

New York State Technology Student Association

2012 State Conference

"MAKING THE STEM CONNECTION"

**Saturday April 28th 2012
DeWitt Middle School
Ithaca, NY**



**Level I Rule
Modifications**

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FORWARD

The diverse competitive STEM (Science, Technology, Engineering and Mathematics)-based events that are listed within this booklet are open to NYSTSA chapters and other groups registered to compete in the 2012 NYSTSA State Conference. 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.

For this year's NYSTSA Conference, the following registration packages are offered:

1. **Full Registration**-This package requires affiliation with both the National TSA and NYSTSA. This registration level allows schools to participate in ALL the events listed in this booklet. Affiliation with National TSA <www.tsaweb.org> includes state and national dues for one year. Once affiliated at the National level you will receive the "Total TSA" CD-ROM. This contains all the information students and their advisors will need for membership, competitive events rules and leadership activities.
2. **NY/STEM Registration**-This package is intended for those who would like to sample the excitement of STEM-based events specifically designed for the NYSTSA Conference. Registrants are ONLY eligible for certain events. See list and key on the following page.

Please refer to Conference Registration form for costs and deadlines.

All events and their rules listed in this booklet are modified in accordance with the National TSA Middle School Competitive Events Guide unless otherwise specified in the field labeled "Modifications:" located at the top of each event. Certain examples of exceptions are events that are uniquely NY/STEM events. These events DO NOT appear in the National TSA Middle School Competitive Events Guide.

It is the hope of the Student Officer Team, 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 STEM-based competition. The challenges that face us all, demand a swiftly growing literacy in science, technology, engineering and mathematics. We hope you will see this reflected in the events described here. Come, learn and have fun!

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

General Rules Governing Competitive Events

I. MIDDLE SCHOOL EVENTS AND EVENT COORDINATORS CONTACTS

*On-Site Judging	* * Pre-Competition Judging
Catapult Challenge Event Coordinator-Stephanie Supa sms463@cornell.edu	Community Service Video Event Coordinator- Caitlyn Vander Maas cvmaas82@gmail.com
Dragster Design Event Coordinator-Jeff Perry jap255@cornell.edu	Digital Photography Judy Cogan jcogan@icsd.k12.ny.us
Energy-Smart Architectural Model Patrick Griffin patrick@phiglobalmedia.com	Promotional Design Jennifer Hungate Jennifer.Hungate@leCHASE.com
In Style-Fashion Technology Carol Spence cspence@icsd.k12.ny.us	Website Design Mike Giallombardo mr_g14625@yahoo.com
Junior Solar Sprint (JSS) Shawn Reeves shawn@energyteachers.org	
Mousetrap Vehicle Bruce Salisbury bsalisbury@hcs.stier.org Problem Solving David Buchner dbuchner@icsd.k12.ny.us Bob Walters bwalters@icsd.k12.ny.us	
Structural Engineering Barry Passer bpasser1@twcnny.rr.com	
Sumo Bots Rob MacCurdy rmb7@cornell.edu	
Verbal Jousting: Debating Tech Issues Evelyn Weinstein nystsa1@gmail.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 may or may not include a finalist interview performed on site. See individual event descriptions for detail.

Note: Events in **red** font are unique to NY and the NYSTSA Conference. Chapters or groups who register for NY/STEM registration (see registration packages on previous page) are restricted to only these events.

II. PARTICIPATION IN COMPETITIVE EVENTS:

- A. Students must be registered at the State Competition in order to enter and compete in a competition. Pre-registration is required. (See registration packages on page 3. 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 and worn to all events.**
- D. Projects/entries must be picked up and dropped off at the time stated in the competition agenda.**

III. COMPETITIVE EVENTS ATTIRE

ALL STUDENTS ATTENDING THE COMPETITION MUST wear official NYSTSA Conference Attire. Your cooperation with this policy will assist in providing a positive image for the organization and its members.

A. NYSTSA Conference Attire should consist of appropriate shoes (no open-toed shoes), black socks, neutral pants or skirt (no cargo pants etc.), and a chapter TSA shirt/polo of each school's choice. If a school cannot design their own chapter shirt/polo for the conference, standard TSA Polo's and shirts can be purchased from the national TSA store website via <<http://www.costore.com/tsa/welcome.asp>>. For non-NYSTSA groups - at minimum students must wear a blue polo shirt on which conference ID tags can be worn. These will be available at the NYSTSA Conference.

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

Examples of TSA official attire can be found on the National TSA website at <<http://www.tsaweb.org>>.

IV. PROPERTY DAMAGE OR LOSS

DeWitt Middle School and NYSTSA are not responsible for damage to, or loss of property brought to the competition.

Catapult Challenge

Level I

On-Site Judging

Modifications: This is a New York-STEM based event. Complete rules follow.

