

New York State Technology Student Association Competition 2009 – 2010



Level Two Rule Modifications

2009-2010 NYSTSA

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FORWARD

The diverse competitive events that are listed within this booklet are open to NYSTSA chapters registered to compete in the NYSTSA Competition. The competition will be held at SUNY Oswego on Friday March 26th and Saturday March 27, 2010. This packet contains the competitive events in alphabetical order, the maximum number of participants or teams permitted to compete in each event and, the names and contact information of the event coordinators.

As part of membership in NYSTSA every chapter must affiliate with National TSA. When you affiliate with National TSA <www.tsaweb.org> you will be sent the TSA Total TSA CD-ROM. This contains CDs with all the information you will need for membership, competitive events rules and leadership activities. Other than the few events that are unique to NY only modifications that depart from the National guidelines are provided in this packet. To ensure that your chapter meets all NYSTSA guidelines substitute the NY modifications in this packet for the corresponding number or letter on the national guidelines. The paragraph below, from the national website, explains the event rules.

The competitive events program for the 32nd National TSA Conference is governed by the *2009 & 2010 High School Technology Activities, National TSA Conference Competitive Events Guide* (on CD) and the *2010 & 2011 Middle School Technology Activities, National TSA Conference Competitive Events Guide* (on CD). These Events Guides are part of the TSA CD-ROM set and are available from National TSA and include specifications for every event scheduled for the conference in Baltimore, Maryland. Entries for all national competitive events must follow the rules and regulations found in the current middle school and high school *Competitive Events Guides* in the TSA CD-ROM. An overview of all events can be found at <<http://tsaweb.org/Competitions>>.

It is the hope of the student officers, their advisors and the Board of Trustees that this guide will enable students, competitive event judges, and teachers/advisors to better prepare for this exciting competition.

Any questions may be directed to Ms. Evie Weinstein at <nystsa1@yahoo.com>.

I. HIGH SCHOOL EVENT TYPES AND EVENT COORDINATORS

ON-SITE JUDGING*	PRE-COMPETITION JUDGING**
Architectural Model Mike Elliot: melliott@wayne.k12.ny.us	Cyberspace Pursuit Michael Giallombardo: mr_g14625@yahoo.com
Catapult (Simple Machines) Challenge Bruce Salisbury: eagle-3@netzero.com	Film Technology Mike Elliot: melliott@wayne.k12.ny.us
Computer Aided Design 2D, Architectural Mike Elliot: melliott@wayne.k12.ny.us	Promotional Graphic Jay Gauthier: JGauthier@wayne.k12.ny.us
Debating Technological Issues [NEW!] Benjamin Kress: benjamin.kress@hws.edu	
Desktop Publishing Jennifer Hill: Jennifer.Hill@lechase.com	
Dragster Design Challenge Jay Gauthier: JGauthier@wayne.k12.ny.us David Buchner: dbuchner31@hotmail.com	
Electronic Research and Experimentation Mark Hardy: mark.hardy@oswego.edu	
Essays On Technology Judith Belt: judith.belt@oswego.edu	
Extemporaneous Presentation Evie Weinstein: nystsa1@yahoo.com	
Flight Endurance Derek DeMass: ddemass@wayne.k12.ny.us	
Junior Solar Sprint*** David Buchner: dbuchner31@hotmail.com	
Mouse Trap Vehicle*** Bruce Salisbury: eagle-3@netzero.net	
Prepared Presentation Evie Weinstein: nystsa1@yahoo.com	
Structural Engineering Bruce Salisbury: eagle-3@netzero.net Mike Ramsden: Mramsden@hcs.stier.org	
Technical Sketching and Application Michael Giallombardo: mr_g14625@yahoo.com	

***On-Site Judging:** Events that are either prepared at the home school and judged at competition **OR** completed entirely on-site at competition. See individual event descriptions for detail.

****Pre-Competition Judging:** Submitted and judged *prior* to competition.

***These events are unique to New York. Complete rules are in this packet.

II. PARTICIPATION IN COMPETITIVE EVENTS:

- A. Students must be registered at the State Competition in order to enter and become winners in a competition. Pre-registration is required. There is no walk-in registration.
- B. No substitutions will be accepted after registration closes.
- C. Neither school nor individual names can appear on projects; only ID#s are to be used. Students are automatically assigned an ID# which they will receive at check-in. **This number needs to be on all student projects.**
- D. Projects/entries must be picked up at the time stated in the competition agenda.

