

# 2021 NJ TSA MIDDLE SCHOOL SUPPLEMENT



**Cover Art Inspired By:**

Svana Shankar  
Howell Middle School North  
1st Place Promotional Marketing  
2020 NJ TSA Middle School Conference



## 2020-2021 New Jersey TSA Executive Committee

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Ms. Jennifer Garrity	High Technology High School
Ms. Samantha Mooritz	Marine Academy of Science & Technology

### **State Regional Coordinator**

Ms. Sherry Roses	Howell High School
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### **State Advisor and Corporate Member**

Ms. Alison Goeke, Center for Excellence in STEM Education, Department of Technological Studies, School of Engineering, The College of New Jersey

### **Competitive Event Coordinator**

Mr. Henry Harms, Center for Excellence in STEM Education, Department of Technological Studies, School of Engineering, The College of New Jersey

### **Business Administrator**

Ms. Rebecca Turner, Center for Excellence in STEM Education, Department of Technological Studies, School of Engineering, The College of New Jersey

The 2021 NJ Supplement  
to the  
*TSA Middle School VIRTUAL Competitive Events Guide*  
(for the 2021 National TSA Conference)

**Foreword**

The diverse competitive events that are listed within this booklet are open to TSA chapters affiliated with National TSA, and registered through the NJ TSA State Conference registration system. The Middle School State Conference will be held virtually, in Spring 2021. Competitive event entries will be submitted electronically, by March 29, 2021, and a virtual Awards Ceremony will take place on an April date TBA. Participants wishing to take part in these online competitions may do so FREE of charge; there is no registration fee to participate. All students must be registered in the NJ TSA State Conference Registration System to participate. Students will need the ID# they receive upon conference registration, to label electronic entries.

**How this booklet works**

The *NJ Supplement* works in conjunction with the **National TSA Middle School VIRTUAL Competitive Events Guide**, which you receive access to, online, after affiliation with the National TSA Office has taken place.

This booklet presents the competitive events offered through the NJ TSA Virtual State Conference in alphabetical order as well as the maximum number of participants or teams permitted to compete from each chapter. Each New Jersey competitive event in this booklet lists only the modifications from the National guidelines. Substitute the NJ modification in this booklet for the number or letter on the National guidelines to ensure that your chapter meets the guidelines for the NJ Competitive Events.

**Please be sure to read all sections of the *Supplement* carefully!**

It is the hope of the NJ TSA Executive Committee that this guide will enable teachers, advisors, students and competitive event judges to be better prepared for participation in competitive events this spring.

Any questions may be directed to Ms. Alison Goeke, NJ TSA State Advisor at [goeke2@tcnj.edu](mailto:goeke2@tcnj.edu), Henry Harms, NJ TSA Competitive Event Coordinator, at [harms@tcnj.edu](mailto:harms@tcnj.edu), or Rebecca Turner, NJ TSA Business Manager, at [turner25@tcnj.edu](mailto:turner25@tcnj.edu).

## General Rules Governing Competitive Events

### I. MIDDLE SCHOOL EVENTS

The officially approved **Level I** New Jersey TSA Competitive Events are:

EVENT	ELIGIBILITY
Entries for the following events are due March 2, 2021 (design problems posted February 25, 2021):	
Challenging Technology Issues	2 teams of 2 members per chapter
Essays on Technology	2 individuals per chapter
Leadership Strategies	2 teams of 3 members per chapter. Teams of 1 individual are permitted.
Technical Design	2 teams of 2 members per chapter. Teams of 1 individual are permitted.
Entries for the following events are due March 29, 2021:	
Biotechnology	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
Career Prep	2 individuals per chapter
Children's Stories	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
Coding	2 teams of 2 members per chapter. Teams of 1 individual are permitted.
Community Service Video	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
CAD Foundations	2 individuals per chapter
Construction Challenge	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
Data Science & Analytics	2 teams of 2-3 members per chapter. Teams of 1 individual are permitted.
Digital Photography	2 individuals per chapter
Inventions and Innovations	2 teams of 3-6 members per chapter. Teams of 1 individual are permitted.
Junior Solar Sprint	2 teams of 2-4 members per chapter. Teams of 1 individual are permitted.
Mass Production	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
Mechanical Engineering	2 teams of 3-6 members per chapter. Teams of 1 individual are permitted.
Medical Technology	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
Microcontroller Design	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
Off the Grid	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
Prepared Speech	3 individuals per chapter
Promotional Marketing	2 individuals per chapter
STEM Animation	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
Video Game Design	2 teams of 2-6 members per chapter. Teams of 1 individual are permitted.
Website Design	2 teams of 3-6 members per chapter. Teams of 1 individual are permitted.