Event Coordinator: Stephanie Supa sms463@cornell.edu

Overview:	Participants will research, plan, and construct a lever machine (catapult) to demonstrate their knowledge of technology and the principles of simple machines.
Purpose:	Participants will demonstrate their ability to research, design, draw, and build a catapult that illustrates the principle of a lever.
Eligibility:	Five (5) entries per chapter with up to three students per team.
Time Limits:	All entries must be completed by middle school students in the current NYSTSA school year.
Attire:	NYSTSA Conference Attire.
Procedure:	<p>A. Participants will check in their entries at the time and location stated in the conference program.</p> <p>B. When entries are judged neither students nor advisors are present at this time.</p> <p>Competition Procedures:</p> <p>A. Target: The target will consist of two 2inch high walls mounted on a 4foot diameter target with an inner 12inch diameter wall and an outside 48inch diameter wall.</p> <p>B. Catapults will be hand launched from the designated launching site. The target location will be selected between 25-50feet in 5foot increments from the launching site.</p> <p>C. One set distance will be selected at the start of the competition, and will remain constant throughout the competition.</p> <p>D. Participants will be given one test launch to make any necessary adjustments. (weights, balance, fit etc.)</p> <p>E. Participants will be given two launches for the competition. The closest distance to the target of the two launches will be judged to determine the accuracy points.</p>
Regulations:	<p>A. Students may construct their catapults out of any desired material.</p> <p>B. The catapult's base dimensions will not exceed the measurement of 30 inches cubed assembled and in the catapults set (firing) position.</p> <p>C. A lever, or lever system MUST be utilized. Entries built as slingshots, or lacking a lever or lever system will be disqualified.</p> <p>D. The projectile used will be a standard sized Hacky Sack weighing approximately 50 grams.</p> <p>E. Along with their catapult teams must submit a binder with the following pages;</p> <ol style="list-style-type: none">1. Table of Contents (1 page)

	<p>2. Research Report; a collection of material explaining the principles of levers as related to the design submitted, as well as a short history of the catapult. This portion may include some pictures or charts. (Pages as needed)</p> <p>3. Technical Drawings; a detailed drawing in two views for each part of the catapult that is cut and assembled separately. The drawings must use metric dimensions and be written on no larger than B size paper with a border and title block. Drawings should be developed using standard engineering practices and procedures. The drawings may be produced using traditional drafting methods but may also be drawn using CAD programs. Copies of drawings are acceptable.</p> <p>F. No spring-loaded systems, ballistic mechanisms, or trebuchets will be permitted. Immediate disqualification will occur if these items are present.</p>
Evaluation	<p>Evaluation will be based on points earned for the drawings and written portions, as well as the catapult test as described below.</p> <p>A. Judging Break-down</p> <ol style="list-style-type: none"> 1. Table of Contents.....5pts. 2. Research Report.....20pts. 3. Technical Drawings.....25pts. <p>B. Catapult Test-Points Earned</p> <ol style="list-style-type: none"> 1. The 1st place winner of the catapult throw will receive 50 points. Catapults ranked 2nd through 10th place each receive a four point deduction. (i.e. 1st Place=50pts. 2nd Place=46pts.-----etc) <p>All other catapults launched will receive 10 points.</p>

Dragster Design
Level I – NYSTSA
On-Site Judging

Modifications: Modifications are made in accordance with the National TSA Middle School Competitive Events Guide.

Event Coordinator: Jeff Perry jap255@cornell.edu

Overview:	No Change
Challenge:	No Change
Eligibility:	10 Entries per chapter. Individuals only.
Time Limits:	Delete-C
Attire:	Delete-NYSTSA Conference Attire
Procedure:	Delete-D Delete-E Delete-F Delete-G A. All cars will be permitted to race however, cars that do not meet specifications will be assessed a 20% penalty for each rules violation. 20% will be deducted from the total number of points earned.
Regulations:	No Change
Evaluation	A. No wind tunnel tests will be performed. B. Dragster construction will be worth 25 points and cars will be scored by ranking them similar to race times.

Energy-Smart Architectural Model

Level I

On-Site Judging

Modifications: This is a New York-STEM based event. Complete rules follow.

Event Coordinator: Patrick Griffin patrick@phiglobalmedia.com

Overview:	Participants will design, draw, and construct a model wall and roof section of an energy efficient home showing attention to the most current, best practices in Building Science with reference to: framing, insulation roofing materials, location, climate, and green building materials. The focus should be on the building materials and the detail of how they are assembled to maximize energy efficiency. INITIAL SUGESTED REFERENCE: http://www.buildingscience.com
Purpose:	Students will demonstrate an understanding of and proficiency in the process of green architectural design, energy efficient building plans and basic modeling techniques.
Eligibility:	Six (6) entries per chapter with teams of up to three (3) students.
Time Limits:	All entries must be completed by middle school students in the current NYSTSA school year.
Attire:	NYSTSA Conference Attire.
Procedure:	A. Participants must check in their entries at the time and place stated in the conference program. B. Event submissions are reviews by judges following check in. Neither students nor advisors are present at this time.
Regulations:	A. Entries must be built on a site board no larger than 24" square. B. Students must supply the following with their models. 1. A complete bill of real-life materials to be used in the construction of this wall and roof section. This is NOT a bill of materials used in the model. 2. A building procedure for the wall and roof section in instruction format. 3. A ¼ scale floor plan drawn on graph paper with proper architectural symbols. Both the model and the drawing must show a section view of the wall and roof. R-values must be calculated for roof and walls. 4. A list of references that were used to research energy efficient construction materials. These citations must be word-processed and be in MLA style. C. Students may use any materials they wish to construct their models.
Evaluation	Evaluation will be based on points earned in the rubric that follows.

