

# TECHNOLOGY ENGINEERING

# Math *Science*



TECHNOLOGY STUDENT ASSOCIATION ®

*Defining*  
YOUR  
FUTURE

## 2018 NJ TSA

## MIDDLE SCHOOL SUPPLEMENT

COVER ART BY:  
MATTHEW RITSAN  
MARLBORO MIDDLE SCHOOL  
1ST PLACE PROMOTIONAL MARKETING  
2017 NJ TSA STATE MIDDLE SCHOOL CONFERENCE

## 2017-2018 New Jersey TSA Executive Committee

### **State Officers**

Seth Britton	President	Marine Academy of Science and Technology
Darren Schachter	Vice President	High Technology High School
Hannah Valdes	Secretary	Colts Neck High School
Jessica Kaiser	Treasurer	Freehold Township High School
Taylor Kohnow	Reporter	Clearview Regional High School
Pareena Patel	Sergeant-at-Arms	Howell High School
Meghan Moir	Historian	Howell High School
Regan Riehl	Parliamentarian	Colts Neck High School

### **State Officer Advisors**

Ms. Melissa Parr	Clearview Regional High School
Ms. Angela Bavaro	Colts Neck High School
Mr. Thomas Jennings	Freehold Township High School
Mr. Robert Dennis	High Technology High School
Ms. Sherry Roses	Howell High School
Ms. Wendy Green	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 Integrative STEM Education, School of Engineering, The College of New Jersey

### **Competitive Event Coordinator**

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

### **Business Administrator**

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



## **Foreword**

The diverse competitive events that are listed within this booklet are open to TSA chapters affiliated through registration with the New Jersey state office of TSA, completed by January 31, 2018. The Middle School State Conference will be held at The College of New Jersey on March 28, 2018.

### **How this booklet works**

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

This booklet presents the competitive events offered at the NJ 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.

### **Competitive Event Categories**

Competitive Events are organized according to the requirements for student participation in those competitions. There are three categories: **On-Site, Pre-Conference and Static**.

“On-site Events” require student participation on conference day. Some On-Site Events may even include components that must be completed and submitted prior to conference day. Because of the time commitment involved, students may participate in only one On-Site Event (and no more than six total events).

“Pre-Conference Events” require that entries be submitted prior to the conference, on a designated submission date established by NJ TSA. These entries are judged days prior to the conference and put on display the day of the conference. Some Pre-Conference events may have components or presentations that also take place the day of the conference.

“Static Events” require students to submit entries on conference day, however, students are not required to remain with their entries or make presentations. Static Events usually consist of students creating a display or prototype. These entries are checked-in the morning of the conference in the designated event room listed in the conference program. Judging takes place behind closed doors. After judging is finished, all entries are put on display for the remainder of the conference day.

### **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 at the State Conference this spring.

Any questions may be directed to Ms. Alison Goeke, NJ TSA State Advisor at (609)771-3244 or [goeke2@tcnj.edu](mailto:goeke2@tcnj.edu) or Henry Harms, NJ TSA Competitive Event Coordinator, at [harms@tcnj.edu](mailto:harms@tcnj.edu).

# General Rules Governing Competitive Events

## I. MIDDLE SCHOOL EVENTS

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

<u><b>ON-SITE</b></u>	<u><b>PRE-CONFERENCE</b></u>	<u><b>STATIC</b></u>
<b>Challenging Technology Issues</b> 2 teams of 2 members per chapter	<b>Biotechnology</b> 2 teams per chapter	<b>Off the Grid</b> – <i>NEW FOR 2018!</i> 2 teams per chapter
<b>Chapter Team</b> 2 teams of 6 members per chapter	<b>CAD Foundations</b> 2 individuals per chapter	<b>System Control Technology</b> 2 teams of 3 members per chapter
<b>Coding</b> – <i>NEW FOR 2018!</i> 2 teams of 2 members per chapter	<b>Career Prep</b> 2 individuals per chapter	
<b>Construction Challenge</b> 2 teams per chapter	<b>Children's Stories</b> 1 team or individual per chapter	
<b>Electrical Applications</b> 2 individuals per chapter	<b>Community Service Video</b> 1 team or individual per chapter	
<b>Essays on Technology</b> 2 individuals per chapter	<b>Digital Photography</b> 2 individuals per chapter	
<b>Flight</b> 2 individuals per chapter	<b>Dragster</b> 2 individuals per chapter <i>(Top 16 cars raced on conference day)</i>	
<b>Forensic Technology</b> 1 team of 2 members per chapter	<b>Mass Production</b> 2 teams of 2 or more members per chapter	
<b>Inventions and Innovations</b> 1 team of at least 3 members per chapter	<b>Medical Technology</b> 2 teams of 2 or more members per chapter	
<b>Junior Solar Sprint</b> 1 team of 2-4 members per chapter	<b>Promotional Marketing</b> 2 individuals per chapter	
<b>Leadership Strategies</b> 2 teams of 3 members per chapter	<b>STEM Animation</b> 2 teams per chapter	
<b>Mechanical Engineering</b> – <i>NEW FOR 2018!</i> 2 teams of 3-6 members per chapter	<b>Technical Design</b> 2 teams of 2 members per chapter	
<b>Microcontroller Design</b> 2 teams of 3-5 members per chapter	<b>Video Game Design</b> 1 team of 2-6 members per chapter	
<b>Prepared Speech</b> 2 individuals per chapter	<b>Website Design</b> 1 team of 3-6 members per chapter	
<b>Problem Solving</b> 1 team of 2 members per chapter		
<b>Structural Engineering</b> 1 team of 2 members per chapter		
<b>Tech Bowl</b> 1 team of 3 members per chapter		

## II. PROJECT SUBMISSION

- A. On-site events require students to submit entries, make presentations and/or participate/compete in activities *at* the conference.
- B. Static events require students to submit a display or prototype the day of the conference, however, there is no presentation component along with the entry.
- C. Pre-Conference events require projects to be submitted and judged *prior to* the conference

- 1. Pre-Conference entries mailed must be received by **March 14 , 2018**

Send to:  
NJ TSA/Alison Goeke  
The College of New Jersey  
2000 Pennington Rd  
Armstrong 103  
Ewing, NJ 08628

Please call (609)771-3244 or email ([tsa@tcnj.edu](mailto:tsa@tcnj.edu)) the NJ TSA office to indicate description/quantity of items being mailed and expected delivery date.

- 2. Entries dropped off at the NJ TSA office at The College of New Jersey must be received by **March 14 , 2018**. Please call (609)771-3244 or email ([tsa@tcnj.edu](mailto:tsa@tcnj.edu)) the TSA office to arrange time for delivery.
  - 3. A Northern NJ drop off site will be available on **March 13, 2018** from 3:30-5:00pm at Heritage Middle School, 20 Foxcroft Drive, Livingston, NJ 07039.
- Items received after these dates may not be included in competitions.
  - Mailed deliveries should include provision for obtaining **proof of delivery**.
  - Packages should include a label or packing slip describing contents.