## II. PROJECT SUBMISSION

All entries must be emailed to [tsachall@tcnj.edu](mailto:tsachall@tcnj.edu) by 11:59pm on March 29, 2021. Please note the events with an earlier deadline, listed on Page 4, which are due by 5pm on March 2, 2021. For these events, guidelines require a short window of time for students to solve problems. Please see the specific submission requirements listed under each competition in this document.

When emailing entries, the individual or student ID#, and name of the event, must be included in the email subject line. Any attached files should also include ID# and name of event.

Upon registering students in the State Conference Registration System, they are automatically assigned a State Conference ID# (this is different from a National TSA ID#). The State Conference ID# needs to be on all parts of student projects (i.e. portfolios, models, displays, copyright/release forms, etc.). Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).

## III. PARTICIPATION IN COMPETITIVE EVENTS

- A. Participation in the 2021 NJ TSA Middle School Virtual State Conference is FREE.
- B. TSA members may register and participate in no more than **SIX total events**.
- C. Students must be registered in the State Conference Registration System in order to enter and become finalists/winners in a competition.
- D. **No school or individual names labeled on projects**, unless otherwise noted. **Only ID#'s are to be used.** Upon registering students in the State Conference Registration System, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolios, models, displays, copyright/release forms, etc.). Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).
- E. NJ TSA is not responsible for compatibility issues with electronic files. Judges will not be permitted to install programs to view files.
- F. Proper procedures for citing material taken from other sources must be followed as outlined in specific competitive event guidelines. Copyright procedures and forms must be completed and submitted with entries when necessary.
- G. The maximum size of a team is 6 members, unless otherwise designated in a competition's eligibility guideline.
- H. In addition to the information found in the NJ Supplement, participants are responsible for knowing any updates, changes or clarifications that are made to competitive events prior to participation. This information is posted on both the National TSA and NJ TSA websites. It is crucial that students check the Competition Updates page of BOTH the NJ and National TSA websites. DIFFERENT information is posted on each site.

## IV. COMPETITIVE EVENT ATTIRE

ALL STUDENTS APPEARING IN A PRESENTATION VIDEO **MUST** wear either official TSA or business-like attire. Your cooperation with this policy will assist in providing a positive image for the organization and its members.

Please note—the Official TSA Shirt (royal blue) is mandatory for participation at the *National TSA Conference*. Students are strongly encouraged to wear the Official TSA Shirt to the NJ TSA *State Conference*, however, it is not required.

- A. Official TSA Attire:
  - Blazer: navy blue with official TSA patch
  - Tie: scarlet red imprinted with official TSA logo (males only, optional for females)
  - Shirt or blouse: Official TSA Shirt (royal blue) (A white button-down with turn down collar may be substituted for the Official TSA Shirt at the NJ State Conference.)
  - Pants or skirt: light gray
  - Dark socks: males only (black or dark blue)
  - Shoes: black dress shoes (unacceptable: athletic shoes, combat or work boots)
  - Sandals: females only may wear black open toe shoes or sandals
- B. Business-like attire is considered to minimally include:
  - A collared shirt/blouse, long pants (no shorts or jeans), dresses/skirts, socks/hosiery and appropriate footwear.
- C. A polo shirt may be substituted for a collared shirt/blouse.

## VI. AWARDS

### Virtual Awards Ceremony

A virtual Awards Ceremony will take place in April 2021 (date TBA) to celebrate the achievements of NJ TSA members and conference participants. 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place winners of competitions will be recognized.

### TSA Technology Honor Society

The TSA Technology Honor Society recognizes TSA members who excel in academics, leadership, and service to their school and community. The TSA Technology Honor Society is (1) an opportunity for student members to be recognized for their efforts and (2) designed to recognize TSA members who exemplify the high ideals of academics. Please email completed forms to Alison Goeke, [goeke2@tcnj.edu](mailto:goeke2@tcnj.edu) by March 29, 2021. Go to <https://tsaweb.org/resources/student-members/student-achievement-awards> to access forms.