Energy-Smart Architectural Model

Level I

Official Evaluation Rubric

Evaluative Criteria	Pts	Participant ID Numbers							
Floor Plan:									
Neat with no free hand lines	5								
Proper architectural symbols	5								
Drawn at ¼ scale	10								
Section View	10								
Bill of Materials	10								
List of References	10								
Subtotal:	50								
Architectural Model:									
Quality of construction	10								
Energy efficient design including R values of walls/roof	20								
Appropriate and effective use of materials	10								
Site board (no larger than 24" square)	5								
Aesthetic appeal	5								
Subtotal	50								
TOTAL	100								

Evaluator: I certify these results to be true and accurate to the best of my knowledge.

Print Name: _____

Signature: _____

JUDGES: _____

In Style-Fashion Technology

Level I

On-Site Judging

Modifications: This is a New York-STEM based event. Complete rules follow.

Event Coordinator: Carol Spence cspence@icsd.k12.ny.us

Overview:	<p>Participants will design and create one complete piece of clothing along with a production binder, including hand and computer drawn design process sketches working with the year's assigned theme.</p> <p>The <i>In Style</i> theme for 2012 is Masquerade.</p>
Purpose:	<p>Clothing not only provides everyday coverage and protection from the elements but can also be interpreted as a social movement of trend setting and stylization. Manufacturing of fabric has long been a vital economic and highly technical process involving many diverse trades. This event allows NYSTSA participants to experience a bit of the fashion world creating not only useful casual clothes but also exciting designs for various locations, and occasions. In addition, students will develop an understanding of the resources, costs and diverse technological skills necessary to this manufacturing process.</p>
Eligibility:	<p>Four (4) entries per chapter with teams of 2-4 students.</p>
Time Limits:	<p>All entries must be completed by middle school students in the current school year.</p>
Attire:	<p>NYSTSA Conference Attire.</p>
Procedure:	<p>A. Participants must check in their entries as the time and place stated in the conference program.</p> <p>B. Entries are then judged. Neither students nor advisors are present at this time.</p> <p>C. Finalists based on pre-judged entries will be announced at the time and place listed in the conference program. Finalists will sign-up for interview and presentation times at the finalist booth as to avoid event conflicts with other events. Interviews will consist of a two minute modeled presentation and a 3 minute interview conducted by the event coordinator. Team members may be models.</p> <p>D. The top three designs will be announced and presented in photographs or by models at the NYSTSA Conference Banquet. Trophies will be awarded to 1st, 2nd, and 3rd place finalists.</p>
Regulations:	<p>A. Entries must be presented for judging along with the binder in a neat and formal manner. Garments should be presented on hangers and in protective bags or garment bags. A dressmaker's dummy is optional.</p> <p>B. Binder Element</p> <p>1) The portfolio must include the following pages. Failure to comply with these regulations will result in point deduction.</p>

	<ul style="list-style-type: none"> ⤴ Title Page: stating event title, conference city state and location ⤴ Table of Contents ⤴ Research and interpretation of theme; must include a description of fabric chosen and reasoning for choices (maximum 3 pages). Fabric description must address costs, origins of materials (geographic and source, eg, natural versus fossil fuel-based) tensile strength, threads per inch, manufacturing process of raw materials, and limits to production (resources, processing, labor, etc) ⤴ Hand Drawn Design Process Sketches (a minimum of two sketches; pages as needed) ⤴ Final Sketch; detailed hand drawn sketch showing completed garment from 3 angles: front, back, and side. (pages as needed) ⤴ Computer graphic of garment, front and back. ⤴ Citations as necessary. <p>Garment and Binder Evaluation</p> <p>1) The garment and binder must be presentation quality and should show an attention to detail and creative process. Any garments that depict inappropriate or unacceptable designs will be disqualified.</p> <p>2) The finalist interview is designed to evaluate the entrant's knowledge and expertise of the years theme, over all garment design and originality as well as knowledge of sewing techniques and fabrics used.</p>
Evaluation	Evaluation is based on the rubric that follows.

In Style-Fashion Technology
2011-2012 Official Evaluation Rubric

Evaluative Criteria:

Portfolio (35 points)

Title Page.....1pt.
Table of Contents.....1pt.
Research and interpretation of theme.....15pts.
Hand drawn design process sketches.....5pts.
Computer graphics.....5pts.
Final Sketch.....5pts.
Citations.....3pts.

