observation of clues and critical thinking a staple of solving your crime scene.

Going Beyond Suggestion:

Create a series of tutorial videos which demonstrate clearly how to use the skills needed for analyzing a crime scene.

Future Technology Teacher

Showcase Category: Leadership

Standard Items Judged

Documentation

Semifinalist Presentation

High School: Level 2

Music Production*

Showcase Category: Communication- Audio/Visual Media Technology

Standard Items Judged

Documentation
Musical Piece
Semifinalist Interview

On-Demand Video

Showcase Category: Communication- Audio/Visual Media Technology

Standard Items Judged

Production

Showcase Prompt

Create a 1 minute movie trailer which showcases your life under the "Stay-at-Home" order using the theme of a typical genre (comedy, romance, horror, etc)

Going Beyond Suggestion:

Create storyboards for the opening scene.

!Photographic Technology

Showcase Category: Communication- Print and Graphics

Theme: Action Photos

Standard Items Judged

Portfolio (use Original Theme)
Semifinal Challenge (use Showcase prompt)

Showcase Prompt

Create a multimedia presentation showcasing how people in your community/household are handling the "Stay-at-Home" orders.

Going Beyond Suggestion:

Use the presentation to creatively sell a product.

Prepared Presentation*

Showcase Category: Leadership

Standard Items Judged

Documentation
Stage Presence
Organization

High School: Level 2

Promotional Design*

Showcase Category: Communication- Print and Graphics

Standard Items Judged

Promotional Folder Cover
Promotional Folder Contents
Semifinal Problem

Showcase Prompt

There will be a whole new class of freshman coming into the high school next year who would love to join TSA if they only knew what it was all about. Let them know! Design several elements to be used in a marketing campaign for TSA in your school.

Going Beyond Suggestion:

Run your campaign and report on the results and feedback you get.

Scientific Visualization (SciVis)*

Showcase Category: Communication- Audio/Visual Media Technology

Standard Items Judged

Documentation
Visualization
Semifinalist Interview

Software Development

Showcase Category: Computer Science and Information Technology

Standard Items Judged

Documentation
Software Design
Presentation

Structural Design and Engineering

Showcase Category: Architecture, Construction and Design Technology

Develop a design for a railroad **Trestle Bridge** that spans a canyon that has a river running through it.

Please click [here](#) for the problem statement.

Please click [here](#) for the storage box plan drawing.

HS Structural Team Verification and Analysis [Form](#)

Standard Items Judged

Pre-Built Structure
Onsite Structure

System Control Technology*

Showcase Category: Architecture, Construction and Design Technology

Standard Items Judged

Inventor's Log
Solution to Problem
Programming Structure

Showcase Prompt

Design and construct or simulate a contactless restaurant. There should be a way for orders to be automatically delivered from the kitchen to multiple tables and dirty dishes cleared to the washer. There should also be an ordering kiosk which allows for at least 2 food choices, 3 side choices, and 2 drinks as well as inputting which table the party is sitting.

Going Beyond Suggestion:

Add some automated amenities for customers of your restaurant.

Technology Bowl

Showcase Category: Leadership

Standard Items Judged

Written Test (no test 2020)
Oral Competition (use Showcase prompt)

Showcase Prompt

Design a new "look" for how Technology Bowl is conducted at TSA State. This could be a new format, new control system, etc.

Going Beyond Suggestion:

Write your own Technology Bowl questions and try them out on somebody. Address how others performed on your questions.

Technology Problem Solving

Showcase Category: Architecture, Construction and Design Technology

Standard Items Judged

Testing of Solution

Showcase Prompt

Almost every student in the country is faced with having limited resources at their disposal. Create your own problem solving challenge which can be solved with the basic supplies most students have in their homes. Make sure to provide a possible solution.

Going Beyond Suggestion:

Challenge someone virtually to complete your problem then evaluate their design.

Transportation Modeling

Showcase Category: Manufacturing and Transportation Technology

Theme: A manned surface exploration vehicle for the Moon or Mars.

Consideration must be shown or explained regarding how the vehicle will be transported and assembled at the destination.