## VII. IMPORTANT DATES AND DEADLINES

<p><b>January 11, 2021</b> NJ State Conference Registration OPENS</p>	<p><b>March 29, 2021</b> Technology Honor Society, State Officer Nominations due.</p>
<p><b>January 11, 2021</b> Design Problems for the following events posted on the <a href="#">NJ TSA website</a>: Coding Computer-Aided Design (CAD) Foundations</p> <p>Note- other design problems/themes for 2021 can be found within this document, and on the <a href="#">National TSA website</a></p>	<p><b>March 30, 2021</b> State Conference Registration CLOSES at 5pm.</p> <p><b>April 2021 (date TBA)</b> NJ TSA Virtual Awards Ceremony</p>
<p><b>February 25, 2021- March 2, 2021</b> Design Problems/themes for the following events are posted at 5pm on February 25, 2021 on <a href="#">NJ TSA website</a>. Completed entries must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by 5pm on March 2, 2021:</p> <p>Challenging Technology Issues Essays on Technology Leadership Strategies Technical Design</p>	<p><b>May 15, 2021</b> Registration and entries due for the Virtual National TSA Conference.</p> <p><b>June 23-26, 2021</b> In-Person National TSA Conference Rosen Shingle Creek Resort Orlando, Florida Theme: Together Towards Tomorrow</p>
<p><b>March 29, 2021</b> The following competitive event entries are due, and must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by 11:59 pm:</p> <p>Biotechnology Career Prep Children’s Stories Coding Community Service Video Computer-Aided Design (CAD) Foundations Construction Challenge Data Science and Analytics Digital Photography Inventions and Innovations Junior Solar Sprint Mass Production Mechanical Engineering Medical Technology Microcontroller Design Off the Grid Prepared Speech Promotional Marketing STEM Animation Video Game Design Website Design</p>	



## Level I – Middle School Virtual Events

### **Biotechnology**

<b>OVERVIEW:</b>	No semifinalists. All teams submit recorded presentation.  <b>Documentation portfolio, digital display, presentation must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> C. 1-2. Entries are to be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include “Biotechnology” and ID# in email subject line. All submitted files must include ID# and “Biotechnology” in the file name. D. Email verification will be provided upon request. E.-F. No semifinalists. Judges score all entries. Winners are announced during online Awards Presentation.</p> <p><u>Semifinal Round:</u> A.1-3. No semifinalists. All teams record a presentation up to five (5) minutes in length. Any team member may participate in presentation. Video presentation should be accessible online (e.g. YouTube) and the URL should be included in the body of the email and in the documentation portfolio. A.4. Presentations may be up to five (5) minutes in length. C. No finalists. Top three winners are announced during online Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#’s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students’ individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Semifinal Round:</u> No semifinalists. All teams record presentation up to five (5) minutes in length.</p> <p>Evaluation is based on 180 points: Digital Display (70) Documentation Portfolio (50) Presentation (60)</p>



## Career Prep

In 2021, students select a career from one (1) of the following career clusters:

- Architecture and Construction
- Health Science
- Law, Public Safety, Corrections, and Security
- Transportation, Distribution, and Logistics

<b>OVERVIEW:</b>	No semifinalists. No mock interview.
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 individuals per chapter.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	Delete C. No semifinalists. No mock interview. Top three winners announced at online Awards Ceremony.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u>            B.1-2. Participants submit the PDF documentation to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a>. Include ID# and “Career Prep” in email subject line. PDF must include ID# and “Career Prep” in file name.            C. Email verification will be made upon request.            D. No semifinalists. Top three winners announced at online Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u>            No mock interview.            Letter and resume submitted online.            Winners announced at Awards Ceremony.</p> <p><i>Please be sure that submissions have fictitious home address and telephone number. Correct participant names must be used.</i></p> <p><b>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the State Conference online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u>            No change.</p> <p><u>Delete Semifinal Round.</u>            No mock interview.</p> <p>Evaluation is based on 80 points:</p> <ul style="list-style-type: none"> <li>• Letter of Introduction (40)</li> <li>• Event Specific Resume (40)</li> </ul>

## Challenging Technology Issues

### 2021 Topics:

- Cashless Society
- Tablets vs Textbooks
- Virtual Appointments
- Police Body Cameras
- Standardized Testing

The assigned topic will be posted on the NJ TSA website at 5pm on February 25, 2021. Teams record their presentation and email it to [tsachall@tcnj.edu](mailto:tsachall@tcnj.edu) by 5pm on March 2, 2021.

Please note—this event has an **earlier due date** than other events. Teams have a limited amount of time to solve the problem and submit their solution.

<b>OVERVIEW:</b>	No change.
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 2 members per chapter.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	Teams will present opposing views on the assigned topic. Teams will record their debate and email the presentation to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> .  A. The assigned topic will be posted on the NJ TSA website at 5pm on February 25, 2021. B. Teams record their presentation and email it to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by 5pm on March 2, 2021. Include “Challenging Technology Issues” and ID# in email subject line. Presentation file must include ID# and “Challenging Technology Issues” in file name. F. Participants are responsible for tracking time and staying within the 4 minute time limit. G.2.-3. There is no prompting by judges. It is a recorded presentation. The team may state the selected topic, then the presentation time will begin once a team member begins to speak. G.5-6. Participants are responsible for tracking the 4 minute time limit. No timekeeper. Recorded presentation. H.-I. No finalists. Top three winners will be announced at Awards Ceremony.
<b>EVALUATION:</b>	No semifinalists. Winners announced at Awards Ceremony.  Evaluation is based on 150 points: <ul style="list-style-type: none"> <li>• Pro Side (70)</li> <li>• Con Side (70)</li> <li>• Participation (10)</li> </ul>

## Children's Stories

2021 Theme: Participants design an interactive book for an elementary school aged student in grades 3-5 on the role of thermal energy in weather related phenomena including thunderstorms and hurricanes.

