

**TEXAS**



# Technology Students Association

**STATE RULEBOOK**

**2007-2008**



## Table of Contents

<u>Title / Course</u>	<u>Page</u>
<b>Forward</b>	5
<b>Membership and Contest Fees</b>	5
<b>Rulebook Committee</b>	6
<b>Sequence for Rulebook Review/Rewrite</b>	6
<b>State Contest Officials</b>	7
<b>Event Chairpersons</b>	7
<b>Judging Criteria</b>	7
<b>Awards – Individual and School</b>	8
<b>New Safety Regulations for Waco Convention Center</b>	9
<b>Competition Rules</b>	10
<b>Required Identification</b>	13
<b>Number of Entries per Region</b>	13
<b>Definitions</b>	14
<b>Contest Deadlines and Required Registration</b>	14
<b>TEXAS TSA ON-SITE EVENTS</b>	15
Hot Rod CO <sup>2</sup> Car Competition	16
Research Racers	17
Safety Poster	17
Club T-Shirt	18
Radio Controlled Vehicle	18
Down Hill Challenge	20
Rocket Launch	21
Control Line Airplanes	22
School Display	23
Land Speed Record Rocket Cars	24
On-Site Robotics	24
Trebuchet Contest	25
R.O.V Contest - Underwater Robotics	25
Middle School Written Exams	25
High School Written Exam	25
Middle School Graphic Solutions	26
High School Graphic Solutions	26
On-Site Computer Applications Skills - Non-NQE Events	27
<b>NATIONAL TSA EVENTS</b>	27
High School NQE	28
Middle School NQE	28
<b>FORMS</b>	30
<b>Protest Forms</b>	31
<b>TEXAS TSA EVENT Personal Liability Release Form</b>	32
<b>Personal Liability Release Form</b>	33
<b>MIDDLE SCHOOL PROJECTS BY CATEGORY</b>	35
Interdisciplinary Display	35
Drafting	36
Photography	36
Desktop Publishing/Graphics	36
Audio / Video Systems	38
Digital Video	38
Robotics	39
Computer-Numeric-Control	39
Interface	39
Energy	39
Power	40
Transportation	40
Application of Energy, Power and Transportation	40

Manufacturing	
Woods	41
Metal / Acrylic	42
Turning Kits	44
Plastics and Resins	44
Casting Materials	44
Precious Metals	45
Recycled Material	45
Combinations	45
Construction Technology	45
Past	45
Present	46
Structures using Construction Processes	46
Future	46
Dimensional Materials	46
Restorations	47
Commercial - Model Kits	47
Biotechnology	47
<b>HIGH SCHOOL PROJECTS BY CATEGORY</b>	49
Wood	50
Metals	52
Other Materials	54
CNC/CAM	55
Communication and Print Media	58
Multimedia and Animation	61
Photography	64
Drafting & CADD	66
Construction, Modeling, & Design	70
Applied Technical Science	72

**It is the policy of Texas TSA not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended.**

**Texas TSA Hotline – (830) 357-2238**

## Foreword

The **Texas Technology Students Association State Competition** is managed and conducted by the Texas TSA Board of Directors and Texas TSA State Contest Director, under the oversight of the Texas Education Agency and its policies regarding CTSOs. The state competition includes a business meeting, state officer election, project competition, and student competitive events. All interested Technology Education students are invited to attend this annual meeting.

In 2007-2008, our Association and competition will be seeing many changes brought about by two major changes. The first major impact is a result of TEA's change to Career Clusters. The following Career Clusters are now approved by TEA to participate in Texas Technology Student Association events and competitions:

- Science, Technology, Engineering, and Math
- Manufacturing
- Architecture & Construction
- Arts, A/V Technology, & Communications
- Information Technology
- Health Science
- Transportation, Distribution & Logistics
- Law, Public Safety, Corrections, & Security

The second change is a result of the rulebook referendum at the 2007 State Contest. The advisors present were allowed to vote on a proposal to remove class-based restrictions and to simplify the rulebook into category-based projects. A majority of the advisors present voted for the referendum and at the Summer Professional Development Conference the rulebook committees meet to accomplish this task.

The specific time and place of events and contest details will be distributed by the Contest Director in March.

The cost of transporting and insuring the projects to and from the competition is the responsibility of the school, teachers, and student. Texas TSA will not be responsible for damage, loss, or theft before, during, or after the competition.

The competition is restricted to the activities and classifications described in this publication. The competition does not attempt to provide a classification for additional activities that might be conducted in the Technology Education programs or other school programs. Only those students and advisors who are registered members of the Texas Technology Students Association are on the regular mailing list. If you would like to receive information regarding state competition, or affiliation please write to: **TX TSA, c/o Karen Ripperger, 6413 Hinsdale Dr., Amarillo, TX 79109-6527 or call Delton Kittrell, Executive Director of Texas TSA 830-249-5138**

## Texas TSA MEMBERSHIP

School chapters must be an affiliated member with the National TSA and Texas TSA in order to participate and/or compete in Regional and State TSA Contest. Students names must be specifically listed in membership rolls with Texas TSA in order to compete at Regional and State contest. Affiliation will be completed online through <http://www.tsaweb.org/>. Chapters be must affiliated prior to November 15th each year to avoid a \$25.00 late fee. Membership application closes on March 1st each year.

## TEXAS TSA STATE CONTEST ENTRY FEE

After qualifying through a Texas TSA regional contest, students are eligible to participate and compete in the Texas TSA State Contest. The 2007-20087 contest will be held at the Waco Convention Center on May 8th, 9th, and 10th. The entry fee is \$5.00 for each entry card (NEW THIS YEAR).

**RULEBOOK COMMITTEE**

Bob Behnke - TSA Board President.  
 Terry & Mary Zimmerman - Contest Directors  
 Delton Kittrell -TEXAS TSA Executive Director  
 Ricky Broussard – Rulebook Chairman  
 All Texas TSA Board of Directors  
 At times, Chairman will appoint people to serve on this committee as needed.

**2007 RULEBOOK Rewrite Participants**

**HIGH SCHOOL**

Dean Price	Ricky Broussard	Jeff Vogel
Pam Cook	Paul Caldwell	Delton Kittrell
Mike Johnson	Doyle Burchett	Jim Brown
Hermelinde Garcia	Greelda Gentry	Curtis Green
Roger McSween	Brian Griffith	
Donald Bennett	Russell Breshears	
Marge Dunlap	Terry Zimmerman	
Russel Hanz	Josh Simmons	
David Harvey	Terry Nelson	

**JUNIOR HIGH SCHOOL/MIDDLE SCHOOL**

Kevin Morosin  
 Don Bell  
 Al Davis  
 Clayton Allen  
 George Turner  
 Billy Howard  
 Bob Leiper  
 John Simmons

The Texas TSA Board of Directors has authorized a re-occurring review/rewrite of the TSA Rulebook. This activity is to occur annually, usually scheduled to coincide with the summer professional development conference. It is intent of the Texas TSA Board that specific categories be reviewed once every four years.

Ricky Broussard– Rulebook Chairman, 300 East Davis, Mesquite, TX 75149 (School: 972-882-7846)  
[rbroussard@mesquiteisd.org](mailto:rbroussard@mesquiteisd.org)

**Course Sequence for Review / Rewrite**

Summer	Middle School	High School
2008		
2009	Sections TBD following review of contest feedback from Advisors which will be gathered at 2008 State Contest	
2010		

## STATE CONTEST OFFICIALS

CONTEST DIRECTOR - TERRY and / or MARY ZIMMERMAN- (School: 281-996-2605) mtbbz@yahoo.com On a yearly basis the State Contest Director will appoint people to run all the UTE/NQE events, Coordinating Judge Chairman, NQE Coordinator, School Awards Coordinator, all Room/Hall Coordinators, Special Services, and Contest Consultants. If you would be interested in running a specific event contact Terry or Mary Zimmerman.

Instructors and all entrants who have a concern regarding event or competition rules should first contact the event judge (if available) to voice your concern. For further concerns contact the state contest directors, and or the Texas TSA executive director.

## EVENT CHAIRPERSONS

Each event chairperson, (after coordination with state contest director) is responsible for the operation of the area assigned and has complete control and authority concerning that event. Questions of eligibility are the responsibility of the Rulebook Committee. Concerns regarding an event must be directed through the chairperson on the *protest forms provided*.

## JUDGING CRITERIA

1. Judging will be based on Rulebook criteria and applied to each project entry as if it were the only entry. Entries are to be judged by the criteria and will not be compared to other entries except for the Best-In-State Award. Entries that are similar may be grouped together to allow judges, with a particular interest or expertise, to locate these entries in a timely fashion.
2. The most qualified judges available will do judging. To avoid a conflict of interest, judges can not judge areas directly related to their school. The awards and decisions of the Judges/Oversight Committee are final.
3. Only those persons authorized by the Contest Director are allowed in the display area after judging begins. Violation of the display or competitive event competition may result in forfeiture of awards by the school, student, chapter, or entry involved or other action determined by the Rulebook Committee.
4. The Oversight Committee may review the project exhibit and provide additional awards to items that may have been overlooked, misplaced, miss-classified or unforeseen conditions. The committee may provide additional awards, but only those that have previously approved by the Texas TSA Board of Directors. Any changes made by the oversight committee, the morning after judging will not affect point totals for school awards. The Oversight Committee shall consist of individuals appointed by the Contest Director.
5. To be considered for the Best in State patch and/or 1<sup>st</sup> place (Onsite), the individual entries **must have** appropriate documentation. Entries which have no documentation may qualify for a ribbon but projects which have documentation will be given greater consideration over those lacking documentation if the projects are of equal quality, level of workmanship, etc...
6. Event coordinators may at their discretion instruct judges to use the lack of documentation as justification to award a lower rating, but this is a decision that must be discussed with all judges in their area ahead of time.
7. Classifications titled "Other" will not necessarily be considered for "Best in State" ribbons or points.
8. Judges, at their discretion, may refuse to award a project or entry a ribbon if it is deemed to be of inadequate quality. To ensure that the project was judged and not simply skipped over the judge will mark the project as "JUDGED" with no ribbon or placement marked on the entry card.
9. HS Advisors cannot be used to judge HS projects and the same will hold true for Middle School advisors. Only with the permission of the Contest Director, will Event Coordinators be allowed to violate this rule.

## PROJECT AWARDS

A rating system of superior, excellent, and outstanding will be used for project competition. Multiple ribbon awards as follows should be given in all classifications. **Awards will be given only if the entry demonstrates adequate quality as deemed by the judge/oversight committee (if needed in special cases). Single entries in a classification do not automatically receive a BIS. Additionally the lack of documentation can cause for not receiving a BIS.**

BIS Award = Best In State  
Blue Ribbon = Superior Rating,  
Red Ribbon = Excellent Rating,  
White Ribbon = Outstanding Rating

## ONSITE AWARDS

Only the **top 10** rankings will be recognized in onsite events. This includes all Texas Onsite events and all National TSA events. First, Second and Third place recipients will receive a ribbon appropriate for their placement. All other finalist, as well as First through Third will receive a Texas TSA State Finalist Pin.

## INDIVIDUAL AWARDS

High Point Middle School Student (receives a Savings Bond)  
High Point High School Student (receives Scholarship)

## SCHOOL AWARDS

High Point Awards will be given to the First thru Third place recipient in Class 1-A thru 5-A for the following:

High Point Project - Middle School  
High Point Project - High School  
High Point Onsite - Middle School  
High Point Onsite - High School

High Point - Average Awards will be given to the First thru Third place recipient in Class 1-A thru 5-A for the following:

High Point Average - Project - Middle School  
High Point Average - Project - High School  
High Point Average - Onsite - Middle School  
High Point Average - Onsite - High School

High Point Average is calculated by Total Points divided by Total Entries  
Required number of entries for High Point School Awards

1A Schools = 20+ entries  
2A Schools = 25+ entries  
3A Schools = 35+ entries  
4A Schools = 40+ entries  
5A Schools = 45+ entries

**Mail-in** entries must be postmarked on or before **March 1st** of the contest year. Mail entries to:  
**TX TSA, c/o Karen Ripperger, 6413 Hinsdale Dr., Amarillo, TX 79109-6527.**

## **NEW SAFETY REGULATIONS FOR WACO CONVENTION CENTER**

Please do not risk being turned away at the door! We cannot put the safety of our patrons at risk.

**All heavy item displays must follow the procedure outlined by the Waco Convention center and provide both the convention center and the contest director with the completed forms by April 25th, 2007.**

### **Dimensions Form**

The City of Waco has defined specific maximum load capacities for heavy equipment exhibits in Chisolm Hall. Waco Convention Center Management requires that all exhibitors intending to exhibit any type of heavy equipment, either free-standing or vehicular, to comply with these maximum load capacities to prevent potential damage to the floor system in Chisolm Hall and the Waco Convention Center. Any vehicle or equipment for exhibit which will meet or exceed 100 pounds per square foot in weight **must provide horizontal dimensions (width and length) of the footprint of the complete rig and unit along with a certified weight ticket indicating the total weight or the rig and unit** at least two (2) weeks prior to the move-in day of the event. This information will be used by Management to determine which items may/may not comply with the maximum floor load capacity of Chisolm Hall. Management reserves the right to request a certified weight ticket on any piece of equipment that has not already been required to submit such, but which might meet or exceed these weight limitations.

Please go to the following website for the Exhibitor Equipment Dimensions Form:

<http://www.wacocvb.com/wcc-dimensions.html>

**Please fax form to: 254 - 750 - 5801**

**Or mail to:**

**Waco Convention Center, PO Box 2570, Waco, TX 76702 - 2570**

**Also send to:**

**Terry and Mary Zimmerman**

**Fax 281 - 996 - 2523 Friendswood High School, 702 Greenbriar, Friendswood, TX 77546**

### **Motor Vehicle Conditions:**

1. Fuel tanks must be drained to less than 1/4 of tank's capacity.
2. Fuel caps must be taped closed or fitted with a lock cap.
3. Hot lead of batteries must be disconnected.
4. Mats must be placed under all wheels.
5. No tire protectant cleaner shall be applied inside the Waco Convention Center.

## **Project Unloading and Loading Policy**

### **Project unloading and loading**

1. **The night before contest unloading** - Only schools with an authorized pass from the state contest director will be allowed to enter convention center that night. Contact the Contest Director 2 weeks prior to obtain an authorized pass.
2. **Unloading – Friday 8 a.m. to 4 p.m.** - On a first come first serve basis, one school at a time will be allowed to backup to each ramp at the rear of the Exhibit Hall. If there is a vehicle at the ramp when you arrive, do not enter the parking lot. Small items can enter the Exhibit Hall through the side doors and down stairs as appropriate. If congestion occurs at the ramp, all vehicles will be cleared to the adjacent parking lot to keep the ramp area free of vehicles. Vehicles must be identified by attaching a 3 x 5 index card inside the window on the drivers side, just above the door handle, so that the following information will be visible from the out side: Drivers name, School name, City, Motel phone number. (Improperly identified vehicles will be towed away at owner's expense).
3. **Loading** - Exhibit Hall doors will not be opened until after the last general session. Be courteous at all times. Vehicles will not be allowed at the ramps during the loading period. Ramp area will be kept open. Properly identified participants will enter the hall from designated areas only and exit the south doors of the convention center. Students will have to carry projects (or use dollies) to their vehicles. All projects must have a claim check before they can be removed. (Or a properly identified chapter instructor can have his or her projects released). Projects can be wrapped or prepared for shipment inside or outside of the Exhibit Hall but not in the ramp area.
4. **TEXAS TSA Board has established the policy to tow a vehicle at the owners expense for vehicles in violation of the above rules.**

## COMPETITION RULES

Violators of the rules and regulations in this rulebook are subject to disqualification as determined by the Rulebook Committee. It will be the responsibility of the individual teacher to assure that all entries are classified and entered in regional and state competition consistent with the classifications found in this publication. If more entries are placed in competition than are eligible from a region, then the school, chapter, student or teacher can be automatically disqualified.

1. Project entries are **NOT** limited to students enrolled in specific courses. As long as students are active members and are in good standing with Texas TSA then they are allowed to compete in any Project Category.