III. COMPETITIVE EVENTS ATTIRE

ALL STUDENTS ATTENDING THE COMPETITION **MUST** wear either official TSA or business casual TSA attire. Your cooperation with this policy will assist in providing a positive image for the organization and its members.

A. Official TSA attire:

Blazer:	navy blue with TSA patch
Ties/scarves:	official TSA red tie
Shirt or Blouse:	white with collar
Slacks or Skirt:	gray
Shoes:	black dress shoes
Socks:	black or nylon hosiery

B. Business Casual TSA attire should **minimally** include:

A collared shirt/blouse, or a polo shirt with official TSA logo (no t-shirts), long pants (no shorts, cargo, camo or bluejeans), dresses/skirts, socks/hosiery and appropriate footwear (examples of unacceptable footwear would include flip-flops, beach shoes, crocs).

Students NOT wearing New York State attire will lose 20 points from total score of each event entered. Hats are NOT permitted.

IV. PROPERTY DAMAGE OR LOSS

The College of SUNY OSWEGO and NYSTSA are not responsible for damage to or loss of property brought to the competition.

**Architectural Model
Level II
NYSTSA 2010
On-Site Judging**

Overview	Residential home for the average American household (2.61 occupants per residence according to 2006 US Census). These homes will serve as green replacement homes so families that have been displaced by natural disasters will not need to live in FEMA mobile-homes for long periods of time.
Purpose	Demonstrate an understanding and aptitude for the process of green architectural design, basic modeling techniques as well as incorporating energy conservation and the use of healthy building materials in the plan development. USEFUL RESOURCE FOR INFO: www.nyserda.org
Eligibility	Individuals or teams of 2 are acceptable. Up to 4 teams per chapter are acceptable.
Time Limits	No change
Attire	See state overview for acceptable attire
Procedures	B: no semifinalist list. Delete C & D
Regulations	Delete D: Model materials may be chosen by students Home designs may not exceed 1600 sq.ft. E: All participants are encouraged to contact local green builders or green architectural firms to research and observe actual green building current best practices.
Evaluation	There will be no interview included in the evaluation Entries will be evaluated by how well the model and supporting documentation demonstrates the choice and implementation of green building design and energy efficiency. Winning entries will be displayed at the NYSTEA Spring Conference in Poughkeepsie, NY in 2010.
Coordinator:	Michael Elliott: melliott@wayne.k12.ny.us

**Catapult
Level II
NYSTSA 2010
On-Site Judging**

OVERVIEW: TSA of New York students entering the Simple Machines event are required to research, design, draw and build a lever machine (catapult) to demonstrate their knowledge of technology and the principles of simple machines.

EVENT COORDINATOR: Bruce Salisbury eagle-3@netzero.net

- I. **CONTEST PURPOSE:** To provide a means for TSA members to demonstrate their ability to research, design, draw and build a catapult that illustrates the principle of a lever.
- II. **ELIGIBILITY FOR ENTRY:** Up to three students per team. No limit on entries per chapter.
- III. **LEVELS OF COMPETITION:** Level I and II
- IV. **TIME LIMITATIONS:** Participants must present research material, a complete set of drawings and a technical report at the time specified in the conference program.
Catapult must be constructed before arriving at the conference. All participants in this event must arrive and be in place at the specified time and location.
- V. **SPECIFIC REGULATIONS:**
 - A. Entries must be designed and constructed by the student. Contestants may enter only one catapult that has been researched, designed, drawn, and constructed during the current TSA of New York school year.
 - B. Research: A collection of material, which explain the principles of levers as related to the design submitted. May include some pictures.
 - C. Design: Support the principle of simple machines and utilizes research information.
 - D. Drawings: A detail drawing in two views for each part of the catapult that is cut and assembled separately. Must use metric dimensions. Paper no larger than B size with a border and title block as illustrated on the website. Drawings should be developed using standard engineering practices and procedures. The drawings may be produced using traditional drafting methods or CADD. Copies of drawings are acceptable.
 - E. Technical Report: Explanation of overall research involved in designing and constructing the catapult. Must include construction and assembly procedure for the catapult submitted and a description of the launch techniques that should be employed to ensure payload accuracy. Drawings and diagrams may be used to supplement the report.
 - F. Target space will be limited to a 4 foot circle.
 - G. Size of the Catapult project may not be larger than 4 feet cubed. (4ft x 4ft x 4ft)
 - H. Catapults must use a lever only.
 - I. The projectile used will be a standard sized Hacky Sack.

VI. PROCEDURE:

- A. Students will enter the competition before registration deadline.