## III. PARTICIPATION IN COMPETITIVE EVENTS

- A. TSA members may only register and participate in **ONE on-site event**, and no more than **SIX total events**.
- B. Students must be registered at the state conference in order to enter and become finalists/winners in a competition. **NO ON-SITE OR LATE REGISTRATIONS WILL BE ACCEPTED.**
- C. **No substitutions will be accepted after registration closes, or at the conference.** Substitutions in team events will be accepted only from pre-registered applicants, and only under extenuating circumstances.

- D. **No school or individual names labeled on projects** except for Community Service Video and Career Prep which require school/student information. **Otherwise only ID#’s are to be used.** Upon registering students online for the state conference, they are automatically assigned a state conference ID#. **This state conference ID number needs to be labeled on every piece of a project/entry (i.e. portfolios, CD’s/DVD’s, USB drives, models, displays, copyright/release forms, etc.).**
- E. For all entries that require documentation materials (comprising a “portfolio”) secured in a **CLEAR FRONT REPORT COVER**, visit this [site](#) for a sample report cover.
- F. Please be sure to make a copy of all video/electronic files (e.g. Promotional Marketing, STEM Animation, etc.) for yourself before the project is submitted.
- G. Projects/entries are picked up at the time stated in the conference program and/or event display room. All entries not accounted for will be discarded the following day if no arrangements have been made with the NJ TSA office otherwise.
- H. Audio visual equipment will be provided for those competitive events that require it (e.g. laptops, projectors, etc.).
- I. NJ TSA is not responsible for compatibility issues with electronic files. Judges will not be permitted to install programs to view files.
- J. 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.
- K. No electronic communication devices of any kind are permitted during competitions and will result in disqualification.
- L. No one will be permitted to leave a test event and return unless otherwise instructed by judges.
- M. The maximum size of a team is 6 members, unless otherwise designated in a competition’s eligibility guideline.
- N. 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 EVENTS ATTIRE

ALL STUDENTS ATTENDING THE CONFERENCE **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. *For more info go to: <http://www.tsaweb.org/Dress-Code>*

**NOTE:** All students participating at the 2018 National TSA Conference will be required to wear the Official TSA Shirt (royal blue). Students are strongly encouraged to wear the Official TSA Shirt to the 2018 NJ TSA State Conference.

- A. Official TSA Attire:
  - Blazer: navy blue with official TSA patch
  - Tie: scarlet red imprinted with official TSA logo (for males only)
  - 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. The official NJ TSA or National TSA Polo Shirt may be substituted for a collared shirt/blouse.

**Students not wearing official TSA or business-like attire *will lose 20 points from their total score of each event entered and will not be granted entry into the awards ceremony.***

**A 20 point deduction will also result from the wearing of hats.**

**All individuals attending the awards ceremony must present their official State Conference ID Badge provided to them at registration. Anyone not in possession of their badge will not be admitted to the awards ceremony.**

## **V. PROPERTY DAMAGE OR LOSS**

The College of New Jersey and NJ TSA are not responsible for damage to or loss of property brought to the conference.

## **VI. AWARDS**

### TSA Achievement Program

The TSA Achievement Program (bronze, silver, gold awards) is designed to motivate and recognize student members for high effort in a school's technology education program. Bronze, silver, and gold pins will be awarded at the Middle School State Conference. Please provide Alison Goeke ([goeke2@tcnj.edu](mailto:goeke2@tcnj.edu) / Fax# 609-771-3330) with completed forms/Activity Resumes by 5:00pm on March 14, 2018. Go to <http://www.tsaweb.org/Student-Achievement-Awards> to view and print forms.

### 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 send completed forms to Alison Goeke ([goeke2@tcnj.edu](mailto:goeke2@tcnj.edu)/Fax#609-771-3330) by 5:00pm on March 14, 2018. Go to <http://www.tsaweb.org/Student-Achievement-Awards> to view and print forms.

## VII. IMPORTANT DATES AND DEADLINES

### January 15, 2018

- State Conference Registration OPENS

### January 15, 2018

- Design Problems for the following events posted on the [NJ TSA website](#):
  - CAD Foundations
  - System Control Technology
- Note- all other design problems/themes for 2018 can be found on the [National TSA website](#)

### March 1, 2018

- Technical Design brief posted at 5pm on [NJ TSA website](#)

### March 6, 2018

- Technical Design entries must be received by the NJ TSA office, or postmarked, by 5pm.

### March 13, 2018

- All Pre-Conference entries delivered to the Northern NJ Drop-Off Site must be received.

### March 14, 2018

- All Pre-Conference entries must be received at the NJ TSA office.

### March 14, 2018

- Achievement Award, Technology Honor Society and State Officer Nominations must be received at the NJ TSA office by 5pm.

### March 15, 2018

- State Conference Registration CLOSES at 5pm (absolutely no changes can be made after this time).

### March 28, 2018

- NJ TSA Middle School State Conference, The College of New Jersey

### June 22-26, 2018

- National TSA Conference, Orlando, Florida

**Plan now to attend the**  
40<sup>th</sup> Annual  
National TSA Conference  
June 22-26, 2018  
World Congress Center  
Atlanta, Georgia  
Theme: *"A Celebration of Success"*



## Level I – Middle School Events

### **Biotechnology** Pre-Conference Event

<b>OVERVIEW:</b>	No semifinalists. No presentation/interview. Documentation and display submitted Pre-Conference.
<b>ELIGIBILITY:</b>	2 teams per chapter. No semifinalist round.
<b>TIME LIMITS:</b>	No semifinalist interview/presentation.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference along with documentation.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Pre-conference:</u> No change</p> <p><u>Preliminary Round:</u> 1. Entries are submitted Pre-Conference. 4. No semifinalists. Winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> The LEAP Response will be judged with documentation and display. No semifinalist presentation/interview. Top three winners will be announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u> No change</p> <p><u>Delete Semifinal Round.</u> No presentation/interview. LEAP Response submitted with documentation and display Pre-Conference.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b></p>
<b>EVALUATION:</b>	<p>Delete 3. No semifinalist presentation/interview.</p> <p>Evaluation is based on 99 points:</p> <ul style="list-style-type: none"> <li>• Documentation (50)</li> <li>• Display (40)</li> <li>• LEAP Response (9)</li> </ul>