2. Students will be divided into the following Levels:

Middle School Level 1 – Students who have **not** successfully completed ONE (1) Technology Education course. *MS students who complete a semester level course keep their level 1 status for that school year*

Middle School Level 2 – Students who have successfully completed ONE (1) or more Technology Education courses

High School Level 1 – Students who have **not** successfully completed TWO (2) full-credit High School Career and Technical courses (see list for approved Career Clusters)

High School Level 2 – Students who have successfully completed TWO (2) OR MORE full-credit High School Career and Technical courses or are enrolled in an Independent Studies course such as Research and Design or Problem Solving and Solutions.

- Semester courses counts as ½ credit unless it is an accelerated semester (1 credit)

- A students level will be indicated on the entry card - Level 1 and 2 **DO NOT** have separate classification numbers.

**Approved Career Clusters:** (a) Science, Technology, Engineering, and Math, (b) Manufacturing, (c) Architecture & Construction, (d) Arts, A/V Technology, & Communications, (e) Information Technology, (f) Health Science, (g) Transportation, Distribution & Logistics, and (h) Law, Public Safety, Corrections, & Security

3. Each region independently determines and administers the criteria for those who will participate in their regional contest and the procedures necessary to identify eligible entries consistent with the classifications in this publication, current NQE Curriculum Resources Guide, and TEXAS TSA Addendum's. Each region must submit to the TEXAS TSA State Contest Director a list of students qualifying for state competition in the **FORMAT PROVIDED BY THE TEXAS TSA**. The regional president must certify that students on the list are eligible and the entry is entered in the proper classification for state competition. After certification, the regional president will designate one or more representatives to hand deliver the list to the TEXAS TSA Executive Director on or before the deadline. If your school is found to be in violation of the TEXAS TSA rules and regulations your school may be disqualified.

4. Regional personnel will receive state competition entry cards. Entries must compete in regional competition to be eligible to advance to state competition with the exception of the mail-in classifications. Additional cards can only be obtained at state registration with a TEXAS TSA official form signed by the regional president.

5. A student may enter only one project in each classification but may enter more than one classification. A fee is required for each entry.

6. Individual entries must be the work of one student. If more than one student works on an entry it will be considered a team project or a chapter project and entered in an appropriate classification. Team projects will not be used to compute individual high point scholarship award. Only **one entry card and fee** for a team entry is required.

7. Projects must have been started and completed at school during one or both of the semesters of the current school year. Students who attempt to reuse the same project year after year may risk having the school, chapter, student or teacher automatically disqualified.

8. Entries made from commercial kits are not eligible except where permitted by classification rules. Component parts should be made by the student whenever reasonably possible. Component parts purchased in bulk form that are not formed or shaped to the finished or exhibited sizes are not considered kits. (Such as pre-dimensioned lumber, pre-milled custom molding, hardware, etc.) All items not manufactured by students must be listed in documentation.

9. Entries with weight or size limitations cannot be entered in classifications with either smaller or larger limits.

10. Small projects should be suitably mounted or displayed in a case or box furnished by the student or school. The size of the container or display material cannot exceed the dimensions of the entry by 3 inches in any direction. Teachers must unlock display case prior to judging. Projects in locked display cases will not be judged. After judging has been completed, judges will lock display cases. The intent of this rule is to discourage theft. An attempt to provide a "fancy" display case to enhance the entry will not be in the best interest of the student. TEXAS TSA, TSA officials, and Waco Convention Center cannot be held responsible for loss or damage to articles.

11. Minimum Documentation requirements are listed in each section and are required for all entries, especially those which are to be considered for 1st place or B.I.S. awards and points. **HIGH SCHOOL CHAPTERS:** Please see the section heading for each category to determine the minimum documentation requirements for entering projects in that area. There is some variation in the documentation required so please read each section carefully.

- Slide presentations may not exceed 20 slides and must be arranged in a "Kodak" type top loading carousel. Full identification must be on the carousel.

- Video explanations may not exceed 5 minutes and must be on a CD or DVD. Full identification must be on the case label.

- No more than 20 Photographs not to exceed 4" x 6" can be used to show entire processes of a project. Photos must have captions identifying process used or must have statement about photo found in text of written documentation.

- CD-R-ROM entries must be CD-R-R (read only) and be read by the latest version of Internet Explorer or .flc, .avi, and .mov formats. DVD's must also be DVD-R and adhere to the same rules as CDs. All CD's and DVD's must be AUTOPLAY.

12. Protest of contest proceedings or individual concerns related to competitive activities must be submitted in writing on the forms provided and presented in person to the Protest Committee at the published time and place. Concerns expressed after the close of the state competition cannot be evaluated. In all cases, the decision of the Protest Committee is final.

**Protest Committee Members:** Contest Director, Texas TSA Executive Director, Texas TSA Board of Directors President, State Advisor, Corporate Member, and Rulebook Committee Chairperson is authorized to convene and make any necessary decisions.

- If full membership is not available then a quorum of 3 members, which must include the Contest Director, Texas TSA Executive Director, and the Texas TSA Board of Directors President, is authorized to convene and make any necessary decisions.

13. Accessories or items not an integral part of the entry will not be exhibited. If support devices are used, the device may not occupy more floor space or table area than the entry (bed rails may be no longer than 20" long). Full size bed rails must be displayed underneath the 20" mini rails. Examples of accessories are rugs, wineglasses, store bought lampshades, mattresses, etc. The contest director must approve exceptions. An explanation to rulebook waiver should be attached and signed by contest director.
14. The instructor is responsible for the correct classification and placement of entries. Room coordinators can rearrange projects for judging purposes.
15. All Large entries (outdoor type items) will be exhibited outside when space becomes a problem. Schools wishing to enter the school display classifications must contact the Texas TSA Contest Director to determine space availability prior to departure to state contest.
16. It is the individual responsibility of all participants to obtain rules and guidelines for events or classifications entered. All contest entrants and participants agree to abide by the State Rulebook and other pertinent regulations. Lack of knowledge in understanding about a particular event will not be a reason or excuse for changing rules interpretation by contest officials and will not be considered as a valid appeal. Entire chapters can be disqualified for breach of integrity of instructors and/or students.
17. Entries that depict sex, drugs, tobacco, gangs, violence, pornography, or cults will not be permitted. This does not preclude posters, "etc." that may bring awareness of these and other issues as deemed appropriate by TEA, state school board, TEXAS TSA Rulebook Committee, and local school policy.
18. All items not manufactured by students must be listed in documentation.
19. Project batteries must be disconnected. Projects to be judged with power must include a clear explanation to power up for judging or have the entrant available to start the entry.
20. By entering this contest, all Instructors/Sponsors and contest entrants agree to abide by all event and competition rules.
21. No awards, of any type, may be awarded at state contest other than those approved by the Texas TSA Board of Directors.
22. Members must be affiliated by name by March 1 or they will not be eligible to compete at Region or State contest.

## REQUIRED IDENTIFICATION

Students are required to display an identification card on the front of their wearing apparel when on the contest property. The ID card must be 2 x 3½ inches minimum size and maximum size of 2¼ x 4 inches and must contain the following information printed legibly: student's name, instructor's name, School's name and chapter number. **Instructors are also asked to display identification that includes their name, school, and chapter number.**

<b>Texas Technology Students Association State Competition</b>	
_____	
STUDENT'S NAME	
_____	
INSTRUCTOR'S NAME	
_____	
SCHOOL	CHAPTER NUMBER

<b>Texas Technology Students Association State Competition</b>	
_____	
INSTRUCTOR'S NAME	
_____	
SCHOOL	CHAPTER NUMBER

## NUMBER OF ENTRIES PER REGION

**Allowed entries per classification per region :**

Exams	7 for middle school and 7 for high school.
Graphic Solutions	7 for middle school and 7 for high school.
Projects	See explanation below
NQE & On-Site Events	Number of entries at the state conference will follow the guidelines established in the on-site sections of this rule book. See pages 27-28 of rulebook for number of entries.

**\* The number of students allowed in the Written Exam/Graphic Solutions Sessions will be as equally distributed between sessions as possible. Registration for each session will be determined by a "first come - first registered" basis.**

### Projects Entries per region:

Due to the changes in the rule from course-based to category-based these number **ARE SUBJECT TO CHANGE**. The variance in the numbers allowed is a result of removing several course and consolidating the project in those areas into one Category. An example of such is Photography projects for High School. Prior to this year's rulebook, there were photography projects in as many as 8 different course. So as to not punish chapters which entered those contest the Texas TSA Board of Directors has chosen to make necessary changes to prevent a dramatic drop in participation in specific Categories. The Texas TSA Board of Directors also will consult with the Contest Director to make any modification to these numbers as it deems necessary.

Middle School Level 1: 5 projects per region for each classification

Middle School Level 2: 5 projects per region for each classification

High School Level 1: 10 projects per region for each classification

High School Level 2: 10 projects per region for each classification

**EXCEPTIONS:** The Contest Director and Rulebook Chair are studying Past project entries and number of courses being consolidated into a single category area in order to determine if some exceptions should be made in order to maintain the same level of competition as last year. If the decision is made to raise the number of projects in specific categories then efforts will be made to notify all advisors ASAP.

For questions call Terry or Mary Zimmerman (School: 281-996-2605) mtbbz@yahoo.com

## DEFINITIONS

<b>CLASSIFICATION</b>	A unique number that describes a specific activity, course and grade of a student or entry.
<b>DOCUMENTATION DISPLAY</b>	The maximum size of the display area that may be used to communicate the documentation for the entry is 3 feet deep, 3 feet wide, and 5 feet from the floor. Unless otherwise specified in a specific area.
<b>ENTRY</b>	A student, school, chapter, or project participating in state competition.
<b>MASS PRODUCTION</b>	The production of a product where by all parts are being produced in an assembly line fashion.
<b>TEAM</b>	More than one student working on any entry. Only one entry card is required for each team. The teacher may purchase additional awards equal to the award earned by the team entry.
<b>VEHICLE</b>	Any means of conveyance to carry or transport people, objects, or matter.

CONTEST DEADLINES	REQUIRED REGISTRATION
<i>The following entries have a postmark deadline on or before <b>March 1</b> of the contest year.</i>	We will have registration lists at the information desk for all of these events.
1. Affiliating/Adding Student Organization Members (information card)	1. ALL schools attending the Texas TSA State Competition (information card)
2. Proposed Texas TSA Constitution and Amendments and Scholarships	2. Problem Solving events
3. Outstanding Advisor Nominations	3. Technology Bowl teams
4. Outstanding Chapter Nominations	4. Texas TSA Chapter Delegates
5. Outstanding Student Nominations	5. Down Hill Challenge
6. Officer Nominations – State	6. Chapter Teams
	7. Written Exams/Graphics Solutions *
	8. On-Site Uniquely Texas Events

# ONSITE EVENTS SECTION

**National events that will be conducted at the State contest are located at the end of the Texas TSA Contest On-Site Events list.  
Pages 27-29**

**PLEASE NOTE: Sign-up sheets will be available at the Information Desk to determine if any Texas TSA On-Site Events have the necessary personnel to run, judge, and post the results. Participants of these events must provide personnel to run these events or the events will not be held.**

## TEXAS TSA ON-SITE EVENTS

**Texas TSA On-site events use the rules as listed for each event. The event judge may explain additional regulations and procedures that effect the operation of the contest before the events take place.**

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>Hot Rod CO<sup>2</sup> Car Competition</b>	.....3.....	.....00100	00101

(Release form on page 32 required)

*Hot Rod Competition (HRC) provides technology students with another opportunity to use their knowledge and skills in problem solving and the fun and excitement of racing competition.*

*The goal of HRC is to encourage students to design and build realistic looking ¼ mile Hot Rod Car models. The project has been carefully planned to allow students to create realistic 1:24 scale models of dragsters, funny cars, pro-stock cars and trucks and still have a chance to win races. This is accomplished by the **required weights and equipment** and **suggested sizes and equipment**. These specifications have been tested and found to provide the basic guidance needed to produce realistic looking ¼ mile Hot Rod Car models that are exciting to race.*

For question or copy of pickup plans please contact: Don Bell, Dimmitt MS (806)647-2127    dobell@dimmittisd.net (or) Dean Price, Olton HS , (806) 285-2691 ext. 253    dprice@oltonisd-esc17.net

**The Car : Pro Stock Pickup**                      (El Camino and Ranchero style is allowed)

**Required weight**

Minimum 160 Grams or 5.7 oz.
------------------------------

**Required Size:**

Length = 8 - 10"
Width =2.5 - 3"
Height = 2.5 - 3"

**Required Equipment**

Wide rear racing slick, narrow front wheels and tires, Must have a pickup truck bed accurately represented (covered or uncovered) Must have an accurately represented cab or drivers compartment that has windows represented Drag race style hood scoop Pickup requires proper fender El Camino and Ranchero require proper body styles Cartridge can be enclosed in bed or in a formed pod above the bed - if it is a pod, the thickness on all sides of the pod must be 1/4" thick. Pod must be permanently attached to the vehicle.
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**Suggested Equipment**

Rear wing or spoiler roll bar Body details (lights, bumpers, stickers, decals, etc...
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*The Pro Stock Pickup is this year's required Hot Rod; in future years on a rotating basis other cars will be required. This includes Funny Car, Dragster, Classic Hot Rod, Pro-Stock Pickup, Pro-Stock Bike, and Super Stock.*

*The CO2 cartridge will be checked for safety by pushing and pulling about 5 lbs. on it. This equipment is basic for realistic model.  
This equipment will add to the realism of the model.*

**The Track**

*The cars are powered by one 12-gram CO2 cartridge. Some race track systems may not consistently puncher the 12 gram cartridges in which case 8 gram cartridges will be used. The minimum weight and the HRC two lane divided track allows the cars to be raced without string guidance. If HRC track is not available, the standard string guided track can be used.*

**The Competition**

50% Appearance = quality of craftsmanship + authenticity of appearance

50% Race = head to head, single elimination

**Judging**

Appearance > Look for signs of quality and authentic design. Award 1st place through however many entries there are.

Race > Match contestants for 2-car head to head race by random selection. Students are responsible for staging and starting their cars. Winner moves up and will race again after all have raced until there is one winner unbeaten. Award 1<sup>st</sup> place through however many entries there are. If one car red lights it loses the race. If both cars red light the race is restarted. If there are 4 or more entries there will be multiple winners for 3<sup>rd</sup> place and down.

Calculating results > Add placing for Appearance + Race together. The lowest score wins 1st place, the second lowest wins 2nd place and so on... There may be multiple place awards.

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>RESEARCH RACER</b>	3	00102	00103

The intent of the research racer is to allow the student designer freedom to experiment with different material, shapes and ideas when building and designing this race vehicle.

1. Vehicle must be powered by one 8 gram CO2 cartridge.
2. Racer must fit on a standard CO2 track (track cannot be modified to fit car)
3. Power plant chamber wall thickness around the CO2 cartridge: minimum 1/8 inch
4. Power plant chamber depth: Minimum 1 7/8 – Maximum 2 1/8”.
5. Minimum length of racer: 6 inches
6. Guide lugs (screw lugs): minimum distance between lugs 4 inches
7. Race vehicle body must be supported on the track by devices other than the guide lugs used to attach the vehicle to the track. (Examples: wheels, springs, paperclips, Teflon)
8. Weight: minimum 1oz. -----maximum 8 oz.
9. The center line of the power plant chamber must be 1 ¼ inch –1 ½ inch above race surface.

*The judges for safety will check all vehicles, and any vehicle judged unsafe will not be raced. No repair or maintenance is allowed after the entries are checked in. Vehicles that break will not be considered for awards.*

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>SAFETY POSTER</b>	3	00104	00105

A poster to illustrate Technology Education safety. Poster Size: 22 x 28 inches only

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>Club T-shirt</b>	3	00106	00107

A display of one T-shirt, designed and produced for club members to wear. No clip art will be allowed.