- B. Participants will follow instruction and event timelines provided at registration.
- C. Completed research, design and drawings turned in at registration.
- D. A pre-launch period is provided so that participants can make adjustments to weights, balance, and fit. Catapults must be returned to the evaluators after the pre-launch period.
- E. Each participant is given three opportunities to launch their catapult to a target (X) feet from the starting point, hand launched from the designated location. The closest opportunity to the target is used to determine accuracy points.

VII. REQUIRED CONTEST PERSONNEL/ EQUIPMENT;

- A. Contest Coordinator
- B. Three judges
- C. Rating sheets for judges
- D. Target
- E. Measuring tape
- F. Large enclosed area (gym)
- G. Triple beam balance
- H. Construction material

VIII. CRITERIA FOR JUDGING:

- A. Research
- B. Design
- C. Drawings
- D. Construction
- E. Technical Report
- F. Accuracy

IX. ACCURACY POINTS

- 1st place 50 points
- 2nd place 46 points
- 3rd place 42 points
- 4th place 38 points
- 5th and 6th place 35 points
- 7th and 8th place 30 points
- 9th to 12th place 25 points
- 13th to 16th place 20 points
- 17th to 18th place 15 points
- All other launched 10 points

**Computer-Aided Design 2D, Architecture
Level II
NYSTSA 2010
On-Site Judging**

Overview	Event prepared prior to conference based on the NYSTSA modifications for the Architectural Model event. Animation is not necessary.
Purpose:	In rendering the plan, demonstrate an understanding and aptitude for the process of green architectural design, as well as incorporating energy conservation and the use of healthy building materials in the plan development. USEFUL RESOURCE FOR INFO: www.nyserda.org
Eligibility:	Individuals or teams of 2 are acceptable. Up to 5 teams per chapter are acceptable.
Time Limits:	Prepared during the current school year
Procedures:	A-F, H-I. Delete The plans drawn will be for the home specified in the Architectural Model event for NY State Competitions 2010
Regulations:	A-D, F. Delete
Evaluation:	Drawings submitted during conference registration are evaluated.
Coordinator:	Michael Elliott: melliott@wayne.k12.ny.us

Architectural Model Overview	Residential home for the average American household (2.61 occupants per residence according to 2006 US Census). These homes will serve as green replacement homes so families that have been displaced by natural disasters will not need to live in FEMA mobile-homes for long periods of time.
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**Cyberspace Pursuit
Level II
NYSTSA 2010
Pre-Competition Judging**

Overview	No change
Purpose:	No change
Eligibility:	Unlimited
Time Limits:	B. Delete Replace C: URL must be submitted to nystsa_cyberspace@yahoo.com by midnight March 12, 2010. All emails will be time stamped which will serve as proof of submitting project by deadline.
Procedures:	D-G. Delete
Regulations:	F. Change to site must be able to be launched in Internet Explorer v5 or higher or Firefox. Delete G.
Evaluation:	B. Delete
Coordinator:	Michael Giallombardo: mr_g14625@yahoo.com

Debating Technological Issues [NEW EVENT]
Level II
NYSTSA 2010
On-Site Judging

Overview	No change. The 2010 topic is: "Technology is the cause of the world's current climate change situation."
Purpose:	No change
Eligibility:	6 teams of two individuals per team.
Time Limits:	Full debate format.
Procedures:	E. Full Debate format will be used. No semifinals F, T, U, W delete
Regulations:	F. No semifinalists
Evaluation:	No change
Coordinator:	Benjamin Kress: benjamin.kress@hws.edu

**Desktop Publishing
Level II
NYSTSA 2010
On-Site Judging**

Overview	No on-site problem given at conference
Purpose:	No change
Eligibility:	This is an individual event and there is no limit to the entries per chapter.
Time Limits:	Delete B and C. Entries must be submitted at the registration on Friday before noon.
Procedures:	Delete C – G.
Regulations:	Delete A, D, E and F. C: Clip art may be used in notebook.
Evaluation:	Evaluation is based on points earned for the notebook.
Coordinator:	Jennifer Hill: Jennifer.Hill@leCHASE.com

Dragster Design
Level II
NYSTSA 2010
On-Site Judging

Overview:	No Change
Purpose:	Design and produce a fast CO2-powered dragster according to the stated specifications and using only certain specified materials.
Eligibility:	Ten individually produced dragsters per chapter.
Time Limits:	No change
Procedures:	Procedure E modification – All cars will be allowed to race. However, cars that do not meet specifications will be assessed a 20% penalty for each rules violation. 20% will be deducted from total points earned. Delete D, F, G
Regulations:	No change
Evaluation:	Dragster Appearance will be worth 25 points and cars will scored by ranking them similar to race times. No wind tunnel tests.
Coordinator:	Jay Gauthier jgauthier@wayne.k12.ny.us