Standard Items Judged

Model and Display
Documentation

!Video Game Design*

Showcase Category: Computer Science and Information Technology

Theme: 2020 Olympics

CLARIFICATIONS: Pick one sporting event that is featured in the 2020 Olympics and design a game based on that event. The Olympics itself does not have to be featured in the game. Please note that any reference to the Olympics cannot be used in your project as it violates copyright law.

Standard Items Judged

Documentation
Game Design
Semifinalist Interview

!Webmaster

Showcase Category: Computer Science and Information Technology

Theme: Embracing Electric Vehicles

Challenge:

Create a fictional electric vehicle manufacturing company and design a website. The website should serve as a guide for information about the company and their electric vehicles offered. Present an overview of vehicles as if you were a consumer. Provide the type of vehicles your company creates, sells, and serves. Sections of the site may include photos, vehicle descriptions, specs, company history, contact, and news updates.

Standard Items Judged

Website
Semifinalist Interview

HS 3D Animation

Challenge

Create an animation of what you miss most about being away from school.

Going Beyond Suggestion:

Animate yourself thinking about what you miss.

HS Chapter Team

Challenge

Demonstrate the ability of a TSA chapter to still have proper chapter meetings virtually, include various elements from Robert's Rules of Order as you conduct your meeting.

Going Beyond Suggestion:

Critique your, or other videoed meetings, identifying elements from Robert's Rules of Order which have either been properly carried out or misused.

HS Coding

Challenge

Create a program which allows your TSA adviser to stay organized even at home. This should include keeping track of chapter finances, attendance in virtual meetings, and competition readiness.

Going Beyond Suggestion:

Make a tutorial video showing your advisor how to use your program.

HS Computer Aided Design 2D, Architecture

Challenge

Students across Kansas are needing some time out of the house, but most are unable to go anywhere outside of their yard. Design a Kid's Dream Hangout spot in the backyard. It should be between 300-500 square feet and should have all the amenities a kid would need to let the imagination run wild as they do to. Consider the lot to have a 15% grade (slope) and include all drawings necessary to showcase the Hangout.

Going Beyond Suggestion:

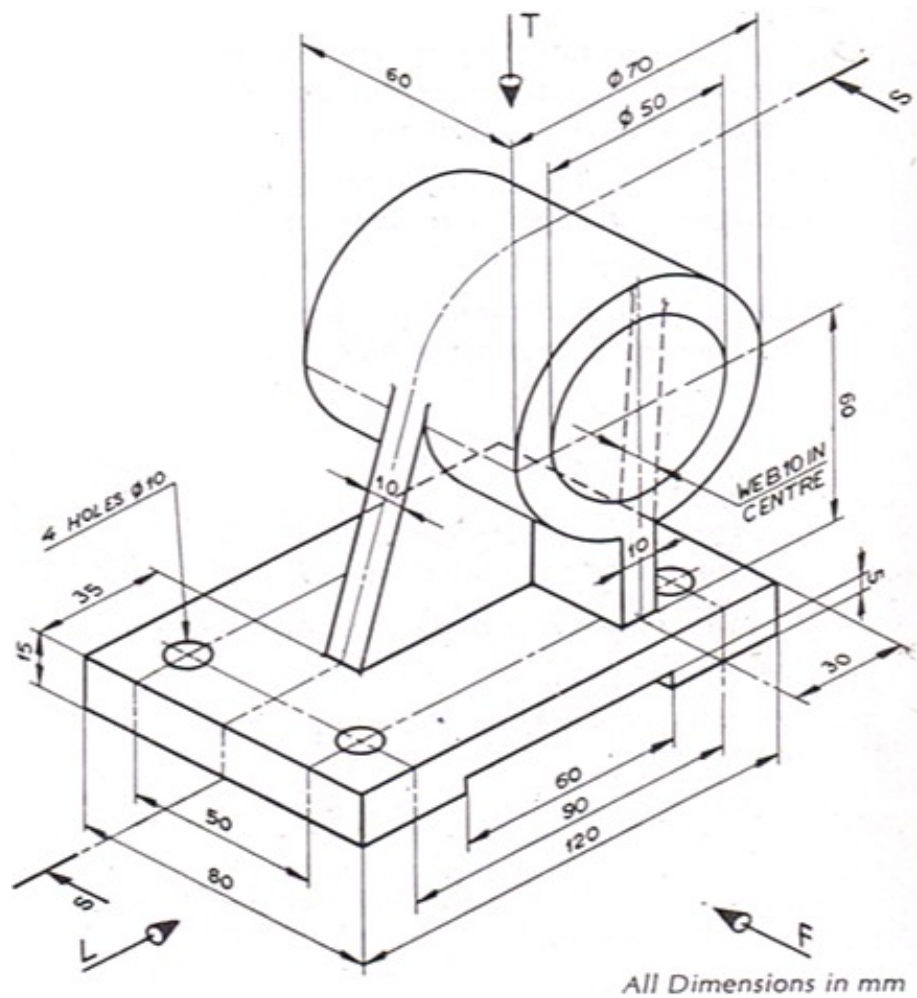
Some kids need to be really active, include active climbing, running, jumping, etc. elements.