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>RC Vehicle - Electric</b>	..... 3 teams .....	00108	00109
<b>RC Vehicle - Gas</b>	..... 3 teams .....	00110	00111

*The course will be an on-road race. Cars will be raced then they must be exhibited for awards. Race results will be posted. For additional information contact: Contest Director*

*The purpose of the RC OR REMOTE CONTROLLED race is to showcase the learning activities of students building radio controlled cars and the components that make up this type of transportation system. The R/C race will be held in the parking lot across the street from the convention center. There will be a pre-race briefing by the viewing stand prior to the race. Claim checks for the radios will be available at the check in counter and at the race site.*

1. *The race will be divided into heats by classification. Each heat will have approximately four cars each.*
2. *The winner of each heat will advance to the next round. The number of teams entered will determine the number of rounds.*
3. *Each round will consist of a four-minute race.*
4. *The final round will consist of an eight-minute race with a required pit stop for all cars. (Battery change for electric cars or refueling for the gas cars at some point during the race).*
5. *A car must be operational and on the track at the end of a race or it will be disqualified.*
6. *Any driver who has the same or more laps in a round as the round qualifiers will also advance to the next*
7. *All radios must be impounded, except when you are racing, until all races are over. Failure to return your*
8. *Someone from your race team must corner marshal at all times.*
9. *Participants may use two or four wheel drive.*

## DOWN HILL CHALLENGE

(Release form on page 32required)

Shop built and kit built cars will not be raced against each other except to determine the king of the hill.

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>KIT BUILT</b>	..... 1 per chapter	00112	00113
<i>Cars with commercial pre-formed body parts.</i>			
<b>LAB BUILT</b>	..... 1 per chapter	00114	00115
<i>All body and chassis parts built by students.</i>			

The "Down Hill challenge," formerly the "Soap Box Derby" has a complete new look. It will be directed more toward technology rather than following the "Soap Box Derby" theme. The authors of these new specifications considered safety, technology, and administration as the deciding factors in developing the rules for this competition.

1. Length - maximum 84".
2. Width - maximum 40".
3. Weight - vehicle and driver not to exceed 300 lbs. Weight may be added to the vehicle to achieve the 300-lbs. maximum. The weight must be securely fastened to the vehicle. Judges will determine if weights are securely attached to the car. The total weight must be the same at the end of the race as at the beginning of the race.
4. All vehicles must have a certified weight receipt from a public scale. These are available at most junkyards, grain elevators, and truck weigh stations. The drivers will be weighed on site before the race. In the event of a change of driver during the event, the team must notify the event coordinator. The new driver must be weighed in. If the new driver fails to meet the weight limit the team must find an alternate driver or remove themselves from the competition.

**DOWNHILL CHALLENGE CONT.**

5. Wheel diameter with tire - minimum 6" - maximum 12" - must have at least 4 wheels, 2 front and 2 rear - must run at all times on 4 wheels.
6. Wheel Width - minimum 30" (front and rear wheels must be at least 30" apart, side to side).
7. The vehicle will be placed on an inclined ramp to start the race. The nose of the vehicle must extend past the wheels and be strong enough to hold the weight of the vehicle and driver on the starting ramp.
8. Brakes must be in good working condition. Brakes will be checked during inspection.
9. Power can be derived solely from the earth's gravity acting on the vehicle. Energy may not be stored or transferred from any other source.
10. Steering systems must be functional and the turning radius restricted to 15-degree lateral wheel movement. This means 7½ degrees each side of center.
11. Helmet – D.O.T approved motorcycle, full face and shield.
12. Driver must race in a "feet first" position.
13. The race will be double elimination
14. At the start of the race all 4 wheels must be touching the inclined surface.
15. The vehicle is to be manufactured/assembled, crewed, and driven by Technology Education students and/or Texas TSA club members.
16. Each vehicle will be required to have one driver, two pit crewmembers, and one-track monitor for the race.
  
17. This event will not be required to follow the "current year" rule listed in the rulebook. (Vehicles can be reused yearly).
18. Safety and vehicle inspection, along with official weigh-in, will occur as scheduled in the conference schedule.
19. All body parts must be securely attached to the car body. Cockpit are if removable must utilize a permanently affixed mechanical system to reattach the removable parts (i.e. latches, hooks etc...)
20. If the Event Coordinator(s) feels there is a serious safety issue with a car then he or she has the right to remove that car from the race if the chapter team fails to fix or repair said issue in a timely or acceptable manner. The Event Coordinator(s) and his/her team shall render decisions on all matters pertaining to the interpretation and enforcement of the rules, the conduct of the race, qualification or disqualification, and the determination of winners, and such decisions shall be final and binding on all concerned. Each contestant, by participation in the race, agrees to be bound by the decisions made under the rules made herein.
21. In case of inclement weather, all entries will be judged as stand alone projects only.
22. Each contestant and his/her guardian must sign the Liability Release Form found on page 23 of this rulebook in order to participate in this event. The Liability Release Form can be photocopied so that the original can be used again.

**Awards**

1. Top THREE (3) cars in each classification will be recognized at the final General Session
2. High School and Middle School King of the Hill will also be recognized at the final General Session
3. Engineering Award - one vehicle that, in the opinion of the judges, exhibits the best design. This award will also be presented at the final General Assembly.

## ROCKET LAUNCH

(Release form on page 32 required)

**Note: All rockets are limited to one engine with size no greater than an "A83"**

Description	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>Rocket (Student Built /Designed)</b>	3	00116	00117
<b>Rocket (Kit)</b>	3	00118	00119

**Kit Rockets:** Rockets for this classification will be built from a commercially produced kit. The student will assemble the rocket following the instructions supplied with the rocket. Rockets that are purchased already assembled and ready to fly are not allowed in this classification. Documentation will include: Assembly Instructions supplied with kit. The appearance (area 1) will be compared to the instruction sheet for correctness of construction. No appearance score will be given without the instruction sheet.

**Clarification:** Extruded and plastic fins are allowed as long as they are individual pieces and not a prefabricated unit. There must be clear evidence that each fin is separately affixed onto the rocket body. No fin rings.

**Student Built/Designed Rockets:** Students must design and build the rocket for this classification from scratch. The student must build the body tube, the nose cone, the fins and the recovery system, without using parts from rocket kits. The only commercially made rocket part that can be used is the engine mount. Documentation: Students must have a drawing of the rocket. The appearance (area 1) will be compared to the drawing for correctness of construction.

**Rockets considered unsafe by the contest judge will not be flown.**

**Judging Criteria:**

- Area 1 — Appearance - weight, strength, shape, surface, smoothness, and color.
- Area 2 — Flight - lift-off, no gyration, steady climb.
- Area 3 — Recovery - separation, chute fully deployed, or streamer lands nearby.

Three judges will award points from 0 to 5 on each of three areas. A perfect score is 45 points. Each judge will evaluate without consultation. The decision of the judges will be final. In case of a TIE, in the top 3 entries, students will fire rockets again. In case of bad weather, the state winners will be judged on appearance only.

**NOTE: Rockets should be test-fired prior to the contest.**

**Instructions:**

1. Only one student on the launch pad.
2. Students must wear safety glasses or goggles while preparing rocket for flight.
3. Student has a 5-minute limit from "GO" to "BLAST OFF".
4. Pick up wadding and old engine casings and dispose of them properly.
5. Points will be awarded accordingly.

## CONTROL LINE AIRPLANE

(Release form on page 32 required)

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>0.049 Endurance</b>	3	00120	00121
<b>0.049 Combat-</b>	3	00122	00123
<b>0.35 Endurance-</b>	3	00124	00125
<b>0.35 Combat</b>	3	00126	00127

### General Information and Requirements

1. A team consists of one pilot and 1 to 2 pit crewmembers. The pilot is to be responsible for the actions and behavior of the pit crew.
2. The pilot must be the builder of the aircraft.
3. Electric starters may be used during the contest.
4. Hand and/or finger protection is required while starting the engines if not using the electric starter.
5. All members of the team during the contest must wear ear and eye protection.
6. The contest director will provide the fuel, streamers, and string leaders used in the contests. All other materials needed to operate, repair, and refuel the aircraft are the responsibility of the competing teams.
7. Teams that violate the intent of the contest are subject to penalties and/or disqualification.

### Endurance Race 0.049 Engines and 0.35 Engines

1. **Description** - The endurance contest is a timed event that will test the pilot's skill along with the skill of the pit crew. The winner is determined by the team with the highest recorded number of laps at the end of the timed flight period.
2. **Objective** - The team must complete:
  - A. Total laps below approximately 10' of air space.
  - B. Refuel and continue flying at least once.
3. **Engines**

**0.049 Endurance** - Only one Cox 0.049 Golden Bee or Black Widow stock engine with stock fuel tank will be permitted.

**0.35 Endurance** - Only one Fox 0.35 stunt engine will be permitted. No modifications to the engine or carburetor system will be permitted. A fuel tank capacity of a maximum of 3.5 fluid ounces will be permitted.
4. **Aircraft Requirements** - Any style or design of aircraft will be permitted. The aircraft must fly counterclockwise in an upright position.
5. **Controls**

**0.049 Endurance**

  - A. Control lines must be of at least 0.012" dia. Multi-stranded steel wire.
  - B. The length of the line must be **25' + or - 3"** measured from the bell crank screw to the back of the control handle.
  - C. The control handle must have a safety strap and the flier must have the safety strap attached around the wrist during the contest.
  - D. The engine must have a safety line of at least 0.012" dia. Multi-strand steel wire fastened around the engine to the bell crank screw.

**0.35 Endurance**

  - A. Control lines must be of at least 0.018" dia. Multi-strand steel wire.
  - B. The length of the line must be **52' + or - 3"** measured from the bell crank screw to the back of the control handle.
  - C. The control handle must have a safety strap and the flier must have the safety strap attached around the wrist during the contest.
  - D. The engine must have a safety line of at least 0.018" dia. Multi-strand steel wire fastened from around the engine to the bell crank screw.
6. **Fuel** - The fuel will be provided by the contest coordinator.
 

**0.049 Endurance**  
Standard 25% Nitro methane with castor oil lubricants will be used.

**0.35 Endurance**  
Standard 5% Nitro methane with castor oil lubricants will be used.
7. **Pull Test** - Each "ready-to-fly" aircraft and controls must pass a pull test prior to flight.
 

**0.049 Endurance**  
5 pound pull test

**0.35 Endurance**

10 pound pull test

- 8. **Timed Event** - At the start of the event, the team must start the engine, launch the aircraft and complete as many laps as possible.
- 9. **Penalties** - Teams may lose laps if the pit crew enters the flying circle at any time or the pit crew or pilot re-enters the flying compound without permission.
- 10. **Winners** - The winners of the endurance races will be determined by the highest numbers of laps recorded less any penalty laps.

**Combat for 0.049 Engines and 0.35 Engines**

- 1. **Description** - The combat contest is a timed event with two pilots in the center circle at the same time. The winner is determined by the number of points at the end of the timed flight period.
- 2. **Objective** - The team must:
  - A. Start and fly your aircraft before your opponent get their aircraft in the air.
  - B. Use your aircraft to cut the streamer behind your opponents aircraft.
  - C. Avoid having your streamer being cut by your opponent.
  - D. Remain airborne while your opponent is not flying.
- 3. **Requirements**- all aircraft, engine, controls, fuel, fuel tanks, timed event, and pull test requirements must comply with the endurance requirements.
- 4. **Streamer -streamers will be provided by the contest director.**
  - 0.049 Endurance**- 2 colored pieces of paper, 1/2" wide and 3' long secured with 2' leader of string behind the aircraft.
  - 0.35 Endurance**- 2 colored pieces of paper, 2" wide and 6' long secured with 2' leader of string behind the aircraft.
- 5. **Points**- When the contest director signals for the contest to begin, teams may gain points in the following area:
  - A. Upon the start of the contest, if a team is airborne 4 seconds before the opposing team **20 points** will be awarded.
  - B. After both aircraft are airborne, the contest director will signal for the start of combat. Points may be gained in the following areas:
    - 1. For every second an aircraft is airborne and the opponent's is not airborne, **1 point per second** will be awarded.
    - 2. Each time an aircraft cuts his opponent's streamer, **100 points** will be awarded.
- 6. **Penalties** - Teams may lose points in the following area:
  - A. Pilot leaves the pilot circle - **Minus 100 points**
  - B. Pit crew enters the flying circle- **Minus 100 points** the first time, disqualification the second time.
- 7. **Winners** - teams must fly in single elimination rounds. Winners of each round are determined by points recorded. Points DO NOT accumulate.

**SCHOOL DISPLAY**

*Entries may be for exhibit only and awards may or may not be earned as determined by contest judges. Student must tell the contest coordinator if the entry is "For Judging" or "For Display Only" prior to judging. A team must have produced a product or solved a technological problem. Individual projects are not entered in these classifications. The contest director may refuse entry of a school display due to safety or space availability. School Displays must be approved by the contest director, **two weeks prior to state contest.***

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>Activities in more than two curriculum areas</b>	3	00128	00129
<b>Communication Technology</b>	3	00130	00131
<b>Power/Energy/Transpiration</b>	3	00132	00133
<b>Manufacturing/Construction</b>	3	00134	00135
<b>Bio-Tech</b>	3	00136	00137

## LAND SPEED RECORD ROCKET CARS

(Release form on page 32 required)

*The Land Speed Record Rocket Car competition is based on the actual rocket and jet powered cars that in 1997 competed for the title of the Land Speed Record holder by breaking the **speed of sound** (741MPH at sea level). Technology students will have fun designing, building, and racing their own model size (1:25) Rocket Car.*

Class# 7-8	Class# 9-12	ENTRIES PER REGION	Engine	Dimensions (Suggested) L x W x H (inches)	Weight (Required) (ounce/grams)	Configuration (minimum)
00138	00139	3	1C or 2Bs or 4 As	24 x 8 x 4	6.2 oz/175g	4 wheels 3 steering lugs 1 parachute
00140	00141	3	1D or 2Cs or 4Bs	24 x 8 x 4	12.3 oz/350g	4 wheels 3 steering lugs 1 parachute
			It is suggested you use the shortest delay engine	These sizes are close to the actual car sizes	These minimum weights are required for safe launching	It is suggested you use thick plastic or metal steering lugs and epoxy

### Competition

1. Competitors will construct their vehicles prior to the competition and all vehicles must have been test raced.
2. The competitors or a designated replacement must be present to stage and launch the vehicle.
3. The competitors must supply their own engines, igniters, plugs, and wadding. Engines must comply with the classification specification.
4. The event coordinator will provide the track. Vehicles using a C engine (or 2 B engines) on a 300-foot track and D engine (or 2 c engines) on a 400-foot track. The event coordinator may modify the track length as needed. All cars will have a working parachute or other stopping device.
5. A radar device will be used to measure the speed of the vehicle. The radar device will be located at 50 feet for B engines, 75 feet for C engines and 100 feet for D engines.

### Judging

1. Vehicles will be judged 50% on design and craftsmanship and 50% speed on a guided wire track. The vehicles will be rated by design from 1 to the number of vehicles entered in each classification, one being the lowest in the series. Then the entries will be rated by speed from one through the number of entries, one being the slowest. The two numbers will be added to determine the final rating or place. In the event of a tie, multiple awards will be given.
2. All vehicles will be inspected by the judges to insure they are able to withstand the speed test.
3. EACH of the THREE METAL STEERING LUGS MUST WITHSTAND A 5-POUND PULL TEST. If the judge determines the vehicle is unfit to withstand the speed test the vehicle will be disqualified from the speed test and judged solely on appearance. If the vehicle can be modified or repaired and pass inspection it may be re-entered and raced at the judges discretion. Repair must be completed and the vehicle re-inspected and deemed ready to race before the classification is completed.
4. ENGINES- the engines will be inspected to insure the correct size before each run. Competitors should prepare their engine but it must not be installed prior to the judge's inspection at the starting gate.

NEW CLASS FOR 2007-2008					
00142	00143	1e or 2Ds or 4Cs	28 x 10 x 4 <i>required minimum dimensions (this class only)</i>	16 oz/450g	3 wheels minimum 4 steering lugs 2 parachutes (large plastic) 1 cloth (12" dia minimum)
<b>Limit of 2 per Chapter. This class only!</b>					

For questions about the new class please contact: Dean Price, Olton HS , (806) 285-2691 ext. 253  
dprice@oltonisd-esc17.net

It is suggested you use the shortest delay engine  
Metal steering lugs and epoxy required  
These minimum weights are required for safe launching

**Special Rules for new class only:**

1. Wheels must be radio controlled airplane rubber tires. No CO2 car wheels or CD wheels will be allowed. Wheels must be 2" minimum in diameter.
2. Two wheels must be at least 6" apart (width of car body) and wheel's pattern must maintain the car in an upright position while running. Triangular arrangement is best if 3 wheels are used. You can use more than 3 wheels.
3. Motors must be all located in the main body or tube of the vehicle. No motors located on appendages attached to the main body will be allowed.
4. Parachutes must be permanently attached to the car and must function properly. Parachutes can be located on body appendages.
5. Must have 4 metal eyelets for guidance and these must pass a 5 lb. pull test.
6. These cars must appear or look like "real" landspeed cars. No PVC pipe cars will be allowed.
7. If in the opinion of the judges, a car is deemed to dangerous to run it will be judged on looks only.