Electronic Research and Experimentation

Level II

NYSTSA 2010

On-Site Judging

Overview:	Participants will research, plan, construct, and document an electrical device on-site for a practical application. Entries will be evaluated on quality of research, ingenuity, complexity, and function of the device.
Purpose:	<p>A neighbor has a problem with a squirrel that is entering into a hole in their house. They are concerned about the damage that the squirrel might do to their house. They want to let the squirrel out, and scare it if it tries to come back in. Once they are certain that the squirrel is out, they will repair the hole later.</p> <p>Your design team has been asked to construct of an electronic circuit or device that will detect the presence of the squirrel as it enters a hole in the house. Once the squirrel is detected, the device should scare the squirrel back out of the house. The device should not activate as the squirrel leaves. The device must be operate independently, be powered from a battery power source, not require humans to operate or reset, and cannot harm the squirrel. Your design team should also consider that the device should not affect or bother the humans in the house or their pet dog.</p>
Eligibility:	One team of 2 or more participants per chapter.
Time Limits:	All entries must be completed during the current school year. Participants will present their invention to the judges within a 10 minute time limit.
Procedures:	<ol style="list-style-type: none">1. The teams will work together throughout the year to research, plan, design, and construct their device and develop their presentation and display.2. The displays and inventions will be set up prior to the judging at the specified time.3. Reference materials, notebooks, textbooks, cameras, and other electronic devices are not allowed in the competition area.4. The team will have two representatives present their invention to the judges. No other Participants, teachers, parents, or other observers may be present during the judging and presentation.
Regulations:	<ol style="list-style-type: none">1. Each entry must fit within a 48" wide by 48" high by 30" deep area. This will include the display, the device, and the notebook.2. The major emphasis is with electrical and electronic devices. However mechanical components may be integrated.3. Commercially prepared kits are not allowed.

	<ol style="list-style-type: none"> 4. The electrical device must operate off of an independent DC battery source. Wet cells or lead acid batteries will not be allowed. 5. A three ring binder will be submitted with the documentation for the device. The binder should include the following components: <ol style="list-style-type: none"> a. A title page with the event, date, and device name, school, and team members. b. A table of contents. c. A description of the device including the constraints and parameters that it operates under (1 page) d. Schematic diagrams using engineering symbols and labels for the different components in the device. e. A circuit function description that explains how the device works. f. A work log that identifies the tasks completed, the time spent, and the team members completing the tasks. g. Experimentation and testing section that documents the research, testing, analysis, and experimentation that was required to develop the final solution. h. A reference section that identifies the resources used, the references for key information, and be cited in APA format. 6. A display will be developed that highlights and exhibits the features, function, operation, and testing of the device. This may include text, charts, graphs, and images created by the team on a free-standing display board. 7. All materials will be provided by the team's school.
Evaluation:	All entries will be evaluated based on the function of the device, the quality of the display, the accuracy and extent of the research, and the quality of the presentation.
Coordinator:	Dr. Mark Hardy: mark.hardy@oswego.edu

Essays On Technology
Level II
NYSTSA 2010
 On-Site Judging

Overview	<p>NYSTSA topic: "New York has many natural resources, among them vast quantities of natural gas reserves stored in a geologic region known as the Marcellus Shale. Gas companies are poised to drill into this area to recover the gas. Discuss the impacts this will have, both positive and negative, on our energy needs, our economy and our environment.</p> <p>Useful Research Links: www.nyserda.org www.fossil.energy.gov/programs/oilgas/index.html [click on Modern Shale Gas Development in the United States: A Primer] www.shaleshock.org/drilling-101/</p>
Purpose:	No subtopic research question. Limit of one (1) notecard.
Eligibility:	Unlimited
Time Limits:	No change
Procedures:	<p>A: No subtopic Delete C, D E: 4 pages Delete G.</p>
Regulations:	<p>A: No subtopic E: 4 pages All papers become property of NYSTSA. Winning entries may be submitted to NYSERDA and/or the NYS Department of Environmental Conservation</p>
Evaluation:	No change
Coordinator:	Judith Belt: judith.belt@oswego.edu