## CAD Foundations

### Pre-Conference Event

2018 Design Problem will be posted on the NJ TSA website on January 15, 2018

<b>OVERVIEW:</b>	<p>No change</p> <p>This design problem will be posted on the NJ TSA website on January 15, 2018.</p>
<b>ELIGIBILITY:</b>	2 individuals per chapter
<b>TIME LIMITS:</b>	<p>Delete 1-3. Entries must be completed during the school year and are submitted Pre-Conference.</p> <p>There is no on-site component.</p> <p>Design problem will be posted on the NJ TSA website on January 15, 2018.</p>
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u> Delete 1-8. Entries are submitted Pre-Conference. No on-site component. No semifinalists.</p> <p><u>Delete Semifinal Round.</u> The LEAP Response is submitted with the entry Pre-Conference. No semifinalists. Top three winners will be announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u> Delete A-D. Delete F-G.</p> <p>Designs submitted on a maximum paper size of 24" x 36" or smaller sheets mounted on a 24" x 36" sheet with no overlapping papers.</p> <p><u>Delete Semifinal Round.</u> LEAP Response submitted with entry Pre-Conference.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b></p>
<b>EVALUATION:</b>	<p>1. Delete "on-site problem." Entries are submitted Pre-Conference.</p> <p>Evaluation is based on 110 points:</p> <ul style="list-style-type: none"> <li>• Layout (70)</li> <li>• Software Utilization (30)</li> <li>• LEAP Response (10)</li> </ul>

## Career Prep

### Pre-Conference Event

In 2018, students select a career from one (1) of the following career clusters:

- Agriculture, Food & Natural Resources
- Manufacturing
- Finance
- Government & Public Administration

<b>OVERVIEW:</b>	No semifinalists. No interview. Letter, resume and LEAP Response submitted Pre-Conference.
<b>ELIGIBILITY:</b>	2 individuals per chapter
<b>TIME LIMITS:</b>	No semifinalists. No interview.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u> 4-5. Letter, resume and LEAP Response are submitted Pre-Conference.</p> <p>6-7. No semifinalists. Top three winners announced at Awards Ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. The LEAP Response is submitted Pre-Conference and judged with the letter and resume. Top three winners announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u> E. Letter, resume and LEAP Response are submitted Pre-Conference. Delete E.</p> <p><i>Please be sure that submissions have fictitious home contact information, social security number, and telephone number when completing application. Correct participant names must be used.</i></p> <p><u>Delete Semifinal Round.</u> No semifinalists. The LEAP Response is submitted Pre-Conference and judged with the letter and resume.</p> <p><b>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</b></p>

<b>EVALUATION:</b>	<p>3. No interview. No semifinalists. All participants submit a LEAP Response to be evaluated.</p> <ul style="list-style-type: none"> <li>• Evaluation is based on 77 points:</li> <li>• Letter of Introduction (40)</li> <li>• Event Specific Resume (30)</li> <li>• LEAP Response (7)</li> </ul>



# Challenging Technology Issues

## On-Site Event

### 2018 Topics:

- Government Leaders and Social Media
- 1-to-1 Technology in School
- FAA Interference with Drones
- Impact of "self-driven" vehicles on society

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	2 teams of 2 members per chapter
<b>TIME LIMITS:</b>	No change
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> Delete 5. No semifinalists.  <u>Delete Semifinal Round.</u> No semifinalists. LEAP Response is judged for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	No semifinalists. LEAP Response evaluated for all teams.
<b>EVALUATION:</b>	2. No semifinalists. All participants submit a LEAP Response to be evaluated.  Evaluation is based on 165 points: <ul style="list-style-type: none"> <li>• Pro Side (70)</li> <li>• Con Side (70)</li> <li>• Participation (10)</li> <li>• LEAP Response (15)</li> </ul>

## Chapter Team On-Site Event

<b>OVERVIEW:</b>	No semifinals. All teams participate in both the written exam and the oral presentation.
<b>ELIGIBILITY:</b>	2 teams of 6 members per chapter. C. No semifinalists. All teams take the written test and participate in the oral presentation.
<b>TIME LIMITS:</b>	B. No semifinalists. All teams make oral presentation. Time-related penalties apply.
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	Participants may wear <b>Official TSA Attire OR Business-Like Attire</b> , as described on Page 6-7 of this guide.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 3. No semifinalists. All teams will make the oral presentation.  <u>Semifinal Round:</u> 1-2. No semifinalists. All teams make oral presentation. 3. The LEAP Response is judged for all teams. No semifinalists. 4. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> A.1. No semifinalists. All teams participate in oral presentation.  <u>Semifinal Round:</u> E-F. No semifinals. All teams participate in oral presentation.
<b>EVALUATION:</b>	1.b. No semifinalists. All teams make oral presentation. Final score based on written test and oral presentation.  2. All teams submit a LEAP Response to be evaluated. No semifinalists.  Evaluation is based on 240 points: <ul style="list-style-type: none"> <li>• Written test (10)</li> <li>• Business Meeting Demonstration (190) + LEAP Response (20)</li> <li>• Possible Bonus (20)</li> </ul>

**Children's Stories**  
**Pre-Conference Event**  
 2018 Theme: STEM Interactive

Participants are to design an interactive book for elementary aged students in grades K-3 on a topic of their choosing in Science, Technology, Engineering or Mathematics (STEM).

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	2 teams per chapter. A team of 1 individual is permitted.
<b>TIME LIMITS:</b>	No Semifinal Round. No on-site component. Portfolio and storybook submitted Pre-Conference.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Pre-conference:</u> No change  <u>Preliminary Round:</u> 2. Storybook, portfolio and LEAP Response submitted Pre-Conference. Delete 4. No semifinalists.  <u>Delete Semifinal Round.</u> No on-site component. LEAP Response is evaluated for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No on-site component. LEAP Response is evaluated for all teams. Top three winners announced at Awards Ceremony.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b>
<b>EVALUATION:</b>	No Semifinal Round. LEAP Response is evaluated for all teams.  Evaluation is based on 198 points: <ul style="list-style-type: none"> <li>• Documentation (50)</li> <li>• Storybook (130)</li> <li>• LEAP Response (18)</li> </ul>

## **Coding** **On-Site Event**

<b>OVERVIEW:</b>	No semifinalists. All teams participate in written test and on-site programming challenge.
<b>ELIGIBILITY:</b>	2 teams of two members per chapter.
<b>TIME LIMITS:</b>	1. Participants have 45 minutes to complete written test. 2. No semifinal round. No semifinalists. All participants have two (2) hours to complete on-site challenge.
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u> Delete 3-4. No semifinalists. All teams participate in written test and on-site challenge.</p> <p><u>Semifinal Round.</u> 1. No semifinalists. All teams participate in written test and on-site challenge. 4. Teams have two (2) hours to design and present their solution. 5. LEAP Response will be judged for all teams. 6. Top three winners will be announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u> No change</p> <p><u>Semifinal Round:</u> No semifinalists. All teams participate in written test and on-site challenge. LEAP Response is evaluated for all teams.</p>
<b>EVALUATION:</b>	<p>1-2. No semifinalists. All teams participate in written test and on-site challenge. LEAP Response evaluated for all teams.</p> <p>Evaluation is based on 165 points:</p> <ul style="list-style-type: none"> <li>• Written test (50)</li> <li>• On-Site Problem- Subjective (20)</li> <li>• On-Site Problem- Objective (80)</li> <li>• LEAP Response (15)</li> </ul>