**Entries Per Region                      Grades 6 - 8                      Grades 9 - 12**

<b>ON-SITE ROBOTICS COMPETITION</b>	..... 3 Teams .....	00144	00145
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*This competition is designed to allow student teams to design, construct, operate and compete with a robotic device during an on-site contest. Specific rules, course design and challenges will be revealed on the Texas TSA website [www.texastsa.org](http://www.texastsa.org). In general the course will probably be a 12' x 20' area. Robots will probably be required to fit in an starting area 24" x 24" x 24" and not weigh more than 30 pounds. Robots will have to be tether controlled with enough cable to complete the course from a "Home Control Station".*

**Entries Per Region                      Grades 6 - 8                      Grades 9 - 12**

<b>TSA TREBUCHET CONTEST</b>	..... 3 Teams .....	00146	00147
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*Rules for the contest and procedures may be found on the Texas TSA Website.*

	Entries Per Region	Grades 6 - 8	Grades 9 - 12
<b>Remote Operated Vehicle Contest (Underwater Robotic R.O.V.)</b>	..... 3 Teams .....	00147	00148

*This is a new event that Texas TSA has sanctioned with N.A.S.A and the National M.A.T.E. foundation. This contest will be held at the N.A.S.A. Buoyancy Pool located in Houston, Texas in May of 2007. Entries will have the opportunity to advance to the National M.A.T.E. foundation event. To obtain more information of entering this contest, see the Texas TSA Website. (Please note that no TSA points will be awarded for entry in the actual event due to it being held after the state contest. The robot and display will be judged on appearance and quality of the display alone, which will result in points for the award given.)*

## MIDDLE SCHOOL TECHNOLOGY EDUCATION WRITTEN EXAMINATION

- Exam content will be generated from the TEKS defined for each course
- The student must be enrolled in or have been enrolled in the course this school year to complete the exam.
  
- Students must supply a sharp number 2 pencil and a hard surface, such as a clipboard, to lay the answer sheet on while marking answers. Maximum size of the surface will be 12 x 16 inches.
- Contest limit - 1 hour.

	Entries per Region	Classification
Technology Education Exam .....	7 .....	00200
Exploring Communication Technology Exam .....	7 .....	00201
Exploring Computer Applications Exam .....	7 .....	00202
Exploring Construction Technology Exam .....	7 .....	00203
Exploring Energy, Power, & Transportation Technology Exam .....	7 .....	00204
Exploring Manufacturing Technology Exam .....	7 .....	00205

## HIGH SCHOOL TECHNOLOGY EDUCATION WRITTEN EXAMINATION

- Exam content will be generated from the TEKS defined for each course
- The student must be enrolled in or have been enrolled in the course this school year to complete the exam.
  
- Students must supply a sharp number 2 pencil and a hard surface, such as a clipboard, to lay the answer sheet on while marking answers. Maximum size of the surface will be 12 x 16 inches.
- Contest limit - 1 hour.

	Entries per Region	Classification
Technology Systems .....	7 .....	00206
Engineering Principles .....	7 .....	00207
Technology Systems - Modular Lab Based .....	7 .....	00208
Bio-related Technology .....	7 .....	00209
Communication Systems .....	7 .....	00210
Computer Applications .....	7 .....	00211
Construction Systems .....	7 .....	00212
Energy, Power, & Transportation Systems .....	7 .....	00213
Manufacturing Systems .....	7 .....	00214
Architectural Graphics .....	7 .....	00215
Communication Graphics .....	7 .....	00216
Engineering Graphics .....	7 .....	00217
Computer Multimedia & Animation Tech .....	7 .....	00218
Architectural Construction .....	7 .....	00219
Electricity/Electronics .....	7 .....	00220
Manufacturing Technology .....	7 .....	00221
Principles of Technology I .....	7 .....	00222
Principles of Technology II .....	7 .....	00223
Communication Graphics - Modular Lab Based .....	7 .....	00224

## MIDDLE SCHOOL TECHNOLOGY EDUCATION GRAPHIC SOLUTIONS

*- This competition will test the student's ability to solve a given problem with minimum supplies. The only items that may be taken into the contest area are: flat drawing surface, such as a clipboard, (maximum size of 12 x 16 inches), pencils and eraser. Drafting aids will not be allowed. Participants will be seated in regular folding chairs. Grid paper will be supplied. Contest time limit will be one hour. The student must be enrolled in or have been enrolled in the course this school year to complete the graphic solution.*

	Entries per Region	Classification
Technology Education Exam .....	7	00300
Exploring Communication Technology Exam .....	7	00301
Exploring Computer Applications Exam .....	7	00302
Exploring Construction Technology Exam .....	7	00303
Exploring Energy, Power, & Transportation Technology Exam .....	7	00304
Exploring Manufacturing Technology Exam .....	7	00305

## HIGH SCHOOL TECHNOLOGY EDUCATION GRAPHIC SOLUTIONS

*- This competition will test the student's ability to solve a given problem with minimum supplies. The only items that may be taken into the contest area are: flat drawing surface, such as a clipboard, (maximum size of 12 x 16 inches), pencils and eraser. Drafting aids will not be allowed. Participants will be seated in regular folding chairs. Grid paper will be supplied. Contest time limit will be one hour. The student must be enrolled in or have been enrolled in the course this school year to complete the graphic solution.*

	Entries per Region	Classification
Technology Systems .....	7	00306
Engineering Principles .....	7	00307
Technology Systems - Modular Lab Based .....	7	00308
Bio-related Technology .....	7	00309
Communication Systems .....	7	00310
Computer Applications .....	7	00311
Construction Systems .....	7	00312
Energy, Power, & Transportation Systems .....	7	00313
Manufacturing Systems .....	7	00314
Architectural Graphics .....	7	00315
Communication Graphics .....	7	00316
Engineering Graphics .....	7	00317
Computer Multimedia & Animation Tech .....	7	00318
Architectural Construction .....	7	00319
Electricity/Electronics .....	7	00320
Manufacturing Technology .....	7	00321
Principles of Technology I .....	7	00322
Principles of Technology II .....	7	00323
Communication Graphics - Modular Lab Based .....	7	00324

## On-Site Computer Skills Contest Non-NQE Events

*Participating schools must supply all necessary software, hardware, paper, etc. A hard copy of the solution is required in most events. A printout of one or more pages of an animation or presentation is desirable, but not required. Events such as animation's and presentations will be demonstrated to a judge. Limited to three participants per region in each classification. These events will only be offered one time at state contest.*

Description	Entries Per Region	Grades 6 - 8	Grades 9 - 12
CADD Engineering Graphics	3	00400	See NQE List
CADD Architectural Graphics	3	00402	See NQE List
CADD/CAM/CNC (lathe, mill, or router)	3	00404	00405
Animation	3	00406	00407
Graphic Design, Artistic	3	00408	00409
Multi-Media Presentation	3	004010	00411

## NATIONAL TSA EVENTS

The National TSA Curricular Resource Guide may be obtained from National TSA, 1914 Association Drive, Reston, VA, 22091, phone number (703) 860-9000. All of these events will use the national rules available from the above address. The top five winners are requested to represent Texas at the National TSA competition in those classifications that have multiple place advancement. Information about the national conference may be obtained from the above address.

Refer to the appropriate National TSA Curricular Resource Guide for the number of entries per chapter for the classifications below:  
**(THERE ARE TWO BOOKS - ONE FOR MIDDLE SCHOOL AND ONE FOR HIGH SCHOOL)**

Chapters are also encouraged to submit nominations for the following:

Advisor of the Year

Chapter Excellence

Go to <http://www.tsaweb.org/content.asp?contentid=638> to see more information about National TSA's Awards and recognitions.

The above entries have a deadline postmark on or before **March 1st**.  
Send to: TX TSA, c/o Karen Ripperger, 6413 Hinsdale Dr., Amarillo, TX 79109-6527

**A student may enter only ONE NQE on-site CADD contest**

**A student can only enter one of events 00555 THRU 00561 and 00605 these events are offered only one time at the state contest and the student must compete in only one per session.**

On site computer skills contests will only be conducted at the designated times in South Brazos. **"NO EXCEPTIONS"**

**Schedule for testing will be posted on the Texas TSA website.**

**Contact the Contest Director for event modifications and contest time schedule**

## High School NQE'S

Event	Entries Per Region	Classification
Agricultural and Biotechnology Design	(three teams per region)	00550
Animatronics	(three teams per region)	00551
Architectural Model	(three individuals / teams per region)	00552
Career Comparisons	(three individuals per region)	00553
Chapter Team	(two teams of six members per region)	00554
CADD Architectural	(three individuals per region)	00555
CADD Engineering	(three individuals per region)	00556
CADD, Animation, Architectural	(three individuals per region)	00557
CADD, Animation, Engineering	(three teams of two members per region)	00558
Construction Systems	(three teams of two individuals per region)	00559
Cyberspace Pursuit	(three teams of three to five members per region)	00560
Desktop Publishing	(three individuals per region)	00561
Dragster Design	(three individuals per region)	00562
Electronic Research	(three individuals per region)	00563
Engineering Design	(three teams of three to five members per region)	00564
Extemporaneous Presentation	(three individuals per region)	00565
Film Technology	(three teams per region)	00566
Flight Endurance	(three individuals per region)	00567
Imaging Technology	(three individuals per region)	00568
Jaguar F1 CAD/CAM Design Challenge	(all registered with National TSA)	00569
Manufacturing Prototype	(three individuals per region)	00570
Medical Technology	(three teams of two or more members per region)	00571
Prepared Presentation	(three individuals per region)	00572
Promotional Graphics	(three individuals per region)	00573
Robotics (Radio Controlled)	(three teams of two individuals per region)	00574
Scientific and Technical Visualization(SCIVIS)	(three teams per region)	00575
Structural Engineering	(three teams of two members per region)	00576
System Control Technology	(three individuals per region)	00577
Technical Research and Report Writing	(three individuals per region)	00578
Technical Sketching and Application	(three teams of two members per region)	00579
Technology Bowl	(three teams of two members per region)	00580
Technology Challenge	(three teams of two members per region)	00581
Technology Problem Solving	(three teams per region)	00582
Transportation Modeling	(three individuals / teams per region)	00583
Video Game Design	(three individuals / teams per region)	00584

## Middle School NQE'S

Event	Entries Per Region	Classification
Agriculture and Biotechnology Challenge	(three teams per region)	00600
Career Challenge	(three individuals per region)	00601
Challenging Technology Issue	(three teams of two individuals per region)	00602
Chapter Team	(two teams of six individuals per region)	00603
Communication Challenge	(three individuals per region)	00604
Construction Challenge	(three teams of two individuals per region)	00605
Cyberspace Pursuit	(three teams of three to five individuals per region)	00606
Digital Photography Challenge	(three individuals per region)	00607
Dragster Design Challenge	(three individuals per region)	00608
Electrical Applications	(three individuals per region)	00609
Electronic Game Challenge	(three teams per region)	00610
Environmental Challenge	(three teams of two individuals per region)	00611
Flight Challenge	(three individuals per region)	00612

<b>Middle School NQE'S cont.</b>
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<b>Event</b>	<b>Entries Per Region</b>	<b>Classification</b>
Graphic Design Challenge	(three individuals per region)	00613
Inventions and Innovations	(three teams of three individuals per region)	00614
Leadership Challenge	(three teams of three individuals per region)	00615
Manufacturing Challenge	(three teams of two or more individuals per region)	00616
Medical Technology Challenge	(three teams of two or more individuals per region)	00617
Prepared Speech	(three individuals per region)	00618
Problem Solving	(three teams of two individuals per region)	00619
Structural Challenge	(three teams of two individuals per region)	00620
System Control Technology	(three teams of three individuals per region)	00621
Technical Design Challenge	(three individuals per region)	00622
Technical Writing Challenge	(three individuals per region)	00623
Technology Bowl Challenge	(three teams of three individuals per region)	00624
Technology Transfer Challenge	(three teams per region)	00625
Transportation Challenge	(three individuals per region)	00626
TSA Cup Marine Design Challenge	(three teams of two individuals per region)	00627
TSA Multimedia	(three individuals per region)	00628
Video Challenge	(three teams per region)	00629
Jaguar F1 – CAD/CAM Design Challenge	(all registered with National TSA)	00630

# FORMS

# PROTEST FORM

DATE: \_\_\_\_\_ CHAPTER NUMBER: \_\_\_\_\_

SCHOOL: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ INSTRUCTOR: \_\_\_\_\_

INSTRUCTOR CELL PHONE #: \_\_\_\_\_

PROJECT CLASSIFICATION NUMBER: \_\_\_\_\_ PROJECT I.D. \_\_\_\_\_

NATURE OF PROTEST \_\_\_\_\_

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SIGNATURE \_\_\_\_\_

OFFICIAL USE ONLY: COMMITTEE'S ACTION:

**No conference attendee will be allowed to participate in the State Down Hill Challenge, Rocket Car, Rockets, Control Line Airplane and/or any other designated events unless this form is completed and presented to the Texas TSA judges during inspection for that event.**

## TEXAS TSA Event Personal Liability Release Form

**Required by:** Texas TSA

**Chapter Advisor Instructions:** At time of registration, the advisor must submit this signed original release form to Texas TSA. *This form may be photocopied.*

Name of Participant \_\_\_\_\_

Social Security # \_\_\_\_\_ Date of Birth \_\_\_\_\_ Regional Association \_\_\_\_\_

School \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ Zip Code \_\_\_\_\_

Home Phone: (     ) \_\_\_\_\_ School Phone: (     ) \_\_\_\_\_

“I hereby agree to release the Texas Technology Students Association, Inc., its representatives, agents, servants, and employees from liability for any injury to the above named person at any time while attending the Texas TSA State Conference, participation in the Down Hill Challenge, Rocket Car, Rockets, and/or any other designated events, including travel to and from the conference, excepting only such injury or damage resulting from willful acts of such representatives, agents, servants, and employees.”

“I do voluntarily authorize the Texas TSA state conference director, assistants and /or designees, student’s sponsor, to administer and/or obtain routine or emergency diagnostic procedures and/or routine or emergency medical treatment for the above named person as deemed necessary in medical judgment.”

“I agree to identify and hold harmless the Texas TSA, and said state conference director and/or assistants, and designees, and student sponsor, and the city of Waco and/or city employees, for any and all claims, demands, actions, rights of action, and/or judgments by or on behalf of the above named person arising from or on account of said procedures and/or treatment rendered in good faith and according to accepted medical standards.”

Adult/Parent or Guardian (if no child or student)	Date
Participant	Date

**Note: Instructors are encouraged to complete a Personal Liability Release Form for each student who attends the state conference. If your school does not provide a personal liability form then instructors are encouraged to use the one below.**

### Personal Liability Release Form

Name of Participant \_\_\_\_\_

Date of Birth \_\_\_\_\_ ESC # \_\_\_\_\_ Regional Assoc. \_\_\_\_\_

School \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ Zip Code \_\_\_\_\_

Home Phone ( ) \_\_\_\_\_ School Phone ( ) \_\_\_\_\_

"I hereby agree to release the Texas Technology Students Association, Inc., its representatives, agents, servants, and employees from liability for any injury to the above named person at any time while attending the Texas TSA State Conference, including travel to and from the conference, excepting only such injury or damage resulting from willful acts of such representatives, agents, servants, and employees."

"I do voluntarily authorize the Texas TSA state conference director, assistants and /or designees, student's sponsor, to administer and/or obtain routine or emergency diagnostic procedures and/or routine or emergency medical treatment for the above named person as deemed necessary in medical judgment."

"I agree to identify and hold harmless the Texas TSA, and said state conference director and/or assistants, and designees, and student sponsor, and the city of Waco and/or city employees, for any and all claims, demands, actions, rights of action, and/or judgments by or on behalf of the above named person arising from or on account of said procedures and/or treatment rendered in good faith and according to accepted medical standards."