Extemporaneous Presentation
Level II
NYSTSA 2010
 On-Site Judging

Overview	Topics for event will be related to energy and environmental issues.
Purpose:	No change
Eligibility:	Unlimited
Time Limits:	No change
Procedures:	H – J. Delete
Regulations:	E: There will be no heats for this event
Evaluation:	No change
Coordinator:	Evie Weinstein: nystsa1@yahoo.com

**Film
Level II
NYSTSA 2010
Pre-Competition Judging**

Overview	You must create a music video to promote Technology Education. Music must be a popular song from the 1970s.
Purpose:	No change
Eligibility:	Individuals or teams of 3 are acceptable. Unlimited teams per chapter
Time Limits:	Music videos do not need to be the entire length of the song but should be at least 2 minutes 30 seconds. Be sure the DVD plays in a standard DVD player
Procedures:	Delete A-C
Regulations:	Delete B, D This is a pre-judged event. The DVD and paperwork must be mailed to: Michael Elliott James A. Beneway High School Ontario Center, NY 14520 These items must be postmarked no later than March 6, 2010. Items postmarked after the given date will be disqualified.
Evaluation:	No change
Coordinator:	Mike Elliot: melliott@wayne.k12.ny.us

Flight Endurance
Level II
NYSTSA 2010
On-Site Judging

Overview	Planes are not built at the conference
Purpose:	Planes are not built at the conference. No construction materials provided.
Eligibility:	Seven (7) individuals per chapter.
Safety:	Planes are not built at the competition. Rules apply if repairs are needed.
Time Limits:	A. Delete
Procedures:	B. Delete E refers to all participants (there are no finalists.)
Regulations:	A, B, E and F. Delete
Evaluation:	No change
Coordinator:	Derek DeMass: DDeMass@wayne.k12.ny.us

Junior Solar Sprint
Level II
NYSTSA 2010
On-Site Judging

3 vehicles/chapter, up to 4 individuals per vehicle team

The Northeast Sustainable Energy Association provides the standard rules. *In addition to these rules the teams must also provide design portfolio &/or sketches as evidence of the student design process.* Please note: a final working drawing would NOT show the design process!

EVENT COORDINATOR: David Buchner: dbuchner@icsd.k12.ny.us

Spirit of the Sprint

The Junior Solar Sprint offers students an opportunity to learn by means of a friendly competition against their peers where students take responsibility for the design, construction, and performance of a model solar electric vehicle.

The role of the adult is to nurture the spirit of excitement and the joy of discovery and learning that awaits students. Adults should let students assume the responsibility for design decisions, construction, and maintenance of their vehicle, performance at a race, and winning or losing.

Materials and vehicle specifications:

1. The Ray Catcher solar panel sold by Pitsco and the JSS Solar Panel sold by Solar World may be used. Panels cannot be shaved, drilled or delaminated. The motors supplied with these panels (Mabuchi #280-2865 and Mabuchi #260-18130) may be used. Motors may not be re-wound or disassembled. Solar panels used in 1995-2005 and motors used in 1996-2005 may be re-used this year as well. Any other panels and motors may not be used in the competition. All parts mentioned here must be used without modification. One solar panel and one motor allowed per car. However, reflectors, supports, and power leads may be added to these components.
2. The remainder of the vehicle can be made from any other materials.
3. The vehicle may not be larger than 30 cm. (12 in.) wide by 60 cm. (24 in.) long by 30 cm. (12 inches) high.
4. The solar vehicle must be structurally sound without the solar panel. The solar panel must be able to be removed from the vehicle, and easily disconnected from the motor.
5. A 2 cm x 2 cm surface must be available for the car number, which should be easily visible when the vehicle is in the ready to race position.
6. The vehicle must be designed with a compartment to carry a payload of 1 empty 12 oz. aluminum soda can. The can may not be part of the vehicle's structure, and must be easily and rapidly removed or reinserted. The can will be supplied by NYSTSA before the start of the race, and must remain with the vehicle and unaltered during the entire event, and returned to the judges following the race if requested.
7. The vehicle must be powered solely by the sun's energy. No energy storage devices (e.g. flywheel battery,

etc.) may be used in conjunction with the solar panel.

8. If the sun's energy is judged insufficient, a battery pack will be furnished for each race. Motor power leads should be readily accessible for easy attachment to a battery pack.

9. The vehicle will be steered via a guide wire that runs the length of the track (typically fishing line). The vehicle must be attached to the guide wire by a minimum of 1 attachment point. The vehicle must be easily attached (and removed) from the wire without disconnecting the guide wire.

10. The vehicle must be of student's own design and manufacture from the current school year; no car or major part thereof from a previous year shall compete. Each team from a given school must have a unique car design.