## Community Service Video

### Pre-Conference Event

<b>OVERVIEW:</b>	No change.
<b>ELIGIBILITY:</b>	1 team per chapter. Entries may be submitted by an individual or group
<b>TIME LIMITS:</b>	No change.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 1. Video and LEAP Response submitted Pre-Conference. 3. No semifinalists.  <u>Delete Semifinal Round.</u> LEAP Response is judged for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> LEAP Response is judged for all teams.
<b>EVALUATION:</b>	2. No semifinalists. LEAP Response is evaluated for all teams.  Evaluation is based on 165 points: <ul style="list-style-type: none"> <li>• Video Production (70)</li> <li>• Video Effectiveness (80)</li> <li>• LEAP Response (15)</li> </ul>

## Construction Challenge

### On-Site Event

<b>OVERVIEW:</b>	No semifinalists. All teams participate in presentation/interview.
<b>ELIGIBILITY:</b>	2 teams per chapter. No semifinalists. All teams participate in presentation/interview. 2-4 representatives per team for the presentation/interview.
<b>TIME LIMITS:</b>	2. No Semifinal Round/semifinalists. All teams participate in presentation/interview.
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 4. No semifinalists. All teams participate in presentation/interview.  <u>Semifinal Round:</u> 1. No semifinalists. All teams participate in presentation/interview. 4. LEAP Response is judged for all teams. No semifinalists. 5. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Semifinal Round:</u> A. No semifinalists. All teams participate in presentation/interview. B. LEAP Response is judged for all teams. No semifinalists.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b>
<b>EVALUATION:</b>	2. No semifinalists. All teams participate in presentation/interview. LEAP Response evaluated for all teams.  Evaluation is based on 132 points: <ul style="list-style-type: none"> <li>• Display (40)</li> <li>• Portfolio (30)</li> <li>• Presentation Interview (50) + LEAP Response (12)</li> </ul>

**Digital Photography**  
**Pre-Conference Event**  
 2018 Theme: Heroes

<b>OVERVIEW:</b>	No semifinalists. No on-site task. Winners announced at award ceremony.
<b>ELIGIBILITY:</b>	2 individuals per chapter
<b>TIME LIMITS:</b>	Delete Semifinal Round. No on-site task. No semifinalists.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u>            1. Participants submit their digital album and LEAP Response Pre-Conference.            4. No semifinalists.</p> <p><u>Delete Semifinal Round</u>            No semifinalists.            No on-site task.            LEAP Response is judged for all teams.            Top three winners announced at award ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u>            No change</p> <p><u>Delete Semifinal Round</u>            No semifinalists.            No on-site task.            LEAP Response is judged for all teams.            Top three winners announced at award ceremony.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b></p>
<b>EVALUATION:</b>	<p>Delete 2. No Semifinal Round. No on-site task. LEAP Response evaluated for all teams.</p> <p>Evaluation is based on 110 points:</p> <ul style="list-style-type: none"> <li>• Album (60)</li> <li>• Photographic Principles and Image Editing (40)</li> <li>• LEAP Response (10)</li> </ul>

## Dragster

### Pre-Conference Event

Throwback Design Challenge: For 2018 we're "flashing back in history" to the late 1970s when TSA was AIASA and the event was called LSRAV (Land Speed Record Assault Vehicle). At that point of time, there were no "Shell bodied Cars". For 2018 all four wheels must be completely exposed. No part of the body may cover any part of front or back wheels, while meeting the specifications below. Also, the rear wheels must meet these specifications for 2018 -

	Min	Max
Rear wheels diameter	30mm	40mm
Rear wheels width (at single surface contact point)	12mm	18mm

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	2 individuals per chapter. 1 entry per individual
<b>TIME LIMITS:</b>	1. Dragster, drawing and LEAP Response submitted Pre-Conference. 2. No interview. <b><i>Cars that do not meet specifications will NOT be raced</i></b>
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 1. Dragster, drawing and LEAP Response submitted Pre-Conference.  <u>Semifinal Round:</u> 1. No interview. 6. Top three winners will be announced at Awards Ceremony.
<b>REGULATIONS:</b>	No interview.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b>
<b>EVALUATION:</b>	Delete 3. No Interview.  Evaluation is based on 123 points: <ul style="list-style-type: none"> <li>• Dragster Construction (50)</li> <li>• LEAP Response (13)</li> <li>• Race (60)</li> </ul> <b><i>The top 16 dragsters meeting specifications will be raced in the double elimination bracket at the conference.</i></b>  <b><u>Cars not meeting specs WILL BE DISQUALIFIED from competition.</u></b> <b><i>Evaluation is based on 123 points.</i></b>



	<p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b></p>
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	<p><b><i>Place ID# on drawings and directly on dragster. It is recommend ID#'s are placed on bottom or back side of dragster with tape or label.</i></b></p>
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## Electrical Applications

### On-Site Event

<b>OVERVIEW:</b>	Written test only. No semifinalists. No on-site problem or interview. Winners announced at award ceremony.
<b>ELIGIBILITY:</b>	2 individuals per chapter
<b>TIME LIMITS:</b>	Delete Semifinal Round. No on-site problem or interview.
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> Delete 3-4. No semifinalists. Top three winners announced at Awards Ceremony.  <u>Delete Semifinal Round.</u> No on-site problem or interview. Written test only. LEAP Response judged for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> A. Answer sheets, paper and pencils provided.  <u>Delete Semifinal Round.</u> No on-site problem or interview. Written test only. LEAP Response judged for all teams. Top three winners announced at Awards Ceremony.
<b>EVALUATION:</b>	Delete 2. No Semifinal Round No on-site problem or interview. Written test only. LEAP Response judged for all teams.  Evaluation is based on 55 points: <ul style="list-style-type: none"> <li>• Written test (50 points)</li> <li>• LEAP Response (5)</li> </ul>

## Essays on Technology

### On-Site Event

2018 Topic: RFID (Radio Frequency IDentification) technology uses radio-frequency electromagnetic fields to automatically identify and track tags attached to objects, animals, and humans. Students must research each of the following subtopics and be prepared to write an essay on one subtopic that will be designated on site at the conference:

- \* Uses of RFID in business and industry
- \* Uses of RFID in domestic animals, livestock, and wildlife
- \* Pros and Cons of RFID implantation in humans