\_\_\_\_\_  
*Adult/Parent or Guardian (if child or student)*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Participant*

\_\_\_\_\_  
*Date*



# TEXAS



## MIDDLE SCHOOL SECTION

### CATEGORY BASED PROJECTS

**REQUIRED MINIMUM DOCUMENTATION:**

**Level 1** - Single Page containing a Bill of Materials and a single descriptive paragraph explaining the design, development and production of project.

**Level 2** - Cover - centered on the page in consecutive lines, the student (s)' name(s), the product name, and school name

2 page max - Description of product, instructions for its use, design process, production process, bill of materials, software/hardware used, etc...

3 pages max - sketches, working drawings, pictures of production process, etc...  
(minimum of 1 page in this section)

Documentation can be housed in a 3-ring binder, folder, or plastic page protector. (or the equivalent of listed items)

**BELOW IS THE DOCUMENTATION REQUIREMENTS FOR DESKTOP PUBLISHING, GRAPHICS, and PHOTOGRAPHY**

**REQUIRED MINIMUM DOCUMENTATION:**

**Level 1** - Single Page containing a Bill of Materials and a single descriptive paragraph explaining the design, development and production of project.

**Level 2** - Cover - centered on the page in consecutive lines, the student (s)' name(s), the product name, and school name

2 page min and 4 page max- Description of product, instructions for its use, design process, production process, script, software/hardware used, sketches, storyboards, etc...

Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

**INTERDISCIPLINARY DISPLAY**

The interdisciplinary display encompasses the application of the academic courses (science, math, history, Language Arts) through the project method of instruction. The emphasis in this category is on the student's ability to correlate the academics as they apply to the development and manufacture of a product or the construction of a product. In addition, to the documentation required by the individual units within the Technology course, further evidence is needed to specifically address the application of skills acquired in the academic courses. **(Individual or Team)**

**Classification**

02000

**DRAFTING**

*Paper size not to exceed 12" x 18" (B-Size)*

*Pages from exercise books, blueprints or other reproductions are not acceptable.*

**Classification**

Sketching/Free hand - Single Part-(No Rendering. See Graphics Section) One sheet	02001
Sketching / Free hand - Single View with pictorial	02002
Sketching / Free hand - Single View without pictorial	02003
Sketching / Free hand - Two View with pictorial	02004
Sketching / Free hand - Two View without pictorial	02005
Sketching / Free hand - Three View with pictorial	02006
Sketching / Free hand - Three View without pictorial	02007
Sketching /Free hand - Pictorial	02008
Sketching /Free hand Working Drawing	02009
Single View - - One sheet with pictorial	02010
Single View - - One sheet without pictorial	02011
Two View - One sheet with pictorial	02012
Two View - One sheet without pictorial	02013
Three View - One sheet with pictorial	02014
Three View - One sheet without pictorial	02015
Pictorial - One sheet	02016
Working Drawing	02017
Architectural - Maximum four sheets (May include plot plan, floor plan, elevations, and/or door/window schedule etc.)	02018
Presentation Drawing - Engineering	02019
Presentation Drawing - Architectural	02020
Aerospace related drawings - Max 2 page	02021
Machine - Maximum two sheets	02022
CADD - Single View - One sheet with pictorial	02023
CADD - Single View - One sheet without pictorial	02024
CADD - Two View - One sheet with pictorial	02025
CADD - Two View - One sheet without pictorial	02026
CADD - Three View - One Sheet with pictorial	02027
CADD - Three View - One Sheet without pictorial	02028
CADD - Pictorial - One Sheet	02029
CADD - Working Drawing	02030
CADD - Architectural - Maximum four sheets (May include plot plan, floor plan, elevations, and/or door/window schedule etc.)	02031
CADD - Aerospace related drawings - Max 2 page	02032
CADD - Machine - Maximum two sheets	02033
Computer generated 3-D designs	02034
CADD - Presentation Drawing - Engineering	02035
CADD - Presentation Drawing - Architectural	02036

## PHOTOGRAPHY

*All photos will use mounting adhesive along the top edge of photograph not to exceed 3/4-inch and be mounted on white typing paper not to exceed 8.5" by 11". **No matting will be allowed**. All photos will be student processed unless otherwise stated.*

	Classification
Pin hole photograph .....	02040
Still Life - Color (student printed) .....	02041
Still Life - Black and White .....	02042
Still Life - Color (commercial chemical printed process) .....	02043
Still Life – Digital .....	02044
Action/Motion - Black and White .....	02045
Action/Motion - Color (student printed) .....	02046
Action/Motion - Color (commercial chemical printed process) .....	02047
Action/Motion – Digital .....	02048
Landscape - Black and White .....	02049
Landscape - Color (student printed) .....	02050
Landscape – Color (commercial chemical printed process) .....	02051
Landscape – Digital .....	02052
Marine - Black and White .....	02053
Marine – Color (student printed) .....	02054
Marine – Color (commercial chemical printed process) .....	02055
Marine – Digital .....	02056
Portraits - Black and White .....	02057
Portraits - Color (student printed) .....	02058
Portraits – Color (commercial chemical printed process) .....	02059
Portraits –Digital .....	02060
Special effects - Black and White .....	02061
Special Effects – Color (student printed) .....	02062
Special Effects – Color (commercial chemical printed process) .....	02063
Special Effects -Digital .....	02064
Close-up (MACRO) .....	02065
Close-up (MACRO) - Black and White .....	02066
Close-up (MACRO) - Color (student printed) .....	02067
Close-up (MACRO) – Color (commercial chemical printed process) .....	02068
Close-up (MACRO) –Digital .....	02069
Photo essay four to six prints with captions or titles not to exceed a maximum of 36" x 36" display area. Must tell a story, process or concept. ....	02070
Photo essay – 7 or more prints with captions or titles not to exceed a maximum of 36" x 36" Display area. Display or manual format .....	02071
Slide Series - Maximum of 20 slides arranged to tell a story or explain a process. Slides must be arranged in order in a top-loading carousel. ....	02072

## DESKTOP PUBLISHING/GRAPHICS

	Classification
Screen Print - one color - hand cut .....	02080
Screen Print - multi-color - hand cut .....	02081
Screen Print - one color - thermal screen .....	02082
Screen Print - multi-color - thermal screen .....	02083
Screen Print - one color - photo emulsion .....	02084
Screen Print - multi-color - photo emulsion .....	02085
Computer Generated Design Transfer - one color .....	02086
Computer Generated Design Transfer - multi- color .....	02087
Computer digital transfer .....	02088
Business Cards/Name Tags, etc. ....	02089
Certificate .....	02090
Form - Single Sheet .....	02091
Product description .....	02092
Fly sheet .....	02093
Product specification sheets .....	02094
Owners/Operators manual .....	02095
Brochure 1-2 printed panels .....	02096
Brochure 3 - 4 printed panels .....	02097
Brochure 5 or more printed panels .....	02098

**DESKTOP PUBLISHING/GRAPHICS**

	<b>Classification</b>
Thematic Portfolio - A collection of four or more <b>graphic images</b> following a central theme ( <i>Example: section pages in a yearbook, etc. - Could be created from an "art" program, scanned and/or original art work - Not limited to these examples</i> )	02099

*The following entries should be submitted on standard 8.5 x 11-inch paper in a sleeve protector.*

	<b>Classification</b>
Student original - Graphics - BW	02110
Student original - Graphics - COLOR	02111
Student edited - Graphics - BW (must show original)	02112
Student edited - Graphics - COLOR (must show original)	02113
Computer based multi media Entries with academic themes.	02114
Computer based multi media Entries with technology themes	02115
Computer animation One-minute, subject: any area	02116
Computer animation One-minute, subject: safety	02117
Database Minimum of 25 entries; at least 5 fields. Must show original input data and two sorts	02118
Spreadsheet Minimum of 5 columns and 5 rows - Must have at least 2 calculations	02119
A word-processing document, any subject. (8.5 x 11 inch page size, two-pages double-spaced minimum); No graphics	02120
A word-processing document, any subject (8.5 x 11 inch page size, two-pages double-spaced minimum); With graphics	02121
Document using word-processing, spreadsheet, and database.	02122
Newsletter must include: Letterhead or masthead, graphics and have at least two columns.	02123

**AUDIO / VIDEO SYSTEMS**

*Documentation for video and audio classifications must include description of content or subject matter and a script with technical directions (zoom, pan, dolly, camera angle, etc.)*

<b>CD-R / DVD or Printouts - no VHS or tape format</b>	<b>Classification</b>
Video production - not to exceed 60 seconds	02130
Video production - not to exceed 5 minutes	02131
Audio production - not to exceed 30 seconds	02132
Audio production - not to exceed 60 seconds	02133
CD-R/DVD – not to exceed 60 seconds	02134
CD-R/DVD – not to exceed 5 minutes	02135
Static or working model of a Telecommunication Device or system.	02136

**DIGITAL VIDEO**

<b>CD-R / DVD or Printouts - no VHS or tape format</b>	<b>Classification</b>
Still Capture - Black & White – 1 Frame Capture from Video	02140
Still Capture - Color– 1 Frame Capture from Video	02141
Still Capture - edited paint - (must show original) - Black & White – 1 Frame Capture from video	02142
Still Capture - edited paint - (must show original) - Color– 1 Frame Capture from video	02143
Video Capture – B/W – Multiple Frame Video Clip	02144
Video Capture- Color– Multiple Frame Video Clip	02145
Video Capture – Black & White- (must show original) – Multiple Frame Video Clip	02146
Video capture - Color - (must show original) – Multiple Frame Video Clip	02147
Static or working model of a telecommunication device or system	02148

**ROBOTICS**

**CD-R / DVD or Printouts - no VHS or tape format**

**Classification**

Programming to 25 lines (moves) of program maximum. Minimum documentation must include hard copies of codes and 3 to 6 photographs or video (maximum of 5 minutes) of robot in action, or printouts.	.....	02150
Programming 26 to 50 lines (moves) of program maximum. Minimum documentation must include hard copies of codes and 3 to 6 photographs or video (maximum of 5 minutes) of robot in action or printouts.	.....	02151
Programming 51 to 75 lines (moves) of program maximum. Minimum documentation must include hard copies of codes and 3 to 6 photographs or video (maximum of 5 minutes) of robot in action or printouts.	.....	02152
Programming 76 to 100 lines (moves) of program maximum. Minimum documentation must include hard copies of codes and 3 to 6 photographs or video (maximum of 5 minutes) of robot in action or printouts.	.....	02153

**COMPUTER-NUMERIC-CONTROL**

*The intent of this area to demonstrate the programming and design aspects ONLY, not actual production, which can be entered under the other classifications*

**Team**

**Individual**

CNC Lathe program -must include drawing and CNC code printout - Single Part	.....	02154	02155
CNC Lathe program -must include drawing and CNC code printout - Multiple Parts	.....	02156	02157
CNC Mill program- must include drawing and CNC code printout - Single Part	.....	02158	02159
CNC Mill program- must include drawing and CNC code printout - Multiple Parts	.....	02160	02161
F.M.S. - Multiple machine - multi tasks - single part, hard copy of the programs must accompany entry	.....	02162	02163
CNC Lathe/Mill combination of lathe and mill work, must include part drawing and CNC code printout.	.....	02164	02165

**INTERFACE**

*To control lights, motors, switches, or to receive input from switches, sensors, etc.*

**Non Kit**

**Kit**

**Kit - Team**

Output interface	.....	02166	02167	02168
Input controlled interface	.....	02169	02170	02171

**ENERGY**

*Student produced displays or working models that demonstrate extraction or processing of Energy.*

*Student or representative should be present only if the device or system needs special instructions to be operated, when judged.*

**Classification**

Mechanical	.....	02172
Heat	.....	02173
Electrical	.....	02174
Nuclear	.....	02175
Light	.....	02176
Alternative Energy	.....	02177

**POWER**

*Student produced displays or working models that demonstrate the man-made or natural power sources being used. Student or representative should be present only if the device or system needs special instructions to be operated.*

	<b>Classification</b>
Mechanical .....	02178
Heat .....	02179
Electrical .....	02180
Chemical .....	02181
Nuclear .....	02182
Light .....	02183
Hydraulic .....	02184
Pneumatics .....	02185

**TRANSPORTATION**

*Student produced displays or working models that demonstrate the movement of people or materials. Student or representative should be present only if the device or system needs special instructions to be operated.*

	<b>Classification</b>
Land .....	02186
Sea .....	02187
Air .....	02188
Space .....	02189
Stationary (Conveyers) .....	02190
Transportation System / Industries – land/water/air/space. Static display or model .....	02191

**APPLICATION OF ENERGY, POWER, AND TRANSPORTATION**

<b>Team</b>		
<b>Individual</b>		
Power Systems - Utilization of pneumatic, hydraulic, and/or mechanical power. ....	02192	02193
<i>Static Display or Working Model</i>		
Electrical Energy Devices Non-Kit .....	02194	02195
Electrical Energy Devices Kit .....	02196	02197
Electrical Power Systems - Principles, utilization, and impact. ....	02198	02199
<i>Static Display or Working Model</i>		
Electronic devices that use semiconductors in its operation ( <i>Non-kit</i> ) .....	02200	02201
Electronic devices that use semiconductors in its operation <i>Commercial Kits</i> ) .....	02202	02203
Electronic/Audio Communication Systems - ( <i>Example laser, fiber optics, radio, etc.</i> ) .....	02204	02205
<i>Static Display or Working Model. Student or representative should be present only if the device or system needs special instructions to be operated</i>		
Internal and External Combustion Engines - Research of principles, utilization, and environmental impact. ( <i>Static display or working model. Example: engine cut-a-way</i> ) .....	02206	02207
Transportation Systems/Industries - Land/water/air/space .....	02208	02209
<i>Static Display or Working Model</i>		
Internal and External Combustion Engines - Operation and Maintenance. ....	02210	02211
<i>(Running) 5 h.p. maximum size. Minimum documentation will consist of a work history statement signed by the students instructor verifying the task in the work history was performed and the engine is in proper operating condition. Student must operate engine. Engine must be mounted on a suitable frame or engine stand not exceeding 36" x 36" Note: A fire extinguisher must be supplied and be on hand during live engine testing. P.T.O. end of crank shaft must be bare - nothing attached.</i>		

**WOOD-INDIVIDUAL ENTRY (1 student only)**

CNC code printout must accompany CNC entry

**Wood - Hand or Portable Power Tools**

**Wood - Machine Tools**

**Wood - CNC**

**Wood Turning - Machine Tools**

**Wood Turning - CNC**

Less than .25 board feet	02220	02221	02222	02223	02224
Less than .5 board feet	02225	02226	02227	02228	02229
Less than .75 board feet	02230	02231	02232	02233	02234
Less than 1 board feet	02235	02236	02237	02238	02239
Less than 1.5 board feet	02240	02241	02242	02243	02244
Less than 2 board feet	02245	02246	02247	02248	02249
Less than 3 board feet	02250	02251	02252	02253	02254
Less than 4 board feet	02255	02256	02257	02258	02259
Less than 6 board feet	02260	02261	02262	02263	02264
Less than 8 board feet	02265	02266	02267	02268	02269
Less than 10 board feet	02270	02271	02272	02273	02274
Less than 15 board feet	02275	02276	02277	02278	02279
Less than 20 board feet	02280	02281	02282	02283	02284
Less than 25 board feet	02285	02286	02287	02288	02289
Less than 30 board feet	02290	02291	02292	02293	02294
Less than 35 board feet	02295	02296	02297	02298	02299
Less than 40 board feet	02300	02301	02302	02303	02304
Less than 50 board feet	02305	02306	02307	02308	02309
Less than 60 board feet	02310	02311	02312	02313	02314
More than 60 board feet	02315	02316	02317	02318	02319

**WOOD-TEAM ENTRY**

Definition of team product: Board foot calculated on max of two products to get correct amount of board foot for correct classification

CNC code printout must accompany CNC entry

**Wood - Hand or Portable Power Tools**

**Wood - Machine Tools**

**Wood - CNC**

**Wood Turning - Machine Tools**

**Wood Turning - CNC**

Less than .25 board feet	02330	02331	02332	02333	02334
Less than .5 board feet	02335	02336	02337	02338	02339
Less than .75 board feet	02340	02341	02342	02343	02344
Less than 1 board feet	02345	02346	02347	02348	02349
Less than 1.5 board feet	02350	02351	02352	02353	02354
Less than 2 board feet	02355	02356	02357	02358	02359
Less than 3 board feet	02360	02361	02362	02363	02364
Less than 4 board feet	02365	02366	02367	02368	02369
Less than 6 board feet	02370	02371	02372	02373	02374
Less than 8 board feet	02375	02376	02377	02378	02379
Less than 10 board feet	02380	02381	02382	02383	02384
Less than 15 board feet	02385	02386	02387	02388	02389
Less than 20 board feet	02390	02391	02392	02393	02394
Less than 25 board feet	02395	02396	02397	02398	02399
Less than 30 board feet	02400	02401	02402	02403	02404
Less than 35 board feet	02405	02406	02407	02408	02409
Less than 40 board feet	02410	02411	02412	02413	02414
Less than 50 board feet	02415	02416	02417	02418	02419
Less than 60 board feet	02420	02421	02422	02423	02424
More than 60 board feet	02425	02426	02427	02428	02429

**WOOD-MASS PRODUCTION ENTRY - Individual or Team**

**Definition of mass production project:** Board foot calculated on single product only to get correct amount of board foot for correct classification

This category requires the entry of 2 samples.