The Race Track

11. The race lane is 60 cm. wide and 20 meters long. The track is a hard flat surface such as an asphalt tennis court or running track. The track can be oriented in any direction (e.g. North-South, East-West, etc.)

12. The guide wire will be located in the center of the lane. The wire will be no higher than 1.5 cm. above the track surface. The wire will be small diameter line, such as fishing line (e.g. 60# test monofilament). There will be no free end on the guide wire, thus the cars must be hooked into the wire, not strung onto it.

Conduct of the Race

13. The races will be run in a double elimination format. Thus you will have a minimum of two opportunities to race before you are eliminated from competition.

14. Only two members of the race team will be allowed on the track during the race: one at the starting line and one at the finish line. A non-team member may act as a catcher if necessary. Student non-team members will be chosen over adult non-team members if possible.

15. Each vehicle must have an assigned student team captain. No student shall be assigned team captain to more than one vehicle. No team shall consist of more than four students.

16. The vehicle will start from behind the starting line with all wheels touching the track. The solar panel will be covered by an opaque sheet, which will be held above the panel by a member of the race team to block the sunlight. The vehicle should not be touched by the sheet or by any member of the team at this time. When the line judge gives the signal to start the race the team member will remove the sheet so the panel will be exposed to the sunlight.

17. There will be a 5-minute time limit to prepare your vehicle to race in your lane. This should be sufficient time to attach the vehicle to the guide wire. The race will start at the end of this time limit regardless of whether the vehicle is ready to compete.

18. Once the race has begun team members are not allowed to touch their vehicle or be on the race lanes until their vehicle has crossed the finish line and the judges have determined the heat completed. Pushing the vehicle after the race has begun may result in disqualification or a re-run of the race.

19. Any car that leaves its lane will be disqualified from the heat in question. However, the offending vehicle

may compete in its second trial if not having done so already. If the car leaving its lane interferes with any other cars those cars whose run was interfered with will be allowed an additional opportunity to run.

20. Loss of payload during a race will result in disqualification from the heat in question. However, the offending vehicle may compete in its second trial if not having done so already. If the loss of payload interferes with any other cars those cars whose run was interfered with will be allowed an additional opportunity to run.

21. Winner of a heat will be the first vehicle to cross the finish line or the vehicle to travel the farthest down the track. Generally speaking, the top two finishers will advance to the next heat. In the event of a tie, the judges may determine multiple winners, and admit additional cars to advance to the next round of competition.

22. Awards will be given for speed and technical merit.

Advancement from Area to Regional Competition

23. Only level-one contestants may advance to the regional competition

Mouse Trap Vehicle
Level II
NYSTSA 2010
On-Site Judging

OVERVIEW: NYSTSA students entering this event are required to design, draw, and build a mousetrap powered vehicle to demonstrate their knowledge of Technology and the principles of energy transfer.

EVENT COORDINATOR: Bruce Salisbury at eagle-3@netzero.ne

I. CONTEST PURPOSE: To provide a means for TSA members to demonstrate their ability to design and construct a working vehicle within a set of specifications.

II. ELIGIBILITY FOR ENTRY: Individual event, no limit on number of entries per chapter.

III. LEVELS OF COMPETITION: Level II.

IV. TIME LIMITATIONS: 8 minutes

V. SPECIFIC REGULATIONS:

- A. Entries must be designed and constructed by the student. Contestants may enter only one vehicle that has been designed and constructed during the current TSA of New York year. NO KITS.
- B. Only one standard mousetrap (single spring 5x10cm) may be used. Although it may be altered, no alteration to the energy-storing capacity (the spring) is allowed. The "vehicle" must be a self contained unit and move as a whole.
- C. The total energy used by the vehicle during the race must come from only the mousetrap spring. While other energy storage is permissible it must be powered up by the mousetrap. (Ex. a rubber band could be used in the vehicle but must not be stretched or twisted at the beginning of the race. If fishing rods are used they cannot be bent or loaded with energy prior the start of the race.
- D. The race will be on a smooth surface.
- E. Drawings: Every entry must submit a full size or scaled drawing of the completed vehicle. A two-view (top and side) drawing with English standard dimensions shall be made on paper no larger than B size with a border and title block as illustrated in the title border section. Drawings should be developed using standard engineering practices and procedures. The drawings may be produced using traditional drafting methods or CADD. Copies of drawings are acceptable.
- F. Technical report: Explanation of overall design consideration and materials used to construct the vehicle. The report must include theory(s) of energy transfer and a description of the launch techniques that should be employed to ensure a successful run. Drawings and diagrams may be used to supplement the report.