HS Computer Aided Design 3D, Engineering

Challenge

Using the isometric drawing, recreate the isometric drawing as well as producing a set of orthographic drawings showing Front, Top, and Side

- Include Section drawing for view "S"
- Show Centerlines
- Dimension drawing in mm
- Create a title block with ID#, date, scale
- Title the drawing "Bracket"



Going Beyond Suggestion:

Create plans for what this piece attaches to.

HS Essays on Technology

Challenge

Prepare an essay on the "The Impact of Covid-19 on STEM Fields."

Going Beyond Suggestion:

Brainstorm ways to improve any issues you identify as negative.

HS Extemporaneous Speech

Challenge

Have a parent, teacher, or other responsible adult give you a topic which pertains to TSA, your community, how technology can benefit a group, success through hands-on learning, etc. and video your speech.

Going Beyond Suggestion:

Follow the spirit of the competition and make sure your speech is extemporaneous.

HS Forensic Science

Challenge

Create an interactive, resettable crime scene which could be used in to demonstrate to others how to critically assess a crime scene. In the spirit of Whodunits and escape rooms, make observation of clues and critical thinking a staple of solving your crime scene.

Going Beyond Suggestion:

Create a series of tutorial videos which demonstrate clearly how to use the skills needed for analyzing a crime scene.

HS On-Demand Video

Challenge

Create a 1 minute movie trailer which showcases your life under the "Stay-at-Home" order using the theme of a typical genre (comedy, romance, horror, etc)

Going Beyond Suggestion:

Create storyboards for the opening scene.

HS Photographic Technology

Challenge

Create a multimedia presentation showcasing how people in your community/household are handling the "Stay-at-Home" orders.

Going Beyond Suggestion:

Use the presentation to creatively sell a product.

HS Prepared Presentation

Challenge

Create and video a presentation over the topic "*TSA: Changing Lives, Changing Futures.*"

Going Beyond Suggestion:

Use a virtual meeting tool to give your speech and have a Q&A session with participants.

HS Promotional Design

Challenge

There will be a whole new class of freshman coming into the high school next year who would love to join TSA if they only knew what it was all about. Let them know! Design several elements to be used in a marketing campaign for TSA in your school.

Going Beyond Suggestion:

Run your campaign and report on the results and feedback you get.

HS System Control Technology

Challenge

Design and construct or simulate a contactless restaurant. There should be a way for orders to be automatically delivered from the kitchen to multiple tables and dirty dishes cleared to the washer. There should also be an ordering kiosk which allows for at least 2 food choices, 3 side choices, and 2 drinks as well as inputting which table the party is sitting.

Going Beyond Suggestion:

Add some automated amenities for customers of your restaurant.

HS Technology Bowl

Challenge

Design a new "look" for how Technology Bowl is conducted at TSA State. This could be a new format, new control system, etc.

Going Beyond Suggestion:

Write your own Technology Bowl questions and try them out on somebody. Address how others performed on your questions.

HS Tech Problem Solving

Challenge

Almost every student in the country is faced with having limited resources at their disposal. Create your own problem solving challenge which can be solved with the basic supplies most students have in their homes. Make sure to provide a possible solution.

Going Beyond Suggestion:

Challenge someone virtually to complete your problem then evaluate their design.