**CNC code printout must accompany CNC entry**

**Wood - Hand or Portable Power Tools**

**Wood - Machine Tools**

**Wood - CNC**

**Wood Turning - Machine Tools**

**Wood Turning - CNC**

More than 60 board feet	02450	02451	02452	02453	02454
Less than .25 board feet	02455	02456	02457	02458	02459
Less than .5 board feet	02460	02461	02462	02463	02464
Less than .75 board feet	02465	02466	02467	02468	02469
Less than 1 board feet	02470	02471	02472	02473	02474
Less than 2 board feet	02475	02476	02477	02478	02479
Less than 4 board feet	02480	02481	02482	02483	02484
Less than 6 board feet	02485	02486	02487	02488	02489
Less than 8 board feet	02490	02491	02492	02493	02494
Less than 10 board feet	02495	02496	02497	02498	02499
Less than 15 board feet	02500	02501	02502	02503	02504
Less than 20 board feet	02505	02506	02507	02508	02509

**METAL/ACRYLIC – INDIVIDUAL**

**CNC code printout must accompany CNC entry**

**Metal - Hand or Portable Power Tools**

**Metal - Machine Tools**

**Metal - CNC**

**Sheet Metal**

**Acrylic - Hand or Portable Power Tools**

**Acrylic - Machine Tools**

**Acrylic- CNC**

Less than 0.25 square feet	02570	02571	02572	02573	02574	02575	02576
Less than 0.5 square feet	02577	02578	02579	02580	02581	02582	02583
Less than 0.75 square feet	02584	02585	02586	02587	02588	02589	02590
Less than 1 square foot	02591	02592	02593	02594	02595	02596	02597
Less than 2 square feet	02598	02599	02600	02601	02602	02603	02604
Less than 6 square feet	02605	02606	02607	02608	02609	02610	02611
Less than 10 square feet	02612	02613	02614	02615	02616	02617	02618
Less than 12 square feet	02619	02620	02621	02622	02623	02624	02625
More than 12 square feet	02626	02627	02628	02629	02630	02631	02632
Less than 1 ounce	02633	02634	02635	02636	02637	02638	02639
Less than 2 ounces	02640	02641	02642	02643	02644	02645	02646
Less than 4 ounces	02647	02648	02649	02650	02651	02652	02653
Less than 6 ounces	02654	02655	02656	02657	02658	02659	02660
Less than 8 ounces	02661	02662	02663	02664	02665	02666	02667
Less than 12 ounces	02668	02669	02670	02671	02672	02673	02674
Less than 1 pound	02675	02676	02677	02678	02679	02680	02681
Less than 3 pounds	02682	02683	02684	02685	02686	02687	02688
Less than 5 pounds	02689	02690	02691	02692	02693	02694	02695
Less than 10 pounds	02696	02697	02698	02699	02700	02701	02702
Less than 20 pounds	02703	02704	02705	02706	02707	02708	02709
Less than 30 pounds	02710	02711	02712	02713	02714	02715	02716
Less than 50 pounds	02717	02718	02719	02720	02721	02722	02723
Less than 75 pounds	02724	02725	02726	02727	02728	02729	02730
Less than 100 pounds	02731	02732	02733	02734	02735	02736	02737
More than 100 pounds	02738	02739	02740	02741	02742	02743	02744

**METAL/ACRYLIC – INDIVIDUAL cont.**

<b>Metal - Hand or Portable Power Tools</b>	_____							
<b>Metal - Machine Tools</b>	_____							
<b>Metal - CNC</b>	_____							
<b>Sheet Metal</b>	_____							
<b>Acrylic - Hand or Portable Power Tools</b>	_____							
<b>Acrylic - Machine Tools</b>	_____							
<b>Acrylic- CNC</b>	_____							
Less than 250 pounds	..... 02745	..... 02746	..... 02747	..... 02748	..... 02749	..... 02750	..... 02751	
Less than 400 pounds	..... 02752	..... 02753	..... 02754	..... 02755	..... 02756	..... 02757	..... 02758	
Less than 600 pounds	..... 02759	..... 02760	..... 02761	..... 02762	..... 02763	..... 02764	..... 02765	
Less than 800 pounds	..... 02766	..... 02767	..... 02768	..... 02769	..... 02770	..... 02771	..... 02772	
Less than 1000 pounds	..... 02773	..... 02774	..... 02775	..... 02776	..... 02777	..... 02778	..... 02779	
Less than 1500 pounds	..... 02780	..... 02781	..... 02782	..... 02783	..... 02784	..... 02785	..... 02786	
More than 1500 pounds	..... 02787	..... 02788	..... 02789	..... 02790	..... 02791	..... 02792	..... 02793	

**METAL/ACRYLIC – TEAM**

CNC code printout must accompany CNC entry

**Definition of team product:** Board foot calculated on max of two products to get correct amount of board foot for correct classification

<b>Metal - Hand or Portable Power Tools</b>	_____							
<b>Metal - Machine Tools</b>	_____							
<b>Metal - CNC</b>	_____							
<b>Sheet Metal</b>	_____							
<b>Acrylic - Hand or Portable Power Tools</b>	_____							
<b>Acrylic - Machine Tools</b>	_____							
<b>Acrylic- CNC</b>	_____							
Less than 0.25 square feet	..... 02800	..... 02801	..... 02802	..... 02803	..... 02804	..... 02805	..... 02806	
Less than 0.5 square feet	..... 02807	..... 02808	..... 02809	..... 02810	..... 02811	..... 02812	..... 02813	
Less than 0.75 square feet	..... 02814	..... 02815	..... 02816	..... 02817	..... 02818	..... 02819	..... 02820	
Less than 1 square foot	..... 02821	..... 02822	..... 02823	..... 02824	..... 02825	..... 02826	..... 02827	
Less than 2 square feet	..... 02828	..... 02829	..... 02830	..... 02831	..... 02832	..... 02833	..... 02834	
Less than 4 square feet	..... 02835	..... 02836	..... 02837	..... 02838	..... 02839	..... 02840	..... 02841	
Less than 6 square feet	..... 02842	..... 02843	..... 02844	..... 02845	..... 02846	..... 02847	..... 02848	
Less than 8 square feet	..... 02849	..... 02850	..... 02851	..... 02852	..... 02853	..... 02854	..... 02855	
Less than 10 square feet	..... 02856	..... 02857	..... 02858	..... 02859	..... 02860	..... 02861	..... 02862	
Less than 12 square feet	..... 02863	..... 02864	..... 02865	..... 02866	..... 02867	..... 02868	..... 02869	
More than 12 square feet	..... 02870	..... 02871	..... 02872	..... 02873	..... 02874	..... 02875	..... 02876	
Less than 1 ounce	..... 02877	..... 02878	..... 02879	..... 02880	..... 02881	..... 02882	..... 02883	
Less than 2 ounces	..... 02884	..... 02885	..... 02886	..... 02887	..... 02888	..... 02889	..... 02890	
Less than 4 ounces	..... 02891	..... 02892	..... 02893	..... 02894	..... 02895	..... 02896	..... 02897	
Less than 6 ounces	..... 02898	..... 02899	..... 02900	..... 02901	..... 02902	..... 02903	..... 02904	
Less than 8 ounces	..... 02905	..... 02906	..... 02907	..... 02908	..... 02909	..... 02910	..... 02911	
Less than 12 ounces	..... 02912	..... 02913	..... 02914	..... 02915	..... 02916	..... 02917	..... 02918	
Less than 1 pound	..... 02919	..... 02920	..... 02921	..... 02922	..... 02923	..... 02924	..... 02925	
Less than 3 pounds	..... 02926	..... 02927	..... 02928	..... 02929	..... 02930	..... 02931	..... 02932	
Less than 5 pounds	..... 02933	..... 02934	..... 02935	..... 02936	..... 02937	..... 02938	..... 02939	
Less than 15 pounds	..... 02940	..... 02941	..... 02942	..... 02943	..... 02944	..... 02945	..... 02946	
Less than 25 pounds	..... 02947	..... 02948	..... 02949	..... 02950	..... 02951	..... 02952	..... 02953	
Less than 50 pounds	..... 02954	..... 02955	..... 02956	..... 02957	..... 02958	..... 02959	..... 02960	
Less than 75 pounds	..... 02961	..... 02962	..... 02963	..... 02964	..... 02965	..... 02966	..... 02967	
Less than 100 pounds	..... 02968	..... 02969	..... 02970	..... 02971	..... 02972	..... 02973	..... 02974	
Less than 200 pounds	..... 02975	..... 02976	..... 02977	..... 02978	..... 02979	..... 02980	..... 02981	
Less than 400 pounds	..... 02982	..... 02983	..... 02984	..... 02985	..... 02986	..... 02987	..... 02988	
Less than 600 pounds	..... 02989	..... 02990	..... 02991	..... 02992	..... 02993	..... 02994	..... 02995	
Less than 800 pounds	..... 02996	..... 02997	..... 02998	..... 02999	..... 03000	..... 03001	..... 03002	
Less than 1000 pounds	..... 03003	..... 03004	..... 03005	..... 03006	..... 03007	..... 03008	..... 03009	
Less than 1500 pounds	..... 03010	..... 03011	..... 03012	..... 03013	..... 03014	..... 03015	..... 03016	
More than 1500 pounds	..... 03017	..... 03018	..... 03019	..... 03020	..... 03021	..... 03022	..... 03023	

**MANUFACTURING - TURNING – KIT**

<b>Metal</b>	_____	_____	_____	_____	_____
<b>Wood</b>	_____	_____	_____	_____	_____
<b>Acrylics</b>	_____	_____	_____	_____	_____
<b>Bone</b>	_____	_____	_____	_____	_____
<b>Other</b>	_____	_____	_____	_____	_____
Pen or Pencil-CNC	03100	03101	03102	03103	03104
Pen or Pencil - Manual	03105	03106	03107	03108	03109
Pen/Pencil Set-CNC	03110	03111	03112	03113	03114
Pen/Pencil-Set-Manual	03115	03116	03117	03118	03119
Letter Opener-CNC	03120	03121	03122	03123	03124
Letter Opener-Manual	03125	03126	03127	03128	03129
Magnifier-CNC	03130	03131	03132	03133	03134
Magnifier-Manual	03135	03136	03137	03138	03139
Pen light-CNC	03140	03141	03142	03143	03144
Pen light-Manual	03145	03146	03147	03148	03149
Key Chain-CNC	03150	03151	03152	03153	03154
Key Chain-Manual	03155	03156	03157	03158	03159
Other-CNC	03160	03161	03162	03163	03164
Other-Manual	03165	03166	03167	03168	03169

**MANUFACTURING - PLASTICS & RESINS**

	<b>Classification</b>
PVC fabrication - 10 pounds or less	03200
PVC fabrication - more than 10 pounds	03201
Injection molding (all)	03202
Vacuum forming (all)	03203
Casting (all)	03204
Reinforced resins (all)	03205
Non acrylic	03206
Composite	03207

**MANUFACTURING - OTHER MATERIALS**

<b>Mass Production</b>	_____	_____	_____	_____
<b>Team - Single Product</b>	_____	_____	_____	_____
<b>Individual</b>	_____	_____	_____	_____
Fabric	03210	03211	03212	
Paper	03213	03214	03215	
Glass - Flat (Ex: plate)	03216	03217	03218	
Glass - Glassware (Ex: mugs)	03219	03220	03221	
Leather	03222	03223	03224	
Combination of any of the above	03225	03226	03227	

**CASTING MATERIALS**

<b>Commercial mold-Rough casting</b>	_____	_____	_____	_____
<b>Commercial Mold-Finished Casting</b>	_____	_____	_____	_____
<b>Sand Casting-Rough Casting</b>	_____	_____	_____	_____
<b>Sand Casting-Finished Casting</b>	_____	_____	_____	_____
1 oz	03240	03241	03242	03243
3 oz	03244	03245	03246	03247
6 oz	03248	03249	03250	03251
8 oz	03252	03253	03254	03255
12 oz	03256	03257	03258	03259
16 oz	03260	03261	03262	03263
16 oz plus	03264	03265	03266	03267
Pattern Match Plate	03268	03269	03270	03271
Disposable	03272	03273	03274	03275

**PRECIOUS METALS** (Note: See Rule 9 pg. 14)

**Student Made Mold**

**Commercial Mold**

Fabrications with stones	03280	03281
Fabrications without stones	03282	03283
Lost wax casting - Purchased Pattern with stones	03284	03285
Lost wax casting - Purchased Pattern without stones	03286	03287
Casting using organic materials	03288	03289

**RECYCLED MATERIALS**

*These products must be constructed from 50% recycled materials. Products must be classified by the primary construction material*

**Wood**

**Metals**

**Plastic**

**Glass**

**Other**

**Combination**

.5 lb.	03300	03301	03302	03303	03304	03305
1.0 lb.	03306	03307	03308	03309	03310	03311
1.5 lb.	03312	03313	03314	03315	03316	03317
2.0 lb.	03318	03319	03320	03321	03322	03323
3.0 lb.	03324	03325	03326	03327	03328	03329
5.0 lb.	03330	03331	03332	03333	03334	03335
7.0 lb.	03336	03337	03338	03339	03340	03341
10.0lb.	03342	03343	03344	03345	03346	03347
10.0 lb. Plus	03348	03349	03350	03351	03352	03353

**COMBINATION MATERIALS**

**Classification**

A combination of materials, tools and processes to produce a product	03360
Static display or working model that demonstrates the use of a combination of energy, power and/or transportation. Student or representative should be present only if the device or system needs special instructions to be operated.	03361
Static display or working model that incorporates the uses of Communication, Energy/Power/Transportation, Manufacturing, Construction and/or Biotech Technology. Evidence documenting the use of the above technologies must accompany the completed product.	03362

**CONSTRUCTION TECHNOLOGY - Individual/Team**

*Construction is defined as the technique, skills, and standards used in the construction of a shelter, containment, support, or complex. Students will be demonstrating the application of their knowledge of construction when they enter their project in competition.*

**PAST**

*All entries must include historical documentation of the feature that the construction represents.*

**Team**

**Individual**

Early buildings (houses, churches, theaters, etc.)	03400	03401
Early roads, bridges, or waterways	03402	03403
A display depicting construction technology or material used in the past	03404	03405

**PRESENT**

*(NOTE: When entering models, you must have available original drawing or copy of plans used.)*

<b>Team</b>	_____	_____	_____
<b>Individual</b>	_____	_____	_____
Model of a constructed residential shelter	.....	03408	03409
A partial model of a constructed residential shelter which shows detail. Max. size 4 feet by 4 feet by 8 ft. high	.....	03410	03411
A partial structure to show construction techniques. (Example: wall section, plumbing, electrical application, etc.) Max. size 4 feet by 4 feet by 8 ft. high	.....	03412	03413