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	2 individuals per chapter
<b>TIME LIMITS:</b>	No semifinalists. All participants write outline (1 hour) and essay (1 hour).
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 7. No semifinalists.  <u>Semifinalist Round:</u> No semifinalists. All participants write essay. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> D. Paper & writing utensils will be provided. O. No semifinalists. All participants write essay on a subtopic.  <u>Semifinalist Round:</u> No semifinalists. All participants write essay.
<b>EVALUATION:</b>	2. No Semifinalists. All participants write outline and essay. LEAP Responses evaluated for all participants.  Evaluation is based on 198 points: <ul style="list-style-type: none"> <li>• Detailed Outline (80)</li> <li>• Essay (100) + LEAP Response (18)</li> </ul>

## **Flight**

### **On-Site Event**

<b>OVERVIEW:</b>	Students bring completed glider, portfolio and LEAP Response to event.
<b>ELIGIBILITY:</b>	2 individuals per chapter
<b>SAFETY:</b>	Safety glasses are not required for this event.
<b>TIME LIMITS:</b>	Delete 1. Students bring completed glider to event
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u>  1. Participants report to event area with their glider, portfolio and LEAP Response.  Delete 2. Glider is constructed off-site.  7. No semifinalists.</p> <p><u>Delete Semifinal Round.</u>  No semifinalists.  LEAP Response is judged for all participants.  Top three winners announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u>  Delete A. Safety glasses are not required for this event.  B.2. Glider is constructed off-site.  D-G. Plane built off-site using specified materials. Catapult provided by NJ TSA.</p> <p><u>Delete Semifinal Round.</u>  No semifinalists. LEAP Response is judged for all participants. Top three winners announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b></p>
<b>EVALUATION:</b>	<p>3. No semifinalists. LEAP Response is evaluated for all participants.</p> <p>Evaluation is based on 66 points:</p> <ul style="list-style-type: none"> <li>• Documentation (60)</li> <li>• Flight Score</li> <li>• LEAP Response (6)</li> </ul>



## Forensic Technology

### On-Site Event

<b>OVERVIEW:</b>	No semifinalists. All teams take written test and analyze mock crime scene. Winners announced at award ceremony.
<b>ELIGIBILITY:</b>	1 team of 2 members per chapter.
<b>TIME LIMITS:</b>	2. No semifinalists. All teams analyze mock crime scene.
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 3-4. No semifinalists. All teams participate in on-site problem.  <u>Semifinal Round:</u> 1. No semifinalists. All teams participate in on-site problem. 3. LEAP Response judged for all teams. 4. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> B. No semifinalists. All teams participate in on-site problem.  <u>Semifinal Round:</u> No semifinalists. All teams participate in on-site problem. LEAP Response judged for all teams.
<b>EVALUATION:</b>	1.b. No semifinalists. All teams participate in on-site problem. 2. No semifinalists. LEAP Response evaluated for all teams.  Evaluation is based on 132 points: <ul style="list-style-type: none"> <li>• Written Test (50)</li> <li>• Analysis of Crime Scene (70)</li> <li>• LEAP Response (12)</li> </ul>

## Inventions and Innovations

### On-Site Event

<b>OVERVIEW:</b>	No semifinalists. All teams participate in oral presentation and interview.
<b>ELIGIBILITY:</b>	<u>Preliminary round:</u> 1 team of 3-6 members per chapter. 1 entry per team.  <u>Semifinal round:</u> No semifinalists. All teams participate in oral presentation and interview.
<b>TIME LIMITS:</b>	No semifinalists. All teams participate in oral presentation and question/answer session.
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Pre-conference:</u> No change  <u>Preliminary Round:</u> 5. No semifinalists. All teams will make an oral presentation.  <u>Semifinal Round:</u> 1. No semifinalists. All teams sign up for an oral presentation. 3. LEAP Response will be judged for all teams. 4. Top three winners will be announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Semifinal Round:</u> A. No semifinalists. All teams make oral presentation.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b>
<b>EVALUATION:</b>	2. No semifinalists. All teams make oral presentation.  Evaluation is based on 165 points: <ul style="list-style-type: none"> <li>• Static Entry (70)</li> <li>• Presentation/Interview (80) + LEAP Response (15)</li> </ul>

## Junior Solar Sprint

### On-Site Event

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	1 team of 2-4 members per chapter. 1 entry per team.
<b>TIME LIMITS:</b>	No change
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> No change  <u>Semifinal Round:</u> 2. LEAP Response judged for all teams. 3. Top three winners will be announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Semifinal Round:</u> E. Top three winners will be announced at Awards Ceremony.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b>
<b>EVALUATION:</b>	In the event of inclement weather, evaluation will be based on 105 points for the model, documentation and LEAP Response (no race).  Evaluation is based on 165 points: <ul style="list-style-type: none"> <li>• Display and Model (40)</li> <li>• Documentation (50)</li> <li>• Race (60)</li> <li>• LEAP Response (15)</li> </ul>

## Leadership Strategies

### On-Site Event

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	2 teams of 3 members per chapter
<b>TIME LIMITS:</b>	No change
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u> Delete 8. No semifinalists. All teams make a presentation.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. All teams make presentation. LEAP Response judged for all teams. Top three winners announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	No semifinals. All teams make a presentation.
<b>EVALUATION:</b>	<p>No change</p> <p>Evaluation is based on 88 points:</p> <ul style="list-style-type: none"> <li>• Presentation (80)</li> <li>• LEAP Response (8)</li> </ul>

**Mass Production**  
**Pre-Conference Event**  
 2018 Theme: Geometric Puzzles

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	2 teams of 2-6 members per chapter. No semifinalists. No presentation/interview. Entries are submitted Pre-Conference.
<b>TIME LIMITS:</b>	No semifinalists. No presentation/interview. Entries submitted Pre-Conference.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Pre-conference:</u> No change</p> <p><u>Preliminary Round:</u> 1. Portfolio, product and LEAP Response are submitted Pre-Conference. 4. No semifinalists. No presentation/interview. Winners are announced at award ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No presentation/interview. LEAP Response will be judged for all teams. Top three winners will be announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u> No change</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No presentation/interview. LEAP Response will be judged for all teams.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b></p>
<b>EVALUATION:</b>	<p>Delete 2. No Semifinal Round. No presentation/interview. LEAP Responses will be evaluated for all teams.</p> <p>Evaluation is based on 121 points:</p> <ul style="list-style-type: none"> <li>• Static Entry (110)</li> <li>• LEAP Response (11)</li> </ul>