VI. PROCEDURE:

- A. Students will enter the competition before the registration deadline.
- B. When it is the students' turn, they will place the loaded vehicle with the spring centered on the starting line and release it. It must be started by the normal release mechanism of the mousetrap. (No push may be given to the vehicle by the student).

- C. The student will be given two trial runs, with the average score of travel distance and travel time being used for the judging. If the student cannot get the vehicle in operation within a reasonable time (2minutes), that trial will be scored a zero for the distance traveled and a minus 120 points for travel time.

VII. REQUIRED CONTEST PERSONNEL/ EQUIPMENT:

- A. Contest Coordinator
- B. Three judges
- C. Rating sheets for the judges
- D. Two stop watches
- E. 100' Tape measure
- F. Smooth surface (corridor, gym floor)

VIII. CRITERIA FOR JUDGING:

- A. Design 10 points
- B. Drawing 30 points
- C. Construction 30 points
- D. Technical Report 20 points
- E. Distance Unlimited points
- F. Travel time Limited to minus 120 points
- TOTAL Unlimited points

NOTE:

Distance, the point the vehicle stops moving (3 points per foot, measured to the nearest inch. Distance will be measured perpendicular to the starting line to the center of the spring).

Travel time (minus 1 point per second, measured to the 0.01 second. Timing will be from the instant of trigger release to the instant the vehicle ceases motion).

Prepared Presentation
Level II
NYSTSA 2010
On-Site Judging

Overview:	<p>The NYSTSA 2010 topic will be: “Energy production and the environment”. Students must incorporate the 2010 National TSA Conference theme of “TSA: Tomorrow's Leaders” as it applies to New York state, and should address both positive and negative perspectives of emerging <u>and</u> fossil fuel-based energy sources.</p> <p>Useful Research Links: www.nyserda.org www.fossil.energy.gov/programs/oilgas/index.html [US Dept. of Energy] www.communityscience.org/gaswells.html www.shaleshock.org/drilling-101/ www.eere.energy.gov/</p>
Purpose:	No change
Eligibility:	Unlimited
Time Limits:	No change
Procedures:	D: No heats. Delete E – G.
Regulations:	Topic is as described in the NYSTSA 2010 Modifications Overview
Evaluation:	No change
Coordinator:	Evie Weinstein: nystsa1@yahoo.com

**Promotional Graphics
Level II
NYSTSA 2010
On-Site Judging**

Overview	Participants develop and present a graphic design that can be used as a NYSTSA recruitment tool
Purpose:	Use computerized graphic communications layout and design skills in the production of a recruitment tool for NYSTSA
Eligibility:	5 individuals per chapter. All entries must be accompanied by TSA Photo/Film/Video release.
Time Limits:	Pre-site Judging Entries must be post-marked by February 26, 2010
Procedures:	A. Pre-site Judging Entries must be post-marked by February 26, 2010 C. Winning design may be screen printed on T-shirts that will be displayed at the NYSTSA Competition in Oswego
Regulations:	B-4 must promote NYSTSA. B-5 delete. B-6 NYSTSA can be substituted for TSA (Design must promote NYSTSA)
Evaluation:	Pre-Site Judging all entries must be sent to Jay Gauthier: 6076 Ontario Center Rd. / PO Box 155/ Ontario, NY 14520-0155 Entries must be post-marked by February 26, 2010
Coordinator:	Jay Gauthier: jgauthier@wayne.k12.ny.us

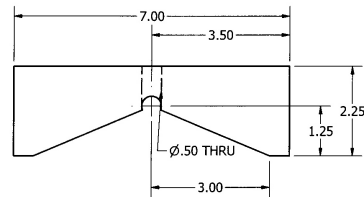
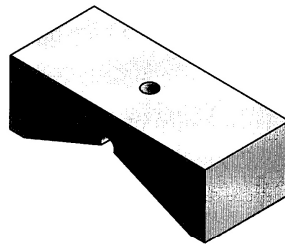
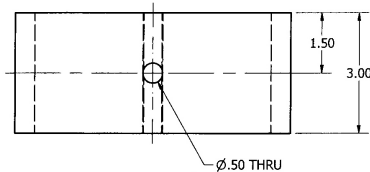
**Structural Engineering
Level II
NYSTSA 2010
On-Site Judging**