**STRUCTURE USING CONSTRUCTION PROCESSES - Without Utilities**

<b>Team</b>	_____	_____	_____
<b>Individual</b>	_____	_____	_____
Less than 1 sq. ft. of floor space	.....	03420	03421
Less than 5 sq. ft. of floor space	.....	03422	03423
Less than 20 sq. ft. of floor space	.....	03424	03425
Less than 40 sq. ft. of floor space	.....	03426	03427
Item over 40 sq. ft. <b>MUST USE VIDEO OR PHOTOGRAPHS ONLY.</b>	.....	03428	03429
<b>STRUCTURES ARE NOT TO BE DISPLAYED</b>			
Residential plan (drawing - maximum of four 12 x 18 inch pages) May include plot plan, floor plan, elevation, and/or door/window schedule— <b>HAND DRAWN</b>	.....	03430	03431
A display depicting the technologies or materials that are currently used in construction	.....	03432	03433
Model Commercial Buildings (Example: supermarkets, libraries, schools, churches, etc.)	.....	03434	03435
Model Industrial Buildings (Example: refineries, waste recycling, factories, etc.)	.....	03436	03437
Model of a constructed containment	.....	03438	03439
Structural engineering research, design, and evaluation of civil construction projects. (Example: highways, bridges, airports, dams, etc.) Static display or model	.....	03440	03441
Model of a constructed support	.....	03442	03443
Remodeling techniques and procedures. Students are to use video documentation to show various steps of a remodeling job from beginning to completion. Plans showing what changes are to be completed must accompany video	.....	03444	03445
Model of an Aerospace structure	.....	03446	03447

**FUTURE**

<b>Team</b>	_____	_____	_____
<b>Individual</b>	_____	_____	_____
Master plan development (must include residential, commercial, industrial, and civil construction projects). Example: <i>Sim City</i> computer program. Display area not to exceed 36 x 36 inches	.....	03460	03461
Model of a mass-transit system	.....	03462	03463
Other	.....	03464	03465

**DIMENSIONAL MATERIALS**

*The following classifications are set aside for outdoor/recreational products constructed from dimensional materials such as 2 x4, 2x6, etc.*

<b>Team</b>	_____	_____	_____
<b>Individual</b>	_____	_____	_____
Less than 5 b.f.	.....	03466	03467
5 to 10 b.f.	.....	03468	03469
10 to 20 b.f.	.....	03470	03471
20 to 30 b.f.	.....	03472	03473
30 to 40 b.f.	.....	03474	03475
40 to 50 b.f.	.....	03476	03477
More than 50 b.f.	.....	03478	03479

**RESTORATIONS - Team/Individual**

*Restoration: Projects that have been restored to the original condition. Items were originally commercially manufactured. A work history must accompany the entry stating the condition in which the entry was found, parts not reconditioned by the student and other pertinent information as per Rule 9. Engines and motors are not included in this classification.*

Team		
Individual		
Restoration - furniture	03480	03481
Restoration - mechanical/machine devices	03482	03483
Restoration - electrical/appliances	03484	03485
Restoration - vehicles	03486	03487

**COMMERCIAL MODEL KITS**

*Theory and Processes as related to Technology Education  
Must include manufacturer's assembly instructions.*

	Classification
Construction.....	03489
Energy.....	03490
Power.....	03491
Electricity/Electronics.....	03492
Land Transportation.....	03493
Air Transportation.....	03494
Space Transportation.....	03495
Water Transportation.....	03496

**INTEGRATED TECHNOLOGIES PRODUCT PRODUCTION-INDIVIDUAL**

	Classification
Develop and produce a product that incorporates the uses of Communication, Energy/Power/Transportation, Manufacturing, Construction and/or Biotech Technology. Evidence documenting the use of the above technologies must accompany the completed product.	03497

**BIOTECHNOLOGY**

*Students must show evidence of the use of the universal system model. Minimum documentation must contain the following; sketches, description of problem, process and outcomes.*

	Classification
Design biotechnology tools to meet human, physical, and biological needs.	03498
Interdisciplinary studies in biotechnology research	03499



**TEXAS**



**HIGH  
SCHOOL  
SECTION**

**CATEGORY BASED PROJECTS**



**MANUFACTURING - WOODS**

**Mass Production Entry**

*(2 items must be displayed, item size is calculated on one item only)*

**Team Entry**

**Individual Entry**

Wood entries not exceeding 10 board feet	.....	05063	05064	05065
Wood entries not exceeding 15 board feet	.....	05066	05067	05068
Wood entries not exceeding 20 board feet	.....	05069	05070	05071
Wood entries not exceeding 25 board feet	.....	05072	05073	05074
Wood entries not exceeding 30 board feet	.....	05075	05076	05077
Wood entries not exceeding 35 board feet	.....	05078	05079	05080
Wood entries not exceeding 40 board feet	.....	05081	05082	05083
Wood entries not exceeding 50 board feet	.....	05084	05085	05086
Wood entries not exceeding 60 board feet	.....	05087	05088	05089
Wood entries not exceeding 70 board feet	.....	05090	05091	05092
Wood entries not exceeding 80 board feet	.....	05093	05094	05095
Wood entries not exceeding 90 board feet	.....	05096	05097	05098
Wood entries not exceeding 100 board feet	.....	05099	05100	05101
Wood entries not exceeding 120 board feet	.....	05102	05103	05104
Wood entries not exceeding 140 board feet	.....	05105	05106	05107
Wood entries not exceeding 150 board feet	.....	05108	05109	05110
Wood entries exceeding 150 board feet	.....	05111	05112	05113

**DIMENSIONAL MATERIALS**

*The following classifications are set aside for outdoor/recreational products constructed from dimensional materials such as 2 x4, 2x6, etc.*

**Team**

**Individual**

Less than 20 b.f.	.....	05126	n/a
20 to 30 b.f.	.....	05127	05128
30 to 40 b.f.	.....	05129	05130
40 to 50 b.f.	.....	05131	05132
More than 50 b.f.	.....	05133	05134

## METALS CATEGORY

*Items in this category involve student created projects in which students used metal working tools, methods, and techniques to create projects*

*Any projects in which CNC mills, lathers, computer controlled lasers, etc... were used to produce more than 50% of the major components **SHOULD NOT** be entered in this category.*

*Judging criteria for production will be based on the following areas: degree of difficulty, appearance, finish, and craftsmanship. Material used is calculated as item as displayed. **Large entries** may have to be displayed outside. Schools wishing to enter*

**REQUIRED MINIMUM DOCUMENTATION:**

**Level 1** - Single Page containing a Bill of Materials and a single descriptive paragraph explaining the design, development and production of project.

**Level 2** - Cover - centered on the page in consecutive lines, the student(s)' name(s), the product name, and school name.  
           1 page max - Description of product, instructions for its use, design process, production process, etc...  
           3 pages max - sketches, working drawings, pictures of production process, etc... (minimum of 1 page)  
           Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

**MANUFACTURING - METALS**

**Team - Mass Production**

**Team - Single Product**

**Individual**

Entries not exceeding 5 lbs. - no sheet metal	.....	05150	05151	05152
Entries not exceeding 10 lbs. - no sheet metal	.....	05153	05154	05155
Entries not exceeding 20 lbs. - no sheet metal	.....	05156	05157	05158
Entries not exceeding 30 lbs. - no sheet metal	.....	05159	05160	05161
Entries not exceeding 50 lbs. - no sheet metal	.....	05162	05163	05164
Entries exceeding 50 lbs. - no sheet metal	.....	05165	05166	05167
<b>(Entries below need not include sheet metal)</b>				
Entries not exceeding 10 lbs. - combined sheet & wrought metal Major fabrication is wrought	.....	05168	05169	05170
Entries not exceeding 20 lbs. - combined sheet & wrought metal Major fabrication is wrought	.....	05171	05172	05173
Entries not exceeding 50 lbs. - combined sheet & wrought metal Major fabrication is wrought	.....	05174	05175	05176
Entries not exceeding 100 lbs. - combined sheet & wrought metal Major fabrication is wrought	.....	05177	05178	05179
Entries not exceeding 150 lbs. - combined sheet & wrought metal Major fabrication is wrought	.....	05180	05181	05182
Entries not exceeding 200 lbs. - combined sheet & wrought metal Major fabrication is wrought	.....	05183	05184	05185
Entries not exceeding 250 lbs. - combined sheet & wrought metal Major fabrication is wrought	.....	05186	05187	05188
Entries not exceeding 300 lbs. - combined sheet & wrought metal Major fabrication is wrought	.....	05189	05190	05191

**MANUFACTURING - METALS**

**Team - Mass Production**

**Team - Single Product**

**Individual**

Entries not exceeding 350 lbs. - combined sheet & wrought metal	.....	05192	05193	05194
Major fabrication is wrought				
Entries not exceeding 400 lbs. - combined sheet & wrought metal	.....	05195	05196	05197
Major fabrication is wrought				
Entries not exceeding 500 lbs. - combined sheet & wrought metal	.....	05198	05199	05200
Major fabrication is wrought				
Entries not exceeding 800 lbs. - combined sheet & wrought metal	.....	05201	05202	05203
Major fabrication is wrought				
Entries not exceeding 1000 lbs. - combined sheet & wrought metal	.....	05204	05205	05206
Major fabrication is wrought				
Entries not exceeding 1500 lbs. - combined sheet & wrought metal	.....	05207	05208	05209
Major fabrication is wrought				
Entries not exceeding 2000 lbs. - combined sheet & wrought metal	.....	05210	05211	05212
Major fabrication is wrought				
Entries not exceeding 2500 lbs. - combined sheet & wrought metal	.....	05213	05214	05215
Major fabrication is wrought				
Entries not exceeding 3000 lbs. - combined sheet & wrought metal	.....	05216	05217	05218
Major fabrication is wrought				
Entries exceeding 3000 lbs. - combined sheet & wrought metal	.....	05219	05220	05221
Major fabrication is wrought				
Metal Sculpturing - Ferrous or nonferrous	.....	05222	05223	05224

**SHEET METAL**

*Entries in which the major material is sheet metal. (.125 inches maximum thickness)*

*Classifications are for the total combined sheet metal area contained in the entry.*

**Mass Production**

**Team - Single Product**

**Individual**

Scroll work (fastened or joined)	.....	05234	05235	05236
Entries not exceeding 2 sq. ft	.....	05237	05238	05239
Entries not exceeding 8 sq. ft	.....	05240	05241	05242
Entries not exceeding 15 sq. ft	.....	05243	05244	05245
Entries exceeding 15 sq. ft.	.....	05246	05247	05248

**FORGING**

*Entries made from medium or high carbon tool steel. Entries may have wood, plastic or other material as part of the product.*

**Mass Production Entry**

***(2 items must be displayed, item size is calculated on one item only)***

**Team Entry**

**Individual Entry**

Scroll work (fastened or joined)	.....	05261	05262	05263
Entries not exceeding 2 sq. ft.	.....	05264	05265	05266
Entries not exceeding 8 sq. ft.	.....	05267	05268	05269
Entries not exceeding 15 sq. ft.	.....	05270	05271	05272
Entries exceeding 15 sq. ft.	.....	05273	05274	05275
1 piece forged and heat-treated	.....	05276	05277	05278
Forged and heat treated sets	.....	05279	05280	05281

**FOUNDRY**

**Mass Production Entry**

*(2 items must be displayed, item size is calculated on one item only)*

**Team Entry**

**Individual Entry**

Rough castings	05294	05295	05296
Finished foundry products - not more than 4 cast parts	05297	05298	05299
Finished foundry products - more than 4 cast parts	05300	05301	05302
Pattern and match plates- rough casting must accompany entry	05303	05304	05305
Disposable – 1 time use patterns, lost wax, Styrofoam, etc.			
2 oz. or less	05306	05307	05308
8 oz. or less	05309	05310	05311
1 lb. or less	05312	05313	05314
More than 1 lb.	05315	05316	05317

**MACHINE METAL**

*guides as to the degree and kind of finish to use. No plating except in the designated classifications. Entries consisting of more than 1 part must be assembled if possible. All non-student made parts should be identified as per rule 16. Standard hardware items, such as screws, bolts, washers, keys, pins, etc. that are not student made will not count as parts but must be identified.*

**Mass Production Entry**

*(2 items must be displayed, item size is calculated on one item only)*

**Team Entry**

**Individual Entry**

Working Production machines or devices	05330	05331	05332
Entries containing not more than 1 student made part	05333	05334	05335
Entries containing not more than 3 student made parts	05336	05337	05338
Entries containing 4 or more student made parts	05339	05340	05341
Student plated entries	05342	05343	05344
Entries made from commercial kits or castings	05345	05346	05347

**MATERIALS CATEGORY**

*Items in this category involve student created projects in which students used traditional and modern tools, methods, and techniques to create projects from various materials not listed under other categories.*

*Any projects in which CNC mills, lathers, computer controlled lasers, etc... were used to produce more than 50% of the major components **SHOULD NOT** be entered in this category.*

*Judging criteria for production will be based on the following areas: degree of difficulty, appearance, finish, and craftsmanship. NOTE: Board footage is calculated as it is displayed.*

**REQUIRED MINIMUM DOCUMENTATION:**

**Level 1** - Single Page containing a Bill of Materials and a single descriptive paragraph explaining the design, development and production of project.

**Level 2** - Cover centered on the page in consecutive lines, the student(s)' name(s), the product name, and school name.

1 page max - Description of product, instructions for its use, design process, production process, etc...

3 pages max - sketches, working drawings, pictures of production process, etc... (minimum of 1 page)

Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

**MANUFACTURING - MATERIALS****Mass Production****Team - Single Product****Individual**

Pen/Pencil Set -Manual	05360	05361	05362
Pen or Pencil- Manual	05363	05364	05365
Manual Turnings not exceeding 2 ounces	05366	05367	05368
Manual Turnings not exceeding 4 ounces	05369	05370	05371
Manual Turnings not exceeding 8 ounces	05372	05373	05374
Manual Turnings not exceeding 1 lbs.	05375	05376	05377
Manual Turnings exceeding 1 lb.	05378	05379	05380
Machine turning less than 8 oz (NON CNC)	05381	05382	05383
Machine turning less than 16 oz (NON CNC)	05384	05385	05386
Machine turning more than 16 oz (NON CNC)	05387	05388	05389
Entries not exceeding 1 ounce	05390	05391	05392
Entries not exceeding 2 ounces	05393	05394	05395
Entries not exceeding 5 ounces	05396	05397	05398
Entries not exceeding 10 ounces	05399	05400	05401
Entries not exceeding 15 ounces	05402	05403	05404
Entries not exceeding 2 pounds	05405	05406	05407
Entries not exceeding 5 pounds	05408	05409	05410
Entries not exceeding 10 pounds	05411	05412	05413
Entries not exceeding 20 pounds	05414	05415	05416
Entries exceeding 40 pounds	05417	05418	05419
Welding (non-metal)	05420	05421	05422
Casting (non metal) not exceeding 2 oz.	05423	05424	05425
Casting (non metal) not exceeding 5 oz.	05426	05427	05428
Casting (non metal) not exceeding 10 oz.	05429	05430	05431
Casting (non metal) not exceeding 16 oz.	05432	05433	05434
Casting (non metal) not exceeding 2 lbs.	05435	05436	05437
Casting (non metal) not exceeding 4 lbs.	05438	05439	05440
Casting (non metal) exceeding 4 lbs.	05441	05442	05443

**RESTORATION**

*Items that were originally commercially manufactured and have been restored to their original state. A work history must accompany the entry showing the condition of the item before the restoration. All parts not reconditioned by the student must be identified.*

**Team****Individual**

Restoration - furniture	05456	05457	
Restoration - mechanical/machine devices	05458	05459	
Restoration - electrical/appliances	05460	05461	
Restoration - vehicles	05462	05463	

**RECYCLED MATERIALS**

*Items made out of a minimum of 50% recycled materials*

A work history must accompany the entry showing the recycled item before construction

**Mass Production****Team Single Product****Individual**

Recycled - Woods	05468	05469	05470
Recycled - Metals	05471	05472	05473
Recycled - Electrical/electronics	05474	05475	05476
Recycled - Other	05477	05478	05479
Recycled - Combination of two or more recycled materials	05480	05481	05482

## CNC/CAM and PROGRAMMING CATEGORY

*Items in this category involve student created projects in which students used Computer Numerical Control or Computer Aided Manufacturing devices to create projects.*

*Any projects in which CNC mills, lathes, computer controlled lasers, etc... were **NOT** used to produce **ALL** major components **SHOULD NOT** be entered in this category.*

*Judging criteria for production will be based on the following areas: degree of difficulty, appearance, finish, and craftsmanship.*

**REQUIRED MINIMUM DOCUMENTATION:**

**Level 1** - Single Page containing a Bill of Materials and a single descriptive paragraph explaining the design, development and production of project.