## Mechanical Engineering

### On-Site Event

<b>OVERVIEW:</b>	No semifinalists. All teams participate in presentation/interview.
<b>ELIGIBILITY:</b>	2 teams of 3-6 members per chapter.
<b>TIME LIMITS:</b>	No semifinalists. All teams participate in presentation/interview.
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Pre-conference:</u> No change</p> <p><u>Preliminary Round:</u> 4. No semifinalists. All teams do presentation/interview.</p> <p><u>Semifinal Round:</u> 1. No semifinalists. All teams sign up for presentation/interview time. 2. LEAP Response will be judged for all teams. 4. Top three winners announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u> No change</p> <p><u>Semifinal Round:</u> No change</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b></p>
<b>EVALUATION:</b>	<p>2. No semifinalists. LEAP Response will be evaluated for all teams.</p> <p>Evaluation is based on 165 points:</p> <ul style="list-style-type: none"> <li>• Static Entry (70)</li> <li>• Presentation/Interview (80) + LEAP Response (15)</li> </ul>

## Medical Technology

### Pre-Conference Event

<b>OVERVIEW:</b>	No semifinalists. No presentation. Entries are submitted Pre-Conference.
<b>ELIGIBILITY:</b>	2 teams of 2 or more members per chapter. No semifinalists. No presentation. Entries submitted Pre-Conference.
<b>TIME LIMITS:</b>	No semifinalists. No presentation. Entries submitted Pre-Conference.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 3-4. Entries submitted Pre-Conference. 6. No semifinalists.  <u>Delete Semifinal Round.</u> No semifinalists. No presentation. LEAP Response will be judged for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No semifinalists. No presentation. LEAP Response will be judged for all teams.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b>
<b>EVALUATION:</b>	2. No semifinalists. No presentation. LEAP Response will be evaluated for all teams.  Evaluations will be based on 165 points: <ul style="list-style-type: none"> <li>• Documentation (70)</li> <li>• Display (40)</li> <li>• Model/Prototype (40)</li> <li>• LEAP Response (15)</li> </ul>



# Microcontroller Design

## On-Site Event

### 2018 Theme: Wearable Technology

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	2 teams of 3-5 members per chapter. Up to 3 team members may participate in the presentation.
<b>TIME LIMITS:</b>	No change
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 8. No semifinalists.  <u>Delete Semifinal Round.</u> No semifinalists. LEAP Response will be judged for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No semifinalists. LEAP Response will be judged for all teams. Top three winners announced at Awards Ceremony.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b>
<b>EVALUATION:</b>	No change  Evaluation is based on 198 points: <ul style="list-style-type: none"> <li>• Documentation (20)</li> <li>• Product (100)</li> <li>• Presentation (60)</li> <li>• LEAP Response (18)</li> </ul>

## Off the Grid

### Static Event

2018 Theme: Design a home for a family of four (4) and one (1) pet specific to the country that you choose.

<b>OVERVIEW:</b>	No semifinalists. No presentation/interview. Teams submit entries on conference day for judging (Static Event).
<b>ELIGIBILITY:</b>	2 teams per chapter. Delete Semifinal Round. No presentation/interview. Entries submitted on conference day.
<b>TIME LIMITS:</b>	No semifinalists. No presentation/interview. Entries submitted
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 6. No semifinalists.  <u>Delete Semifinal Round.</u> No semifinalists. No presentation/interview. LEAP Response will be judged for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No semifinalists. No presentation/interview. LEAP Response will be judged for all teams.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b>
<b>EVALUATION:</b>	2. Delete Semifinal Round. No semifinalists. No presentation/interview. LEAP Response will be evaluated for all teams.  Evaluations will be based on 187 points: <ul style="list-style-type: none"> <li>• Documentation (80)</li> <li>• Design Challenge (30)</li> <li>• Display and Model (60)</li> <li>• LEAP Response (17)</li> </ul>

**Prepared Speech**  
**On-Site Event**  
 2018 Theme: A Celebration of Success

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	2 individuals per chapter
<b>TIME LIMITS:</b>	No change
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 4. No semifinalists. All students make one speech.  <u>Delete Semifinal Round.</u> No semifinalists. All students make speech. LEAP Response will be judged for all teams. Top three winners announced at award ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No semifinalists. All students make one speech. LEAP Response will be judged for all teams. Top three winners announced at award ceremony.
<b>EVALUATION:</b>	No change  Evaluation is based on 99 points: <ul style="list-style-type: none"> <li>• Content (30)</li> <li>• Stage Presence (30)</li> <li>• Organization (30)</li> <li>• LEAP Response (9)</li> </ul>

## Problem Solving

### On-Site Event

<b>OVERVIEW:</b>	No change
<b>ELIGIBILITY:</b>	1 team of 2 members per chapter
<b>TIME LIMITS:</b>	Change time from 2 to 1.5 hours.
<b>LEAP:</b>	LEAP Response is NOT required for this event.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 1. LEAP Response is NOT required for this event. 2. All equipment/materials provided by NJ TSA 3. Teams are allowed 1.5 hrs. to design and construct solution. 5. No semifinalists.  <u>Delete Semifinal Round.</u> LEAP Response is NOT required for this event. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> Delete D-G. All equipment/materials provided by NJ TSA  <u>Delete Semifinal Round.</u> LEAP Response is NOT required for this event.
<b>EVALUATION:</b>	Evaluation will be based on a scoring guide provided at the event. No LEAP Response is required.

## Promotional Marketing

### Pre-Conference Event

2018 Problem: Design an 11" x 17" poster advertising a chapter fundraiser to attend the 2018 National TSA Leadership Conference. Design a 1 color 6" x 6" logo for a royal blue drawstring bag for your chapter. Create a two (2) minute advertisement for the 1<sup>st</sup> TSA meeting of the school year to be played on the TVs in your school's lobby.

<b>OVERVIEW:</b>	No semifinalists. No on-site problem. Entries submitted Pre-Conference.
<b>ELIGIBILITY:</b>	2 individuals per chapter. 1 entry per individual.
<b>TIME LIMITS:</b>	Delete Semifinal Round. No semifinalists. No on-site problem.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u>  2. Toolkit and LEAP Response are submitted Pre-Conference  5. No semifinalists.</p> <p><u>Delete Semifinal Round.</u>  No semifinalists.  No on-site problem.  LEAP Response will be judged for all participants.  Top three winners announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u>  No change</p> <p><u>Delete Semifinal Round.</u>  No semifinalists.  No on-site problem.  LEAP Response will be judged for all participants.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b></p>
<b>EVALUATION:</b>	<p>No change</p> <p>Evaluation is based on 165 points:</p> <ul style="list-style-type: none"> <li>• Print Design (50)</li> <li>• Wearable Marketing (50)</li> <li>• Digital Signage (50)</li> <li>• LEAP Response (15)</li> </ul>

## STEM Animation

### Pre-Conference Event

2018 Theme: Environmental engineering is an engineering branch that applies scientific and engineering principles while simultaneously using technologies and mathematics to protect humans from the potential harmful effects of adverse environmental factors.

Create a STEM animation that introduces an environmental factor and then shows how environmental engineering could address any potential negative effects.