Total: _____pts.

Garment (40 points)

Quality fabrics and materials.....10pts.
Use of Notions (buttons, zippers, etc.).....10pts.
Presentation Quality (in bags and on hangers).....10pts.
Apparent neatness and attention to detail.....10pts.

Total: _____pts.

Finalist Interview (25 points)

Interview and presentation.....15pts.
Quality and appearance of garment on model.....5pts.
Organization, and general professional attitude.....5pts.

Total: _____pts.

Junior Solar Sprint (JSS)

Level I

On-Site Judging

Modifications: This is a New York-STEM based event. Complete rules follow.

Event Coordinator: Shawn Reeves shawn@energyteachers.org

Eligibility: Six (6) entries of teams up to 4 students per chapter. Individuals are permitted.

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!

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. **Each contestant must bring two of their own double A (AA) alkaline batteries.** Battery holders will be supplied by the Event Coordinator.

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 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 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 Middle School contestants may advance to the Regional Competition.

NYSTSA STEAM Competition

Junior Solar Sprint

Vehicle ID #s _____

Technical Merit Score Sheet	Possible Points	Awarded Points
Solar Collection System		
Solar Panel Adjustable	10	
Enhanced Energy Collection (ie: reflectors)	10	
Attachment of solar panel (or mock panel) to car	10	
Precision of solar panel adjustment	10	
Power Train and Guidance Systems		
Motor Mounted Securely	10	
Friction Reduction Strategies	10	
Drive Wheel Tread Appropriate for Track Surface	10	
Guidance System is Adequate and Friction-Free (nearly)	10	
Craftsmanship and Innovation		
Portfolio/Sketches as Evidence of Design Process	10	
Is the Design Simple/Innovative Yet Effective	10	
TOTAL (0 to 100)		
	100	

Mousetrap Vehicle

Level I

On-Site Judging

Modifications: This is a New York-STEM based event. Complete rules follow.

Event Coordinator: Bruce Salisbury bsalisbury@hcs.stier.org

Overview:	Participants will research, plan, and construct a mousetrap powered vehicle to demonstrate their knowledge of technology and the principles of energy transfer.
Purpose:	This event provides a means for students to demonstrate their ability to design and construct a working vehicle within a set of regulations.
Eligibility:	10 entries per chapter, individuals only.
Time Limits:	All entries must be completed by middle school students in the current school year.
Attire:	NYSTSA Conference Attire.
Procedure:	<p>A. Students will check in their events at the time and place stated in the conference program.</p> <p>B. Participants will present their vehicles to the judges within an eight minute time limit.</p> <p>Competition Procedure:</p> <p>A. Students will enter the competition before the registration deadline.</p> <p>B. When it is the student's turn, he/she 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. The student may give no push to the vehicle.</p> <p>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. The average distance of the two trial runs will be used to determine distance points.</p>
Regulations:	<p>Entries must be designed and constructed by the student. Contestants may enter only one vehicle that has been designed and constructed during the current school year. NO KITS.</p> <p>A. 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. The total energy used by the vehicle at the start of the race must come from only the mousetrap spring. While other energy storage is permissible, the vehicle must be powered 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. Levers may be straight or pre-bent at rest but cannot bend any more than they initially are at the beginning of the race. Rubber bands and levers cannot be used as springs at the beginning of the race.)</p>

	<p>B. The race will be on a smooth surface.</p> <p>C. 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. Drawings should be developed using standard engineering practices and procedures. The drawings may be produced using traditional drafting methods or a CAD software. Copies of drawings are acceptable.</p> <p>D. Technical report: A technical report must be included with each entry. The report should include an 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.</p> <p>E. All outside sources must be cited and direct use of outside materials must have written (signed) permission from the source owner.</p>
Evaluation	<p>A. Technical Report: 30 points</p> <p>B. Drawings: 30 points</p> <p>C. Design: 10 points</p> <p>D. Distance/Travel time points:</p> <ol style="list-style-type: none"> 1. 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 recorded from the instant of the trigger release to the instant the vehicle ceases motion. 2. Travel time limited to minus 120 points.

Problem Solving

Level I – NYSTSA

On-Site Judging

Modifications: Modifications are made in accordance with the National TSA Middle School Competitive Events Guide.

Event Coordinator: David Buchner dbuchner@icsd.k12.ny.us

Bob Walters bwalters@icsd.k12.ny.us

Overview:	Delete-Participants will use their skill in problem solving to develop a finite solution to a stated problem on site. The 2012 Problem Solving theme is Water Quality. The specific question will be provided on site.
Challenge:	No Change
Eligibility:	Two (2) teams per chapter. Two (2) individuals per team.
Time Limits:	Delete-Students are given one hour on site to complete the problem solving task.
Attire:	Delete-NYSTSA Conference Attire
Procedure:	Delete-C Delete-D Delete-E Delete-G All tools and materials will be provided by the event coordinators.
Regulations:	No Change
Evaluation	No Change

Structural Engineering

Level I – NYSTSA

On-Site Judging

Modifications: Modifications are made in accordance with the National TSA Middle School Competitive Events Guide.