Overview	Roof truss design, prepared prior to conference
Purpose	Construct a roof truss system that reflects knowledge of residential design and construction concepts.
Eligibility	No limit per chapter
Time Limits:	A, B, C. Delete
Attire and Safety Eyewear	Refer to NYSTSA 2008-2009 Modifications for COMPETITIVE EVENTS ATTIRE Bring your own safety glasses for destructive testing.
Procedures:	Device is prepared prior to competition and brought to site A. Participants report to check-in area to obtain ID number stickers. Deliver structure and sketches to designated location. C2, D, E, G-K, M. Delete Replace B with: only white or yellow carpenters glue may be used. C. 1.a. and b. no change, except NYSTSA provides no materials F. The truss will be 12" long T. Videotaping of destructive testing is allowed.
Regulations:	A. All work is done prior to conference. B. The materials to be used by each team can only consist of twenty (20) feet of 3/32" x 3/32" basswood, one 3"x 5" note card, and white or yellow carpenters glue. C. No change D. A sketch of the structure on graph paper must be completed and presented during registration check-in. E. The span (length) of the structure is 12". The width of the structure must be able to accept the 1/2" threaded rod through the middle of the truss and support the test block without external support. The width of the structure shall not exceed 3". F. No change G. The structure must reach one inch (1") beyond the abutments, plus or minus 1/8". The crusher will be set for 10" between abutments for the twelve (12") truss. H-L. No change

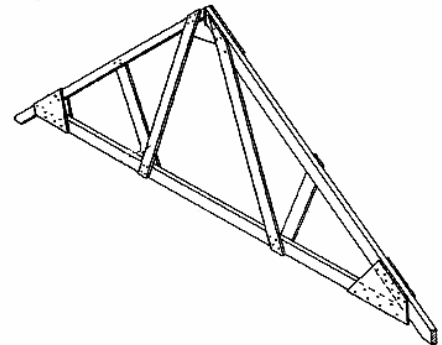
Evaluation:	No change
Coordinator:	Bruce Salisbury: eagle-3@netzero.net Mike Ramsden: Mramsdn@hcs.stier.org

Please read the national rules completely and bring your own eye protection for destructive testing at the competition.

Test Block



Sample Truss



Laminations Visualized

CORRECT LAMINATION



INCORRECT LAMINATION



Technical Sketching and Application
Level II
NYSTSA 2010
On-Site Judging

Overview	No written test, and no finalists.
Purpose:	No change
Eligibility:	3 per chapter
Time Limits:	Delete A. B: No finalists, all participants
Procedures:	Delete B and C. D: No finalists; all participants
Regulations:	A: No answer sheet. A – C: All participants
Evaluation:	Delete A. B: Placement is determined by sketch only.
Coordinator:	Michael Giallombardo: mr_g14625@yahoo.com

**Technology Problem Solving
Level II
NYSTSA 2010
On-Site Judging**

Overview	No change
Purpose:	No change
Eligibility:	3 teams of 2 individuals per chapter
Time Limits:	No change
Procedures:	D: Repeatability testing: coordinator's discretion.
Regulations:	No change
Evaluation:	No change
Coordinators:	David Buchner: dbuchner31@hotmail.com

Registration Forms

Complete and mail with payment to:

Evie Weinstein
NYSTSA State Advisor
376 Brooktondale Rd
Brooktondale, NY 14817

Cost

Post marked before March 5th

\$25 per student

Between March 6th and 12th

\$30 per student

This includes banquet

Registration closed after March 12th

NO WALK-IN REGISTRATION

Make Checks Payable to: NYSTSA

Sorry, no credit cards or purchase orders accepted

LEVEL II REGISTRATION



Student Name; (Last, First)

Entries per chapter >>

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Architectural Model	4 T of 1-2																		
Catapult Design	U T of 3																		
CAD 2D, Architectural	5 T of 1-2																		
Cyberspace Pursuit	U																		
Debating Tech Issues	6 T of 2																		
Desktop Publishing	U																		
Dragster Design	10																		
Electronic Research and Experimentation	1 T of 2																		
Extemporaneous Presentation	U																		
Essays On Technology	U																		
Film	U T of 1-3																		
Flight Endurance	7																		
Junior Solar Sprint	3 T of 4																		
Mouse Trap Vehicle	U																		
Prepared Presentation	U																		
Promotional Graphics	5																		
Structural Engineering	U																		
Technical Sketching and Application	3																		
Technology Problem Solving	3 T of 2																		

COST \$25 per student before 3/5/10, \$30 between 3/6/10 and 3/12/10 no registration after 3/12/10			
Number of Students	Registration Fee (\$25 or \$30)	\$15 Fee For Additional Banquet Guests	Total Enclosed \$