<b>OVERVIEW:</b>	No semifinalists. No presentation. Entries submitted Pre-Conference.
<b>ELIGIBILITY:</b>	2 teams per chapter. 1 entry per team.
<b>TIME LIMITS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No semifinalists. No presentation. Entries submitted Pre-Conference.
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 1. Entry and LEAP Response submitted Pre-Conference. 4. No semifinalists.  <u>Delete Semifinal Round.</u> No semifinalists. No presentation. LEAP Response will be judged for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No semifinalists. No presentation. LEAP Response will be judged for all teams.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b>
<b>EVALUATION:</b>	Delete Semifinal Round. LEAP Response will be judged for all teams.  Evaluation is based on 88 points: <ul style="list-style-type: none"> <li>• Portfolio (30)</li> <li>• Animation (50)</li> <li>• LEAP Response (8)</li> </ul>

# Structural Engineering

## On-Site Event

2018 Problem Statement: <http://www.tsaweb.org/Themes-and-Problems>  
 2018 Team Verification form: <http://www.tsaweb.org/Themes-and-Problems>

<b>OVERVIEW:</b>	<p>All participants bring the following on conference day to be evaluated:</p> <ul style="list-style-type: none"> <li>• Pre-Built Structure</li> <li>• Three-View Drawing</li> <li>• Team Verification Form</li> <li>• Analysis and Assessment Form</li> <li>• LEAP Response</li> </ul> <p>There is no on-site semifinalist construction problem. All groups are present for testing of their Pre-Built Structures.</p> <p>No semifinalists/finalists. 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> place winners are announced at Awards Ceremony.</p>
<b>ELIGIBILITY:</b>	1 team of 2 members per chapter, one entry per team
<b>SAFETY EYEWEAR:</b>	Safety eyewear is not needed. There is no on-site construction problem.
<b>TIME LIMITS:</b>	Delete B-C. No semifinalists. No on-site construction problem.
<b>LEAP:</b>	LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURES/REGULATIONS:</b>	<p><u>PRE-BUILT STRUCTURE REGULATIONS</u>          No change</p> <p><u>PROCEDURE FOR ON-SITE DESTRUCTIVE TESTING OF PRE-BUILT STRUCTURES</u>          Delete D-E. No semifinalists. No on-site construction problem.</p> <p><u>REGULATIONS AND PROCEDURE FOR SEMIFINALIST ON-SITE CONSTRUCTION AND DESTRUCTIVE TESTING</u>          Delete A-R. No on-site construction problem.          LEAP Response will be judged for all teams.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b></p>
<b>EVALUATION:</b>	Based on the compliance and design efficiency of pre-built structure only. No on-site construction problem. No semifinalists. LEAP Response will be evaluated for all teams.



# System Control Technology

## Static Event

2018 Design Problem will be posted on the NJ TSA website on January 15, 2018

<b>OVERVIEW:</b>	Model is constructed off-site during the school year and submitted on conference day. Design problem will be posted on the NJ TSA website on January 15, 2018.
<b>ELIGIBILITY:</b>	2 teams of 3 members per chapter
<b>LEAP:</b>	No change. LEAP Response submitted at check-in.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u>  Delete 1.  Delete 3--9.  Model is constructed off-site. Students set up their device on conference day and leave instructions for evaluators to operate the device.  Inventor's log is completed off-site.  LEAP Response submitted at check-in.</p> <p><u>Delete Semifinal Round.</u>  LEAP Response will be judged for all teams.  Top three winners will be announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u>  A-I. Design problem will be posted on the NJ TSA website on January 15, 2018. Model is constructed off-site. No on-site portion.</p> <p><u>Delete Semifinal Round.</u>  LEAP Response will be judged for all teams.  Top three winners will be announced at Awards Ceremony.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b></p>
<b>EVALUATION:</b>	<p>No change</p> <p>Evaluation is based on 110 points:</p> <ul style="list-style-type: none"> <li>• Inventor's Log (20)</li> <li>• Solution to Problem (60)</li> <li>• Programming Structure (20)</li> <li>• LEAP Response (10)</li> </ul>

## Tech Bowl

### On-Site Event

<b>OVERVIEW:</b>	All participants will complete a written exam and then participate in the oral event.
<b>ELIGIBILITY:</b>	1 team of 3 members per chapter participate in written and oral part of event.
<b>TIME LIMITS:</b>	<u>Preliminary Round:</u> 2. Forty-five (45) minutes is allowed for this test.  <u>Delete Semifinal Round.</u> All teams will participate in the oral competition.
<b>LEAP:</b>	LEAP Response is NOT required for this event.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Follow procedures listed below. Do not refer to the <i>TSA Competitive Events Guide</i>.</u></p> <ul style="list-style-type: none"> <li>A. Following the written test, team members will report to the oral event area holding room for briefing at the designated time. After briefing, advisors must leave and the team will remain in the holding room until called for competition. Teams may visit with other teams; however, <b><u>no advisors or visitors</u></b> may enter the holding room.</li> <li><b>B. No audience members are permitted into the oral event area.</b></li> <li>C. When instructed to do so, two (2) teams will enter the event area and be seated according to instructions.</li> <li>D. When a team has been defeated in any round of the oral event, the team is out of the competition.</li> <li>E. Questions will be drawn, as needed, from a card file resource bank.</li> <li>F. A team's total score is derived from the correct answers to the questions asked. For each correct answer, a team will receive ten (10) points. When a question has been completely read and a team is recognized to answer, if the team does not answer or answers incorrectly, five (5) points will be deducted from the team's score. In this instance, the other team does not have the opportunity to respond to this question, and the next question is read for both teams. If a question is being read and a team member presses the button before the question is finished, the member must answer completely as stated on the answer card. If the answer given is incorrect, the entire question will be read for the other team.</li> <li>G. A total of twelve (12) questions will be asked per round. <b>No questions will be repeated in another round.</b> In the case of</li> </ul>