Event Coordinator: Barry Passer bpasser1@twcny.rr.com

Overview:	No Change
Challenge:	No Change
Eligibility:	Unlimited # of teams. 1- 3 individuals per team
Safety	No Change
Time Limits:	Delete-A Delete-B This event is prepared prior to the competition however the destructive testing is prepared on-site. The beam is fully built and assembled prior to the competition. ONLY the destructive testing is performed on-site.
Attire:	Delete-NYSTSA Attire
Procedure:	Delete-B Delete-C Delete-D Delete-E Delete-F Delete-G Delete J- The top three finalists will be announced at the NYSTSA Conference Banquet.
Regulations:	Delete B- These items and building tactics should be used in the construction of the beam, however do not need to be brought to the competition. Regulations on amount of glue are still enforced. Regulation C-Entries must follow these regulations in the construction of their beam, however building materials will not be supplied and are the responsibility of the team.
Evaluation	In section "A" Delete- 1 & 2 Evaluations, 2a, 2b, 2c, 2d, 2e, 2f, are still intact.

Sumo Bots

Level I

On-Site Judging

Modifications: This is a New York-STEM based event. Complete rules follow.

Event Coordinator: Rob MacCurdy rbm7@cornell.edu

Description: Prior to the competition, students must design and construct a robot (bot) that will attempt to move an opponent's bot from a defined arena.

Team: Up to 2 teams per chapter, with 2 per team. Impound: Yes Approximate Time: Two minutes competition time.

Devices are to be impounded prior to the event. Check with the Tournament Director for the impound schedule. Students may take the bot with them when they are eliminated from the tournament, but no appeals may be filed once a team has removed their bot from impound.

Robot Construction:

1. Teams may construct their robot from a variety of parts, including LEGO® MINDSTORMS® NXT, Pitsco TETRIX®, or VEX Robot kits. Remote control cars may be used if the stock car is modified in some non-trivial way, e.g., additions like scoops, arms, or any other offensive or defensive devices, etc. Teams must include their school name on their bot.
2. Robots must be controlled autonomously or teleoperated by radio remote (including Bluetooth or WiFi), meaning no cords or wires attached to the bot will be permitted; and teleoperated bots must be able to operate on at least three different frequencies (see SumoBots Frequency Facts document for details). Note, event supervisors may require teams to submit the three frequencies their bot can operate on prior to the competition.
3. The bot must be designed so that it is ready to run when called to do so within 2 minutes, e.g., batteries plugged in, switches turned on, and radio frequency channels changed, etc.
4. Robots must be powered by electricity, no fuel or combustion engine designs will be allowed.
5. The robot's maximum starting dimensions will be 40 cm long by 40 cm wide by 40 cm high. Items that cause a bot to exceed the starting 40 cm x 40 cm x 40 cm size are permitted if they return to fit within the allowed size within 10 seconds of a match's conclusion; failure to do so will result in bot disqualification for that match.
6. The robot must not weigh more than 2.0 kilograms including batteries. The weight of the associated remote control device is excluded.
7. The combined voltage of all batteries carried by the bot cannot exceed 14.4 volts. Battery voltage will be determined by the specifications stamped on stock batteries or as measured by a voltmeter prior to each match at the discretion of the Tournament Director. Impounded batteries are restricted to the batteries that run the bot and spares. No recharging facilities will be provided by the event supervisor other than a standard electrical outlet.
8. The robot may have devices designed to remove an opponent's bot from the arena using any method except projectiles, flames, sharp objects, magnets, pneumatic or hydraulic devices. Any robot that is deemed unsafe by the event supervisor shall be disqualified for the event and any team that deliberately attempts to do physical damage to an opponent's bot will be disqualified for the event.
9. Only the robot's wheels/track may make contact with the surface of the arena. Bots may not damage the surface of the ring or deliberately deposit any foreign substances onto the surface of the ring; bots that cause damage to the arena surface may be disqualified from event at the

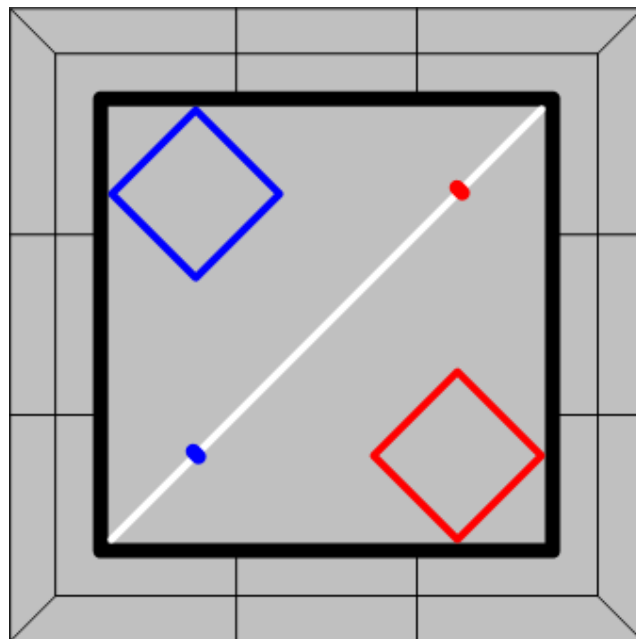
discretion of the event supervisor.