<b>OVERVIEW:</b>	No change.  <b>Documentation portfolio and storybook must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	Delete E. No semifinalists. No semifinal reading or interview. Winners announced at Awards Ceremony.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> C.1-2. Teams email their entries to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. ID# and "Children's Stories" must be in email subject line. All submitted files must include ID# and "Children's Stories" in the file name. D. Email verification will be made upon request. F. Top three winners will be announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No storybook reading/interview. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No storybook reading/interview.</p> <p>Evaluation is based on 180 points:</p> <ul style="list-style-type: none"> <li>• Digital Storybook (100)</li> <li>• Documentation Portfolio (80)</li> </ul>

## Coding

Design Problem will be posted on the NJ TSA website on January 11, 2021

<b>OVERVIEW:</b>	<p>No test. No programming challenge. Teams demonstrate their knowledge of computer science and coding by solving a design problem, which will be posted on the NJ TSA website on January 11, 2021.</p> <p>No semifinalists. All teams solve design problem.</p>
<b>MANDATORY REQUIREMENTS:</b>	<p>The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.</p> <p>Students must adhere to all guidelines set forth by their school/chapter.</p>
<b>ELIGIBILITY:</b>	2 teams of 2 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> Delete A-C. No exam.</p> <p>Teams will email their completed entry to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a>. ID# and “Coding” must be in email subject line. Any attached files must include ID# and “Coding” in file name.</p> <p>Design Problem will be posted on the NJ TSA website on January 11, 2021 and will contain additional submission criteria.</p> <p><u>Delete Semifinal Round.</u> No coding/programming challenge. No semifinalists. Top three winners will be announced at the Awards Ceremony.</p>
<b>EVALUATION:</b>	Evaluation criteria will be included in the design problem (available January 11, 2021).

## Community Service Video

<b>OVERVIEW:</b>	No change.  <b>The video and required form(s) must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> C.2. and C.4. The URL of the video must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a>. The Student Copyright Checklist (and any required Photo/Film/Video Consent and Release forms) should be attached as a PDF document to the email. Include ID# and “Community Service Video” in the email subject line. PDF files should include ID# and “Community Service Video” in the file name. E. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No interview.</p> <p><b><i>No individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No interview.</p> <p>Evaluation is based on 150 points:</p> <ul style="list-style-type: none"> <li>• Video Production (50)</li> <li>• Video Effectiveness (100)</li> </ul>

## Computer-Aided Design (CAD) Foundations

2021 Design Problem will be posted on the NJ TSA website on January 11, 2021

<b>OVERVIEW:</b>	<p>No change.</p> <p>This design problem will be posted on the NJ TSA website on January 11, 2021.</p>
<b>MANDATORY REQUIREMENTS:</b>	<p>The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.</p> <p>Students must adhere to all guidelines set forth by their school/chapter.</p>
<b>ELIGIBILITY:</b>	2 individuals per chapter.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p>Delete A-E. No online challenge. Design problem will be posted on the NJ TSA website on January 11, 2021. Solution should be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> as a PDF attachment by March 29, 2021. Include ID# and "CAD Foundations" in email subject line. PDF should include ID# and "CAD Foundations" in file name.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b></p>
<b>EVALUATION:</b>	<p>No change.</p> <p>Evaluation is based on 100 points:</p> <ul style="list-style-type: none"> <li>• Layout (70)</li> <li>• Software Utilization (30)</li> </ul>

## Construction Challenge

<b>OVERVIEW:</b>	<p>No semifinalists. No presentation/interview.</p> <p><b>The digital display (including the model/prototype) and documentation portfolio must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b></p>
<b>MANDATORY REQUIREMENTS:</b>	<p>The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.</p> <p>Students must adhere to all guidelines set forth by their school/chapter.</p>
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u>            G.1.-G.2. Digital display and documentation portfolio are emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Construction Challenge” in email subject line. Attached files must include ID# and “Construction Challenge” in file name.            H. Email verification will be made upon request.            I. No semifinalists. Winners are announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round:</u>            No semifinalists. No presentation/interview. Top three winners are announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the State Conference online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b>  <i>Team ID#'s may be used for team events. A Team ID# is the first four numbers of students' individual ID#'s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u>            No change.</p> <p><u>Delete Semifinal Round:</u>            No semifinalists. No presentation/interview. The model/prototype is evaluated with the digital display.</p> <p>Evaluation is based on 100 points:</p> <ul style="list-style-type: none"> <li>• Digital Display (40)</li> <li>• Documentation Portfolio (60)</li> </ul>



## Data Science and Analytics

### 2021 Problem Challenge:

In 2020, the United States government is conducting a national census. Using publicly available data sets, analyze and conduct research on population and demographic trends in your state. Predict the outcomes and how the results could potentially impact your home state.