	<p>the tie, five (5) additional questions will be asked. This procedure will continue until the tie is broken. The questions will be picked at random from the basic areas tested.</p> <p>H. <u>Bonus Question</u> There will be one additional question (bonus question). The bonus question will be announced, and the team that answers it correctly will have the opportunity to answer one additional question. This is the only time when team members may consult with each other before giving an answer. The team will have ten (10) seconds to give its answer. If a team gives an incorrect answer to the bonus question, then the question will be read to the other team. Bonus point scoring: If a team answers the bonus correctly, that team receives fifteen (15) points; if a team answers the bonus incorrectly, that team loses five (5) points from its score.</p> <p>I. A panel of evaluators will be available to respond to questions concerning acceptable answers.</p> <ol style="list-style-type: none"> <li>1. Rulings on acceptable answers will be made only during the round in question.</li> <li>2. Rulings will be made immediately, to do one of the following: <ol style="list-style-type: none"> <li>a. Accept only the answers listed on the card.</li> <li>b. Accept the student's answer and renew points, or remove the question and read another in its place.</li> <li>c. The rulings of the panel will be final.</li> </ol> </li> </ol>
<b>REGULATIONS:</b>	<p><u>Follow procedures listed below. Do not refer to the <i>TSA Competitive Events Guide</i>.</u></p> <ol style="list-style-type: none"> <li>A. No transmitting or recording devices will be permitted in the event area. No prompting will be permitted.</li> <li>B. The team member who "buzzes in" will have five (5) seconds to answer the question, without discussion.</li> <li>C. The team that answers the bonus question will be allowed ten (10) seconds to discuss the extra question and give an answer.</li> <li>D. After a question is read, the competing teams will have ten (10) seconds to answer. If neither team can answer the question, then another question will be read.</li> <li>E. If a team member "buzzes in" before a question is finished being read, that member must give the exact answer as printed on the card.</li> </ol>
<b>EVALUATION:</b>	<p>Evaluation is based on the total points from the three written tests plus the total points from the oral competition. Awards will be given to the top three (3) teams</p>

## Technical Design

### Pre-Conference Event

2018 Design Problem will be posted on the NJ TSA website on March 1, 2018. Entries must be received in the NJ TSA Office (or postmarked) by 5pm on March 6, 2018.

<b>OVERVIEW:</b>	Problem is solved off-site. Design problem will be posted on the NJ TSA website on March 1, 2018. Entries must be received in the NJ TSA Office (or postmarked) by 5pm on March 6, 2018.
<b>ELIGIBILITY:</b>	2 teams of 2 members per chapter
<b>TIME LIMITS:</b>	Participants will be allowed 2 (school) days to solve the engineering design problem. The design problem will be posted on the NJ TSA website on March 1, 2018 at 5pm. Entries must be received in the NJ TSA Office (or postmarked) by 5pm on March 6, 2018.
<b>LEAP:</b>	No change. LEAP Response submitted with entry Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 1. The design problem will be posted on the NJ TSA website on March 1, 2018 at 5pm. Portfolio and LEAP Response must be received in the NJ TSA Office (or postmarked) by 5pm on March 6, 2018. 4. Delete Semifinal Round. No semifinalists.  <u>Delete Semifinal Round.</u> No Semifinalists. LEAP Response will be judged for all teams. Top three winners will be announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No Semifinalists. LEAP Response will be judged for all teams.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b>
<b>EVALUATION:</b>	No change  Evaluation is based on 110 points: <ul style="list-style-type: none"> <li>• Solution (100)</li> <li>• LEAP Response (10)</li> </ul>

## Video Game Design

### Pre-Conference Event

<b>OVERVIEW:</b>	<p>No semifinalists. No on-site interview. Game and all required documentation submitted Pre-Conference.</p> <p>URL for the video game should be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a>. All required documentation must be submitted as a <u>PDF attachment</u> to the email.</p>
<b>ELIGIBILITY:</b>	<p>1 team of 2-6 members per chapter. No semifinalists. No interview. Entries submitted Pre-Conference.</p>
<b>TIME LIMITS:</b>	<p>1. Change submission date from May 15 to March 14, 2018. Send URL to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a>. Include ID# and "Video Game Design" in subject line.</p> <p>3. Email verification of each team's entry will be made by March 15, 2018.</p> <p>Delete 4. No semifinalists. No on-site interview.</p> <p>URL for the video game should be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a>. All required documentation must be submitted as a <u>PDF attachment</u> to the email.</p>
<b>LEAP:</b>	No change. LEAP Response submitted Pre-Conference.
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<p><u>Preliminary Round:</u> 1-2. Entries due on March 14, 2018. URL for the video game should be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a>. All required documentation must be submitted as a <u>PDF attachment</u> to the email.</p> <p>4. Entries are reviewed by evaluators prior to the NJ State Conference.</p> <p>Delete 5. No semifinalists. No interview. Winners announced at award ceremony.</p> <p><u>Delete Semifinal Round.</u> No semifinalists. No interview LEAP Response will be judged for all teams. Top three winners announced at Awards Ceremony.</p>
<b>REGULATIONS:</b>	<p><u>Preliminary Round:</u> H. Entries become the property of NJ TSA.</p>

	<p><u>Delete Semifinal Round.</u>  No semifinalists.  No interview  LEAP Response will be judged for all teams.</p> <p><b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on student projects.</i></b></p>
<b>EVALUATION:</b>	<p><u>Preliminary Round:</u>  No change</p> <p><u>Delete Semifinal Round.</u>  No semifinalist interview  LEAP Response will be evaluated for all teams.</p> <p>Evaluation is based on 99 points:</p> <ul style="list-style-type: none"> <li>• Documentation (30)</li> <li>• Game Design (60)</li> <li>• LEAP Response (9)</li> </ul>

## Website Design

### Pre-Conference Event

2018 Design Brief: <http://www.tsaweb.org/Themes-and-Problems>

<b>OVERVIEW:</b>	No semifinalists. No interview. Entries submitted Pre-Conference.
<b>ELIGIBILITY:</b>	1 team of 3-6 members per chapter. 1 entry per chapter. No semifinalists. No interview. Entries are submitted Pre-Conference.
<b>TIME LIMITS:</b>	1-2. Change date from May 15 to March 14, 2018. URL must be emailed to <a href="mailto:tsachall@tcnj.edu">tsachall@tcnj.edu</a> . Include ID# and "Website Design" in subject line.  4. Email verification of each team's entry will be made by March 15, 2018.  5. All entries will be available to view at the State Conference.  Delete 6. No semifinalists. No interview.
<b>LEAP:</b>	LEAP Response submitted Pre-Conference as an attachment to the email containing the chapters' entry (URL)
<b>ATTIRE:</b>	See Pages 5-6 of this guide for required dress code.
<b>PROCEDURE:</b>	<u>Preliminary Round:</u> 6. Entries are evaluated prior to the NJ State Conference. Delete 7. No semifinalists. No interview.  <u>Delete Semifinal Round.</u> No semifinalists. No interview LEAP Response will be judged for all teams. Top three winners announced at Awards Ceremony.
<b>REGULATIONS:</b>	<u>Pre-conference/Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No semifinalists. No interview LEAP Response will be judged for all teams.  <b><i>No school or individual names labeled on projects; only ID#'s are to be used. Upon registering students online, they are automatically assigned an ID#. This number needs to be on all parts of student projects.</i></b>



<b>EVALUATION:</b>	<u>Preliminary Round:</u> No change  <u>Delete Semifinal Round.</u> No semifinalist interview LEAP Response will be evaluated for all teams.  Evaluation based on 99 points: <ul style="list-style-type: none"> <li>• Website development (90)</li> <li>• LEAP Response (9)</li> </ul>