Competition:

1. Competition will proceed in double elimination tournament fashion with random pairings for the first round. When a round of the double-elimination tournament has an odd number of teams, one team will be randomly selected to receive a bye. A bye does not count as either a win or a loss. No team will receive more than one bye in a tournament unless a round is reached with an odd number of participants and all participating teams have already received a bye, in which case the second bye will be issued on a random basis.

2. Once called to compete, teams will have a maximum of 2 minutes to prepare their bot, e.g., plug in batteries, turn controls on, change frequency, etc. Any bot that is not ready to compete within 2 minutes of being called will forfeit their match. Teams may not work on their bots prior to being called to compete in their first match.

3. The arena of competition will be a 5' x 5' square outlined with 2" wide black gaffer's tape on gray SoftTiles set on the floor (see <https://www.softtiles.com/content/view/28/39/>). The arena will have 40 cm x 40 cm red and blue starting boxes outlined with 1" gaffer's tape in opposite corners of the arena. A strip of 1" white gaffer's tape will diagonally divide the two halves of the arena with red and blue "starting lines" marked in 2" squares of gaffer's tape located 40 cm from the right corner of the arena with respect to each bot's starting box, as shown below:



4. Robots will start facing each other in opposite corners of the square. The judge will place a tennis ball on the red and blue "starting lines." When the judge gives the 3-2-1-Go command, each team must first travel to their "starting line" located on their right. A team will have reached their "starting line" when they move their tennis ball. Teams may not turn to face or initiate contact with their opponent until: (a) they have reached their designated "starting line," or (b) their opponent has initiated contact with them. Any team that initiates contact or turns to face their opponent before either reaching their "starting line" or being engaged by their opponent will forfeit the match.

5. Teams will have two minutes to force the opponent from the arena. If no robot has been declared the match winner at the end of two minutes, the lighter of the two will be declared the match winner. If both robots are the same weight, the robot that reached its "starting line" first

will be declared the match winner.

6. If parts fall off of a robot during a match that affects quality of play, the clock may be stopped at the discretion of the judge with the pieces removed and the match continued.

7. If any of the judges determine that a robot is taking a defensive posture or is backing away continually for 15 seconds, time will be called and that team will receive a stalling penalty. If this is the team's first stalling penalty of the match, the match will resume where it left off with the "stalling" team's bot "disabled" for 15 seconds (i.e., its remote will be set down). If it is the second stalling penalty, the team will forfeit the match. Time spent attempting to reach the designated "starting line" at the start of a match will not be considered as "stalling." However, if one team reaches their "starting line" and turns to engage the other team and the other team begins to take evasive action rather than attempting to reach their "starting line," that time will be counted towards a possible stalling penalty.

8. If robots become entangled so that neither bot can move for 10 seconds, the judges will stop the clock, the teams will place their bots at their respective starting positions and match will resume.

9. A judge may call time if either of the bots is obviously experiencing radio interference. If the cause of the interference cannot be determined, the team may ask to change their frequency.

10. The definition of "out of square:" A bot will be declared the winner when the other bot is completely out of the black marked 5'x5' square (no longer touching the tape). This definition applies whether the bot has been forced out by their opponent or leaves under its own power.

11. If a robot is damaged during competition, the students may make repairs to the bot after the match, while they wait to be called for their next match. A supervised "pit area" will be set aside for each team so that there is no concern of students having access to other teams' bots.

12. Any team that continues to operate their bot after time has been called for a match will forfeit that match.

13. There will be no time outs allowed during a match, except as noted above.

Scoring:

Final rankings will be determined as follows: the team that wins the double elimination tournament will be awarded first place. The team that the winning team defeats in the last match of the tournament will be awarded second place. All other teams will be ranked by their number of wins. Ties will be broken by: (1) the total number of wins divided by the mass of the bot (high score wins) followed by (2) the mass of the robots (lower mass wins). Students may take their bots with them once they eliminated from the tournament; no appeals may be filed once a team has removed their bot from impound.

Verbal Jousting: Debating Tech Issues

Level I

On-Site Judging

Modifications: This is a New York-STEM based event. Complete rules follow.