<b>OVERVIEW:</b>	No semifinalists. No data challenge.  <b>The digital display and documentation portfolio must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 2-3 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> C.1.-C.2. Hyperlink and PDF are emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and "Data Science and Analytics" in email subject line. PDF and other files should include ID# and "Data Science and Analytics" in file name. C.4. Email verification will be made upon request. C.5.-C.6. All Digital Displays and Documentation Portfolios will be judged. No semifinalists. Winners will be announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No data challenge.</p> <p><b>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</b> <b>Team ID#'s may be used for team events. A Team ID# is the first four numbers of students' individual ID#'s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No data challenge. No presentation.</p> <p>Evaluation is based on 130 points: Digital Display (80) Documentation Portfolio (50)</p>

## Digital Photography

2021 Theme: Nature

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

<b>OVERVIEW:</b>	No semifinalists. No semifinalist task.  <b>The photographic portfolio must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 individuals per chapter.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> B.1.-B.2. The PDF of the photographic portfolio must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Digital Photography” in email subject line, and PDF file name. C. Email verification will be made upon request. E. No semifinalists. Winners will be announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No semifinal challenge. No presentation/interview. Top three winners announced at award ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No semifinal challenge. No presentation/interview.</p> <p>Evaluation is based on 60 points:</p> <ul style="list-style-type: none"> <li>• Photographic Portfolio (60)</li> </ul>

## Essays on Technology

2021 Topic: Digital Communication has become a part of all levels of our daily lives. And most recently, an integral part of our socially distant world. Corporations of all sizes use digital communication to conduct business. Educational institutions use digital communication to conduct virtual learning between students and teachers and to communicate with parents. And, digital communication has become a primary tool for staying in touch with friends and family.

Write an argumentative essay in which you discuss different forms of digital communication and the positive and negative effects digital communication has on:

- the corporate world
- education
- personal life

Subtopic will be posted on the NJ TSA website at 5pm on February 25, 2021. All participants email their detailed outline, bibliography, prepared notecards, and completed essay by 5pm on March 2, 2021.

Please note—this event has an **earlier due date** than other events. Teams have a limited amount of time to solve the problem and submit their solution.

<b>OVERVIEW:</b>	No change. Subtopic will be posted on the NJ TSA website at 5pm on February 25, 2021. All participants email their detailed outline, bibliography, prepared notecards, and completed essay by 5pm on March 2, 2021.
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 individuals per chapter.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u>            A.1. Notes for notecards may be handwritten, or typed on a computer. If typed, a 3" x 5" text box should be created on the document to replicate the size of the note card.            C.1-C.2. The subtopic will be posted on the NJ TSA website at 5pm on February 25, 2021. Students must email a PDF of their detailed outline, bibliography, prepared notecards, and completed essay by 5pm on March 2, 2021. Email to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a>. Include ID# and "Essays on Technology" in the email subject line, and in the file name of any attachment(s).            E. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Semifinal Round:</u>            A-H. No semifinalists. All participants write essay.            J. No finalists. Top three winners announced at Awards Ceremony.</p>

<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Semifinal Round:</u> Scores for the essay will be added to scores for the detailed outline.</p> <p>Evaluation is based on 170 points:</p> <ul style="list-style-type: none"><li>• Detailed Outline (80)</li><li>• Essay (90)</li></ul>
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# Inventions and Innovations

2021 Theme: Entertainment

<b>OVERVIEW:</b>	No semifinalists. All teams record an oral presentation.  <b>Interactive digital display (including photos of the model/prototype), and recorded presentation must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 3-6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> C.1.-C.2. Participants email the links to the interactive digital display and sales pitch video to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Inventions and Innovations” in email subject line, and in any file/video names. D. Email verification will be made upon request. E. No semifinalists. All teams submit display and video. Winners announced at Awards Ceremony.</p> <p><u>Semifinal Round:</u> A.1. No semifinalists. All teams make sales pitch video. C.1. and C.3. No semifinalists. All teams email the links to the interactive digital display and sales pitch video to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Inventions and Innovations” in email subject line, and in any file/video names. E. No finalists. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#’s are to be used. Upon registering students for the State Conference online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <b><i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students’ individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Semifinal Round:</u> 1. No semifinalists. All teams submit video presentation.</p> <p>Evaluation is based on 160 points:</p> <ul style="list-style-type: none"> <li>• Digital Display (90)</li> <li>• Video Presentation (70)</li> </ul>

## Junior Solar Sprint

<b>OVERVIEW:</b>	No change.  <b>Documentation portfolio (including photos of completed car) and video must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 2-4 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	D.1.-D.2. PDF of the documentation portfolio, and hyperlink of the video demonstration must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Junior Solar Sprint” in email subject line, and in names of attached files. E. Email verification will be made upon request. G. The top three winners will be announced at the Awards Ceremony.  <b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <b><i>Team ID#'s may be used for team events. A Team ID# is the first four numbers of students' individual ID#'s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></b>
<b>EVALUATION:</b>	No change.  Evaluation is based on 190 points: <ul style="list-style-type: none"> <li>• Video Demonstration and Model Car (80)</li> <li>• Documentation Portfolio (50)</li> <li>• Race (60)</li> </ul>

## Leadership Strategies

Assigned topic will be posted on the NJ TSA website at 5pm on February 25, 2021. Teams record their presentation, and email it by 5pm on March 2, 2021.

Please note—this event has an **earlier due date** than other events. Teams have a limited amount of time to solve the problem and submit their solution.

<b>OVERVIEW:</b>	No change.
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 3 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>REGULATIONS AND REQUIREMENTS:</b>	Delete A-D. The assigned topic will be posted on the NJ TSA website at 5pm on February 25, 2021. Students will record their presentation and email the URL to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by 5pm on March 2, 2021. Include ID# and “Leadership Strategies” in the email subject line, and in file names. K-M. Teams are responsible for tracking their own time. O-P. No finalists. Winners are announced at the Awards Ceremony.
<b>EVALUATION:</b>	No change.  Evaluation is based on 80 points: <ul style="list-style-type: none"> <li>• Presentation (80)</li> </ul>



## Mass Production

2021 Design Challenge: Create a product to assist with disinfecting or encouraging healthy habits in a classroom.

<b>OVERVIEW:</b>	No semifinalists. All teams create a video presentation.  <b>Documentation portfolio (including photos of product) and video must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u>            C.1.-C.2. PDF of the documentation portfolio, and hyperlink of the video demonstration must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Mass Production” in email subject line, and in names of attached file(s).            D. Email verification will be made upon request.            F. No semifinalists. Winners will be announced at the Awards Ceremony.</p> <p><u>Semifinal Round:</u>            A.1. No semifinalists. All teams create video presentation.            C.1-C.3. No semifinalists. All teams email a hyperlink of the video, along with their documentation portfolio to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Mass Production” in email subject line, and in names of attached file(s).            E. No finalists. Top three announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#’s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b>  <i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students’ individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u>            No change.</p> <p><u>Semifinal Round:</u>            No semifinalists. All teams submit video presentation.</p> <p>Evaluation is based on 180 points:</p> <ul style="list-style-type: none"> <li>• Documentation Portfolio and Prototype (110)</li> <li>• Video Presentation (70)</li> </ul>

## Mechanical Engineering

2021 Design Challenge: Teams 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 only two (2) types of simple machines in a fun and inventive way. Each type of simple machine must be used at least twice in the subsystem in which it is placed. All six (6) simple machines must be represented in the final subsystem. 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 three (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 (please refer to the [attached diagram](#) for a visual reference)

<b>OVERVIEW:</b>	No change.  <b>Documentation portfolio and video must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 3-6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	<u>Pre-Conference:</u> No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> C.1-C.2. PDF of the documentation portfolio, and URL of the video presentation must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and "Mechanical Engineering" in email subject line, and in names of attached file(s). D. Email verification will be made upon request. F. No semifinalists. Winners will be announced at the Awards Ceremony.</p> <p><u>Semifinal Round:</u> A.1.-A.2. No semifinalists. All teams create video presentation and email the URL, along with the documentation portfolio, to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and "Mechanical Engineering" in email subject line, and in names of attached file(s). A.3. Teams may designate as many members as they choose to be in the video, and to demonstrate the functionality of the device for judges. A.4. No semifinalists. All teams create video presentation. Teams are allotted a maximum of five (5) minutes to explain their engineering process, and discuss the features of the device. C. No finalists. Top three winners are announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically</i></b></p>

	<p><i>assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></p> <p><i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></p>
<p><b>EVALUATION:</b></p>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Semifinal Round:</u> No semifinalists. All teams do video presentation.</p> <p>Evaluation is based on 170 points:</p> <ul style="list-style-type: none"> <li>• Documentation Portfolio (50)</li> <li>• Mechanical Device (30)</li> <li>• Video Presentation (90)</li> </ul>