Event Coordinator: Evie Weinstein nystsa1@gmail.com

Overview:	Teams will prepare to debate a "motion" (topic for discussion) against another team during the school year. A list of research references will be submitted at the beginning of each team's debate. Each team will be assigned just prior to the event whether they will propose ("Pro") or oppose ("Opp") the chosen topic. The 2012 general topic is Biotechnology, with a specific focus on Genetic Engineering. The motion (topic) will be announced at the start of the debate. <u>Students should research Genetic Engineering for this debate.</u>
Purpose:	Debate is an important leadership skill in business, politics, and a wide array of technological careers, particularly with the new challenges in our society. Proficiency in communication skills is necessary in all areas of science, technology, engineering and mathematics (STEM). Developing debate and communication skills is a terrific way to promote technological literacy to meet present and future challenges. This event promotes communication, critical thinking and teamwork.
Eligibility:	Maximum eight (8) teams. Maximum two (2) teams of two (2) students per chapter or group. First-come-first-served. May expand to accommodate #s.
Time Limits:	Each speaker will receive a maximum of three minutes.
Attire:	NYSTSA Conference Attire
Procedure:	<p>A - Participants should come prepared to debate a motion (topic) that will be announced at the event. The motion will relate to genetic engineering.</p> <p>B - Participants will report to the event area at the time and place stated in the program to get their assigned debate time and general directions from the judging team.</p> <p>C - Each team comes to the preparation room at their assigned time. They return at their appointed time and receive the specific debate motion. Both teams will be allotted 10 minutes for preparation in a holding room. They will re-convene for the debate. There will be a finalist round of debate where a new motion relating to the same general topic will be announced. Finalists will be allotted 10 minutes preparation time prior to beginning the final round. Finalist rounds will be announced once registration closes so as to accommodate everyone and allow for event conflicts.</p> <p>D - Debate format:</p> <ol style="list-style-type: none">1. Proposition ("Pro") speaker (Speaker of the House), maximum of 3 minutes without interruption2. Opposition ("Opp") speaker (Leader of the Opposition), maximum of 3 minutes without interruption3. Break: 2 minute Rebuttal Preparation time for both teams4. Pro Rebuttal, maximum of 3 minutes without interruption5. Opposition Rebuttal, maximum of 3 minutes without interruption

	<p>E. - Once the teams are given their Pro or Opp sides, they will go to the event room, introduced only by their ID numbers and instructed where to be seated. Pro teams will sit to the left of the podium, with the Speaker of the House seated closest to the podium. Opp teams will sit to the right of the podium with Leader of the Opposition seated closest to the podium.</p> <p>F. - When teams are ready, the first Pro speaker (Speaker of the House) will move to the podium and begin. Timing begins as soon as the speaker begins. At 2 minutes 45 seconds, a card will be held up saying "15 seconds". There are penalty points for exceeding the time limits.</p> <p>G. - When the Pro speaker is finished, the Opp speaker (Leader of the Opposition) will move to the podium and timing will begin when the speaker begins to speak. This speaker will speak for 3 minutes and the same 15-second warning will be given. Penalty points apply for exceeding the time limit.</p> <p>H. - When the Opp speaker is finished, the timer will announce a two (2) minute conference period during which both teams will prepare their final rebuttal.</p> <p>I.- The timer will announce the conclusion of the 2 minute conference and teams will return to their seats. At this time, the second Pro speaker will move to the podium and begin to deliver a rebuttal for up to 3 minutes. At 2 minutes 45 seconds a 15 second warning card will again be displayed. Penalty points apply for time exceeding the limit.</p> <p>J. - When the second Pro speaker is finished, the second Opp speaker will move to the podium and begin their rebuttal for up to 3 minutes. A 15 second warning will be given. Point deductions will apply for exceeding the time limit.</p> <p>K. - At the conclusion of debate, each team will provide the judges with a single (1) page of references used to research the general topic. Citations must be in MLA format. The reference list must be a word-processed document. Participants will lose points if this document is not provided to the judges.</p>
Regulations:	<p>A - 3x5 note cards with pre-written notes are permitted.</p> <p>B - Participants may take notes during the debate rounds.</p> <p>C - No audio-visual materials may be used.</p> <p>D - Participants may not hear the debates of other teams until the final round.</p> <p>E - Observers may not watch the debate until the final round. No audio or visual recording devices are allowed. No talking or gesturing is allowed. No one is allowed to enter or depart during a presentation. No applause until the debate is finished.</p> <p>F - Team scores are penalized one (1) point per ten (10) seconds for exceeding the 3-minute speaking time.</p>
Evaluation	<p>Teams will be ranked based upon their knowledge of the topic and their communication and persuasive skills. <i>Intelligent humor is valued as long as courteous behavior is maintained!</i></p>

Community Service Video

Level I – NYSTSA

Pre-Competition Judging

Modifications: Modifications are made in accordance with the National TSA Middle School Competitive Events Guide.