## Medical Technology

<b>OVERVIEW:</b>	<p>No semifinalists. No presentation/interview.</p> <p><b>Digital display and video must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b></p>
<b>MANDATORY REQUIREMENTS:</b>	<p>The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.</p> <p>Students must adhere to all guidelines set forth by their school/chapter.</p>
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u>  D.1.-D.2. Participants email a hyperlink to the digital display, and a separate hyperlink to the video demonstration, to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Medical Technology” in email subject line, and in any file name(s).  E. Email verification will be made upon request.  G. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u>  No semifinalists. No presentation/interview. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b>  <i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u>  No change.</p> <p><u>Delete Semifinal Round.</u>  No semifinalists. No presentation/interview.</p> <p>Evaluations will be based on 130 points:</p> <ul style="list-style-type: none"> <li>• Digital Display (80)</li> <li>• Model/Prototype (40)</li> <li>• Video (10)</li> </ul>

## Microcontroller Design

2021 Design Challenge: Design an interactive platform to promote reading and math to early elementary schoolers.

<b>OVERVIEW:</b>	No change.  <b>Documentation portfolio (including photos of the product) and video must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u>            C.1.-C.2. Participants email the PDF of their documentation portfolio, and hyperlink to the video presentation, to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Microcontroller Design” in email subject line, and in any file name(s).            D. Email verification will be made upon request.            F. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Semifinal Round:</u>            A.-B. No semifinalists. All teams create a video presentation and email the hyperlink, along with their documentation portfolio, to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Microcontroller Design” in email subject line, and in any file name(s).            C. Teams may designate as many members as they choose to be in the video, and to demonstrate the product.            D. No semifinalists. All teams create video presentation up to five (5) minutes in length.            G. No finalists. Top three winners are announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b>  <b><i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u>            No change.</p> <p><u>Semifinal Round:</u>            B. No semifinalists. All teams create a video presentation. No interview.</p> <p>Evaluation is based on 150 points:</p> <ul style="list-style-type: none"> <li>• Documentation Portfolio (20)</li> <li>• Product (90)</li> <li>• Presentation (40)</li> </ul>

## Off the Grid

2021 Design Challenge: Design a home for a family of five (5) in an economically developing country of your choice. The house must be designed in an area that has no access to the power grid. The house must solve one other problem that is specific to the area that the house is being built other than no power grid access.

<b>OVERVIEW:</b>	No presentation/interview.  <b>Digital display and documentation portfolio (both including photos of the model) must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> D.1-D.2. Participants email the PDF of the documentation portfolio and digital display to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and "Off the Grid" in email subject line, and in any file name(s). E. Email verification will be made upon request. F.-G. Judges evaluate the model, display, and documentation portfolio. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No presentation/interview. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <b><i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No presentation/interview.</p> <p>Evaluations will be based on 170 points:</p> <ul style="list-style-type: none"> <li>• Display (40)</li> <li>• Model (50)</li> <li>• Documentation (80)</li> </ul>

## Prepared Speech

2021 Theme: Together Towards Tomorrow

<b>OVERVIEW:</b>	No change.  <b>Video of speech must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	3 individuals per chapter.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS:</b>	B.1. All participants submitting entries for this event must be registered for the NJ State Conference. B.3. Email the URL of the video to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and "Prepared Speech" in email subject line. D. No finalists. Winners are announced at Awards Ceremony.
<b>EVALUATION:</b>	No change.  Evaluation is based on 100 points: <ul style="list-style-type: none"> <li>• Content (30)</li> <li>• Stage Presence (30)</li> <li>• Organization of the Video Presentation (40)</li> </ul>



## Promotional Marketing

2021 Design Challenge for the TSA Marketing Tool Kit: You should approach your design with the following scenario in mind: You are inviting participants to a fictitious special interest session on solar energy at the National TSA Conference that discusses the effects of solar energy on the earth's surface. You should use fake names for any presenters, speakers or organizations that you have taking part in your special interest session. Your tool kit needs to include the following three items:

- **Printable:** Design an 8 ½ by 11 sheet advertising your special interest session to pass out at the conference.
- **Wearable:** a T-shirt that incorporates solar energy on the earth's surface.
- **Digital Signage:** To be displayed at the Rosen Shingle Creek conference space that promotes this theme.

<b>OVERVIEW:</b>	No semifinalists. No semifinalist challenge.  <b>Required documentation and the digital signage must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 individuals per chapter.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> E.1.-E.2. PDF of the required documentation and the digital signage hyperlink must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and "Promotional Marketing" in the email subject line, and in all file names. F. Email verification will be made upon request. G. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No semifinalist challenge. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No semifinalist challenge.</p> <p>Evaluation is based on 150 points:</p> <ul style="list-style-type: none"> <li>• Print Design (50)</li> <li>• Wearable Marketing (50)</li> <li>• Digital Signage (50)</li> </ul>

## STEM Animation

### 2021 Theme: The Gaming PC

Context: Tech hobbyists, enthusiasts, and casual gamers have turned to building DIY gaming PCs to pass the time, develop skills, and entertain in the midst of recent world events.

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

<b>OVERVIEW:</b>	No semifinalists. No presentation.  <b>Documentation portfolio and animation video must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of up to 6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> D.1.-D.2. Participants email the PDF of the documentation portfolio, and the hyperlink of the animation, to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “STEM Animation” in email subject line, and file names. E. Email verification will be made upon request. G. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No presentation/interview. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <b><i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No presentation/interview.</p> <p>Evaluation is based on 80 points:</p> <ul style="list-style-type: none"> <li>• Documentation Portfolio (30)</li> <li>• Animation (50)</li> </ul>

## Technical Design

The 2021 design problem will be posted on the NJ TSA website at 5pm on February 25, 2021.  
Teams email their solution by 5pm on March 2, 2021.

Please note—this event has an **earlier due date** than other events. Teams have a limited amount of time to solve the problem and submit their solution.

<b>OVERVIEW:</b>	No change.
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 2 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Design Preparation:</u> A.-B. The design problem will be posted on the NJ TSA website at 5pm on February 25, 2021. Teams must email their design portfolio as a PDF attachment to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by 5pm on March 2, 2021. Include ID# and “Technical Design” in the email subject line, and in file name(s). E. Entries must be received by March 2, 2021. H. No finalists. Winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#’s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <b><i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students’ individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></b></p>
<b>EVALUATION:</b>	No change.  Evaluation is based on 100 points: <ul style="list-style-type: none"> <li>• Solution (100)</li> </ul>

## Video Game Design

<b>OVERVIEW:</b>	No semifinalists. No on-site interview.  <b>Documentation portfolio and hyperlink/upload to the game entry must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 2-6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> D.1.-D.2. Participants email PDF of documentation portfolio and hyperlink/upload to game entry to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and “Video Game Design” in email subject line, and file names. E. Email verification will be made upon request. G. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No presentation/interview. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the <u>State Conference</u> online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <i>Team ID#s may be used for team events. A Team ID# is the first four numbers of students' individual ID#s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No semifinalist presentation/interview.</p> <p>Evaluation is based on 100 points:</p> <ul style="list-style-type: none"> <li>• Video Game Design (80)</li> <li>• Documentation Portfolio (20)</li> </ul>

## Website Design

2021 Theme: E-Bikes and Transportation

Context: An electric bicycle, also known as an e-bike or booster bike, is a bicycle with an integrated electric motor which can be used for propulsion. Due to recent global events, e-bikes have been seen as an alternative transportation solution within high-density, metropolitan cities.

Challenge: Develop a website that advertises a fictitious business specializing in electronic bicycles. Teams should strive to develop a business website that is interactive, engaging, graphically interesting, and easy to understand. Teams are reminded that the point of their solution should be to advertise the business to potential customers, who want to experience or convert to electronic bicycles.

<b>OVERVIEW:</b>	No semifinalists. No interview.  <b>Website must be finished, submitted, and accessible via the Internet by 11:59 p.m. ET on March 29, 2021.</b>
<b>MANDATORY REQUIREMENTS:</b>	The <i>TSA Student and Parent Consent and Release and Acceptable Use Policy</i> form does NOT need to be forwarded to the NJ TSA office.  Students must adhere to all guidelines set forth by their school/chapter.
<b>ELIGIBILITY:</b>	2 teams of 3-6 members per chapter. Teams of 1 individual are permitted.
<b>ATTIRE:</b>	See Page 6 of this guide for required dress code.
<b>PREPARATION:</b>	No change.
<b>REGULATIONS AND REQUIREMENTS:</b>	<p><u>Preliminary Round:</u> I.1.-I.2. Teams email their hyperlink to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> by March 29, 2021. Include ID# and "Website Design" in email subject line. J. Email verification is made upon request. L. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No interview. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only State Conference ID#'s are to be used. Upon registering students for the State Conference online, they are automatically assigned a State Conference ID#. This number needs to be on all parts of student projects (i.e. portfolio, display, model, etc.)</i></b> <b><i>Team ID#'s may be used for team events. A Team ID# is the first four numbers of students' individual ID#'s (e.g. if a student ID# is 1234567, the Team ID# would be 1234. If there are multiple teams from one chapter for the same competition, include which team they are on (e.g. 1234-1, 1234-2, etc.).</i></b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u> No change.</p> <p><u>Delete Semifinal Round.</u> No semifinalist interview.</p> <p>Evaluation based on 90 points:</p> <ul style="list-style-type: none"> <li>• Website development (90)</li> </ul>