Event Coordinator: Caitlyn Vander Maas cvmaas82@gmail.com

Overview:	Delete-Participants create a video that highlights their chapter's involvement in their community, and community service acts.
Challenge:	Delete-Create and submit a finished video, capable of being played on a standalone DVD player that depicts your local TSA chapter's community service.
Eligibility:	Unlimited entries of teams of up to three (3) students.
Time Limits:	No Change The event must be completed by middle school students in the current NYSTSA school year.
Attire:	Delete-NYSTSA Conference Attire
Procedure:	Delete C-All entries become the property of NYSTSA and will not be returned after judging. Delete D-The top three finalists will be announced at the NYSTSA Conference Banquet.
Regulations:	Delete A-Participants should develop the video chronologically, illustrating their chapter's involvement in the community over the course of a particular period of time. This is a pre-judged event. All entries must be mailed to the address below and post-marked by April 9th 2012 . Entries post-marked after this date will be disqualified. All entries must be labeled with NYSTSA Registration ID numbers only. No names. Entries become the property of NYSTSA and will not be returned after judging. Caitlyn Vander Maas DeWitt Middle School 560 Warren Road Ithaca, NY 14850
Evaluation	No Change

Digital Photography

Level I – NYSTSA

Pre-Competition Judging

Modifications: Modifications are made in accordance with the National TSA Middle School Competitive Events Guide.

Event Coordinator: Judy Cogan jcogan@icsd.k12.ny.us

Overview:	Delete-Participants produce and submit an album of digital photographs on a storage device showing a knowledge and proficiency in the field of digital photography, and the use of editing software.
Challenge:	Delete-Participants produce an album consisting of color or black and white digital photographs that represent or relate to a chosen theme and place the album on a storage device for submission. The theme for 2012 is The Art and Science of Technology.
Eligibility:	Delete- Unlimited entries per chapter. Individuals only.
Time Limits:	Delete-B Delete-C
Attire:	Delete-NYSTSA Conference Attire
Procedure:	Delete C-Entries are reviewed by evaluators. Neither students nor advisors are present at this time. Delete-D Delete-E Delete-F Delete-G Delete-H
Regulations:	Delete-C This is a pre-judged event. All entries must be mailed to the address below and post-marked by April 9th 2012 . Entries post-marked after this date will be disqualified. All entries must be labeled with NYSTSA Registration ID numbers only. No names. Entries become the property of NYSTSA and will not be returned after judging. Judy Cogan Ithaca High Senior High School 1401 North Cayuga St. Ithaca, NY 14850
Evaluation	No Change

Promotional Design

Level I – NYSTSA

Pre-Competition Judging

Modifications: Modifications are made in accordance with the National TSA Middle School Competitive Events Guide.

Event Coordinator: Jennifer Hungate Jennifer.Hungate@leCHASE.com

Overview:	Delete-Students will create a computer graphic design for an NYSTSA event of their choice to promote that chosen event.
Challenge:	Delete-Participants create and produce a black and white graphic design appropriate for promoting a chosen NYSTSA event.
Eligibility:	Delete-Unlimited entries are permitted. Individuals only.
Time Limits:	No Change
Attire:	Delete-NYSTSA Conference Attire
Procedure:	Delete C-The top three finalists will be announced at the NYSTSA Conference Banquet.
Regulations:	Delete C- Delete E- This is a pre-judged event. All entries must be mailed to the address below and post-marked by April 9th 2012 . Entries post-marked after this date will be disqualified. All entries must be labeled with NYSTSA Registration ID numbers only. No names. Entries become the property of NYSTSA and will not be returned after judging. Jennifer Hungate 896 Plank Road Penfield, NY 14526
Evaluation	No Change

Website Design

Level I – NYSTSA

Pre-Competition Judging

Modifications: Modifications are made in accordance with the National TSA Middle School Competitive Events Guide.

Event Coordinator: Mike Giallombardo mr_g14625@yahoo.com

Overview:	No Change
Purpose:	No Change
Eligibility:	Delete - Unlimited entries are permitted. Groups of up to three.
Time Limits:	<p>A - All components of the chapter's entry must be finished and accessible via the Internet by midnight Eastern Daylight Time (EDT) on April 13th. After midnight April 13th, changes should not be made to the website. Entries post-marked after this date will be disqualified.</p> <p>B - The URL for the chapter's entry must be Emailed to mr_g14625@yahoo.com by midnight on April 13th. The subject line of the Email must be: Webmaster. . All entries must be labeled with NYSTSA Registration ID numbers only. No names. Entries become the property of NYSTSA and will not be returned after judging. An Email confirmation will be sent no later than April 20th.</p> <p>C - Delete</p>
Attire:	Delete-NYSTSA Conference Attire
Procedure:	<p>A - No change B - Change Email to mr_g14625@yahoo.com C - No change D - No change E - Delete F - Delete G - Delete H - Delete</p>
Regulations:	<p>A - No change B - No change C - No change D - No change E - Delete - Create a sources cited webpage with a list of where the information came from. Use MLA style as a guide F - No change G - Delete H - No change</p>
Evaluation	<p>A - No change B - Delete</p>