**Level 2** - Cover - centered on the page in consecutive lines, the student(s)' name(s), the product name, and school name.  
 2 pages max - Description of product, instructions for its use, design process, production process, software/hardware used, etc... (minimum of 1 page in this section)  
 3 pages max - sketches, working drawings, pictures of production process, etc... (minimum of 1 page in this section)  
 Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

**CNC/CAM - WOOD**

**Mass Production Entry**

*(2 items must be displayed)*

**Team Entry**

**Individual Entry**


**CNC/CAM - METAL****Mass Production Entry***(2 items must be displayed)***Team Entry****Individual Entry**

CADD/CAM / CNC Lathe Single Part (made from kit)	05574	05575	05576
CADD/CAM/ CNC Lathe Multiple Parts (made from kit)	05577	05578	05579
CNC/CADD/CAM - Mill / Router - single part	05580	05581	05582
CNC/CADD/CAM - Mill / Router - 2 to 5 parts	05583	05584	05585
CNC/CADD/CAM - Mill / Router - 6 to 10 parts	05586	05587	05588
CNC/CADD/CAM - Mill / Router - 11 or more parts	05589	05590	05591
Computer Controlled Engraving - Single Material - 1 part	05592	05593	05594
Computer Controlled Engraving - Single Material - More than 1 part	05595	05596	05597
Computer Controlled Engraving - Multiple Material - More than 1 part	05598	05599	05600
CNC/CADD/CAM - Plasma Cutter - Single part	05601	05602	05603
CNC/CADD/CAM - Plasma Cutter - 2 to 5 parts	05604	05605	05606
CNC/CADD/CAM - Plasma Cutter - 6 to 10 parts	05607	05608	05609
CNC/CADD/CAM - Plasma Cutter - 11 or more parts	05610	05611	05612
F.M.S. – Multiple machine – multi tasks – single part, hard copy of the programs must accompany entry	05613	05614	05615
F.M.S. – Multiple machine – multi tasks – multiple parts, hard copy of the programs must accompany entry	05616	05617	05618
Robotic Welding	05619	05620	05621
FMS Multiple machine Multi-task-video <i>Demonstration - 5 minute Maximum...</i>	05622	05623	NA
CIM Multiple machine Multiple task-video <i>Demonstration - 5 minute Maximum...</i>	05624	05625	NA

**CNC/CAM - OTHER MATERIALS****Mass Production Entry***(2 items must be displayed)***Team Entry****Individual Entry**

CNC/CADD/CAM student generated - Lathe single part	05634	05635	05636
CNC/CADD/CAM student generated - Lathe - 2 to 5 parts	05637	05638	05639
CNC/CADD/CAM student generated - Lathe - 6 to 10 parts	05640	05641	05642
CNC/CADD/CAM student generated - Lathe - 11 or more parts	05643	05644	05645
CNC/CADD/CAM Student generated –Lathe single part – KIT	05646	05647	05648
CNC/CADD/CAM Student generated –Lathe More than one part – KIT	05649	05650	05651
CADD/CAM / CNC Lathe Single Part (made from kit)	05652	05653	05654
CADD/CAM/ CNC Lathe Multiple Parts (made from kit)	05655	05656	05657
CNC/CADD/CAM - Mill / Router - single part	05658	05659	05660
CNC/CADD/CAM - Mill / Router - 2 to 5 parts	05661	05662	05663
CNC/CADD/CAM - Mill / Router - 6 to 10 parts	05664	05665	05666
CNC/CADD/CAM - Mill / Router - 11 or more parts	05667	05668	05669
Computer Controlled Engraving - Single Material - 1 part	05670	05671	05672
Computer Controlled Engraving - Single Material - More than 1 part	05673	05674	05675
Computer Controlled Engraving - Multiple Material - More than 1 part	05676	05677	05678
CNC/CADD/CAM - 3D Printer/Rapid Prototype - single part	05679	05680	05681
CNC/CADD/CAM - 3D Printer/Rapid Prototype - 2 to 5 parts	05682	05683	05684
CNC/CADD/CAM - 3D Printer/Rapid Prototype - 6 to 10 parts	05685	05686	05687
CNC/CADD/CAM - 3D Printer/Rapid Prototype- 11 or more parts	05688	05689	05690
CADD/CAM/CNC Embroidery Single Design	05691	05692	NA

**CNC/CAM - OTHER MATERIALS****Team Entry****Individual Entry**

CADD/CAM/CNC Embroidery Single Design	05691	05692
CADD/CAM/CNC Embroidery Multiple Design	05693	05694
CADD/CAM/CNC Vinyl Cutter - Single Color - less than 3.5 x 18"	05695	05696
CADD/CAM/CNC Vinyl Cutter - Multi Color - less than 3.5 x 18"	05697	05698
CADD/CAM/CNC Vinyl Cutter - Single Color - 8 x 10"	05699	05700
CADD/CAM/CNC Vinyl Cutter - Multi Color - 8 x 10"	05701	05702
CADD/CAM/CNC Vinyl Cutter - Single Color - 8 x 10" - Original image design must include documentation of design effort	05703	05704
CADD/CAM/CNC Vinyl Cutter - Multi Color - 8 x 10" - Original image design must include documentation of design effort	05705	05706
CADD/CAM/CNC Vinyl Cutter - Single Color - Large Format	05707	05708
CADD/CAM/CNC Vinyl Cutter - Multi Color - Large format	05709	05710

**COMPUTER CONTROL****Team Entry****Individual Entry**

Computer Control – Control motor(s), light(s), switch(es), solenoid(s), etc. - Kit	05718	05719
Computer Control – Control motor(s), light(s), switch(es), solenoid(s), etc. – Student made	05720	05721
	05722	05723
Robotics Control Program – use CD-R / DVD format	05724	05725

**COMMUNICATION/PRINT MEDIA CATEGORY**

*Items in this category involve student created projects in which students used traditional and modern methods, equipment, and processes to create Communication projects.*

**SCREEN PRINTS:** Entries must include 3 copies in order to judge consistent registration and quality, along with content, composition and overall visual effect. Maximum size not to exceed 11 x 17 inches.

**GI-24 – Binding Terms**

Bound – Example, spiral bound, glued and tape, GBC Machine  
Saddle Stitch – Stapled in the fold.

**Entries that depict sex, drugs, tobacco, gangs, violence, or cults will not be permitted. This does not preclude posters, "etc." that may bring awareness of these and other issues as deemed appropriate by TEA, State Board of Education, and local school policy**

**REQUIRED MINIMUM DOCUMENTATION:**

**Level 1** - Single Page containing a single descriptive paragraph explaining the design, development and production of project.

**Level 2** - Cover - centered on the page in consecutive lines, the student(s)' name(s), the product name, and school name.

2 pages max - Description of product, design process, description of software/hardware used, production process, self-evaluation, etc... (minimum of 1 page in this section)

Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

**DESKTOP PUBLISHING**

Team			
Individual			
Business Cards/Name Tags, Invitations etc.	06000	n/a	
Certificate	06001	n/a	
Flyer, newspaper ad, etc. - Single Sheet	06002	n/a	
Form - Single Sheet	06003	n/a	
Calendar – Single Sheet	06004	n/a	
Calendar – Multiple Sheet	06005	06006	
Resume - One page, front only	06007	n/a	
Form Single Sheet	06008	n/a	
CD Packaging – must include CD case and labeling	06009	n/a	
Brochure 2-4 printed panels (Maximum paper size is 8.5 x 11)	06010	n/a	
Brochure 5 or more printed panels (Maximum paper size is 8.5 x 11)	06011	06012	
<i>Brochures may include: invitations, greeting cards, menus, programs, travel, marketing, information, etc.</i>			
Thematic Portfolio - A collection of four or more graphic images following a central theme (Example: section pages in a yearbook, etc. - Could be created from an "art" program, scanned and/or original art work - Not limited to these examples)	06013	06014	
Desktop publishing - thematic portfolio display to promote a Business (Might include stationary, business cards, fliers, business forms, etc.)	06015	06016	
Booklet - Multiple page document (Instructional manual, memory book, course description, student handbook, etc.) Must be bound on edge	06017	06018	
Pamphlet - Multiple page document – maximum size 8.5 x 11 Folded in half and saddle stitched (stapled) Refer to GI-24)	06020	06021	
Newsletter - Must Include Flag (heading with title, date, etc.) Single Sheet - Front Only - Maximum sheet size 8.5 x 11 inches	06022	n/a	
Newsletter - Must Include Flag Single Sheet Front and Back Maximum sheet size 8.5 x 11 inches	06024	n/a	
Newspaper - Must Include Flag – Multiple sheets - Maximum Sheet Size 11 x 17 inches (could be four 8.5 x 11 inches taped together to form camera-ready flats)	06026	06027	
Magazine Layout Student produced magazine of 5-10 pages, must have a common theme. For example fashion, cars, sports, ect. Must be submitted on 8.5x11 pages, bound for sale. All photos and stories must be original work of the student.	06028	06029	
Product Label – Ex. Soup label	06030	06031	
Product Packaging –Ex. Cereal box	06032	06033	
Database	06034	06035	
Spreadsheet	06036	06037	
Computer Image Transfer- one color (fabric, mug, etc...)	06038	06039	
Computer Image Transfer-multi color (fabric, mug, etc...)	06040	06041	
Other desktop communication not mentioned above	06042	06043	

**PRINT COMMUNICATION**

*Print communication entries must include a minimum of three copies in order to judge consistent registration and quality along with content, composition and overall effect. Maximum finished size is 11 x 17 inches.*

Team			
Individual			
Screen print communication - one color on paper, fabric, or container Should advertise a product, place or upcoming event	06046	06047	
Screen print communication - multicolor on paper, fabric, or container Should advertise a product, place or upcoming event	06048	06049	

**TECHNICAL REPORT**

**Team**

**Individual**

Database – Create a form to collect data, enter the data, show evidence of sorting and use of the query/match functions – print appropriate reports (example bill of materials, club reports, etc.) Limit print outs to 4 sheets with appropriate headers and page numbers	06050	n/a
Spreadsheet – Create a budget for a computer project or enterprise – show use of labels for each row and column, headings, titles, appropriate formulas graph data, etc. – a print out showing formulas used must be included Limit print outs to 4 sheets with appropriate headers and page numbers	06052	n/a

**TECHNICAL REPORT - Specific fields**

Using Word Processing software create a technical report – include a cover sheet, body of report, and bibliography. Citations and bibliography can be in either MLA or APA format.

**Team**

**Individual**

Aerospace related	06056	06057
Architectural related	06058	06059
Biotech - emerging technology	06060	06061
Communication Technology - Engineering	06062	06063
Communication Technology - Scientific	06064	06065
Computer Aided Design	06066	06067
Computer Aided Manufacturing	06068	06069
Computer Digital Transfer Technology (example: Digital Music)	06070	06071
Energy Technology - Engineering	06072	06073
Energy Technology - Scientific	06074	06075
Alternate Energy	06076	06077
Engineering - Applied research. For example: improve an existing machine or material	06078	06079
Illustrate the difference 2 or more types of structures	06080	06081
Machine Design	06082	06083
Meteorology	06084	06085
Production Technology - Engineering	06086	06087
Robotics - emerging technology	06088	06089
Satellite communication	06090	06091
Science - Research using given scientific parameters and formulas to obtain conclusions. For example: determining the speed of an object based on time and distance.	06092	06093
Statistical processing	06094	06095
Web Page Design	06096	06097
Technical Report – Create a report integrating two or more of the processes Word processing, database and/or spreadsheet	06098	n/a
A combination of any of the above Technologies - Engineering	06100	06101
A combination of any of the above Technologies - Science	06102	06103
Other field or area not listed	06104	06105

## MULTIMEDIA & ANIMATION CATEGORY

*Items in this category involve student created projects in which students used Multimedia & Animation Technology to create 2D and 3D projects. Multimedia includes video, audio, graphics, cd, dvd, and animation.*

**MULTIMEDIA:** Entries must include two or more communications methods. A story board and brief description of the two or more communications methods used must be included.

**CD/DVD-R** must be read only, must be read by current version of Internet Explorer or .flc, .avi, and .mov formats. CD's must be in RESEALABLE clear plastic sleeves and CD cases must not be sealed shut. CD-R / DVD format is required and must be Autoplay.

**Entries that depict sex, drugs, tobacco, gangs, violence, or cults will not be permitted. This does not preclude posters, "etc." that may bring awareness of these and other issues as deemed appropriate by TEA, State Board of Education, and local school policy.**

**REQUIRED MINIMUM DOCUMENTATION:**

**Level 1** - Single Page containing a single descriptive paragraph explaining the design, development and production of project.

**Level 2** - Cover - centered on the page in consecutive lines, the student(s)' name(s), the product name, and school name.  
 2 pages max - Description of product, design process, description of software/hardware used, production process, self-evaluation, etc... (minimum of 1 page in this section)  
 2 pages max - design sketches, storyboard, scripts, screen shots, etc (minimum of 1 page in this section)

Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

**COMPUTER GENERATED PRESENTATION**

Multimedia – *entries must include two or more communication methods. A story board and brief description of the two or more communication methods used must be included.*

<b>Team</b>				
<b>Individual</b>				
Presentation – not more than 15 slides	.....	06110	06111	
Presentation – Not more than 25 slides	.....	06112	06113	
Presentation – More than 25 slides	.....	06114	06115	

**SOUND EDITING**

<b>Team</b>				
<b>Individual</b>				
Audio CD —30 seconds	.....	06116	06117	
Audio CD —60 seconds	.....	06118	06119	
Audio Editing – must supply original & finished copy - 15 Sec. Max	.....	06120	06121	
Audio Editing – must supply original & finished copy - 30 Sec. Max	.....	06122	06123	
Audio Editing – must supply original & finished copy - 60 Sec. Max	.....	06124	06125	
Audio Editing – must supply original & finished copy - 3 Minutes Max	.....	06126	06127	

**VIDEO EDITING – Students must supply original footage and finished copy.**

<b>Team</b>		
<b>Individual</b>		
<b>CD-R / DVD format</b>		
Video Commercial – 15 Seconds precisely	06134	06135
Video Commercial – 30 Seconds precisely	06136	06137
Video Commercial – 60 Seconds precisely	06138	06139
Video Presentation – 30 seconds precisely	06140	06141
Video Presentation – 60 seconds precisely	06142	06143
Video Presentation – 120 seconds precisely	06144	06145
Video Promotional/Instructional/Demonstration – 3 minutes maximum	06146	06147
Video Album (Example: memories on video) – 5 minutes maximum	06148	06149
Video Editing Musical Original Music - Maximum one song	06150	06151
Video Newscast – No commercially processed program 3 minute maximum	06152	06153
Video Animation (3-5 minutes)	06154	06155
Graphic Video –(Example: Logo created in PhotoShop for video)	06156	06157
Marketing Video – (Example: Non-Profit organization video such as say no to drugs)	06158	06159
Video Editing – must supply original & finished copy	06160	06161
Video Editing Chromakey Screen - Original and After (Maximum 60 seconds.)	06162	06163
Video Editing Musical – Max One Song.	06164	06165
Video Public Service Announcement 30 sec.	06166	06167
Music Video Lip Sync – (Example: MTV, CMT Video) (Refer to page 8 Rule 7)	06168	06169
Music Video Original Student – (1 Song Length Max) (Refer to page 8 Rule 7)	06170	06171
Historical aspect of your community, mini encyclopedia (must include sound, text, animation, and or digital video)	06172	06173
Video Highlights - Video Footage Only	06174	06175

**COMPUTER IMAGING**

<b>Team</b>		
<b>Individual</b>		
<b>CD-R / DVD format</b>		
Computer Generated Graphic Art - No clip art – Single page - Color	06182	06183
Computer Generated Graphic Art - No clip art – Single page – Black & White	06184	06185
Computer generated graphic art - No clip art - Multiple page - color	06186	06187
Computer generated graphic art - No clip art - Multiple page - black & white	06188	06189
Computer generated original 3-D Landscape – no clip art	06190	06191
Computer generated original 3-D Architecture – no clip art	06192	06193
Computer generated original 3-D Transportation – no clip art	06194	06195
Computer generated original 3-D Sci-Fi Image – no clip art	06196	06197
Computer generated original 3-D Not mentioned above – no clip art	06198	06199
Computer Generated Original Drawing or Painting- B/W- Paint program- no clip art	06200	06201
Computer Generated Original Drawing or Painting- Color- Paint program- no clip art	06202	06203
Computer Scanned Object(s). – (Example: Montage)	06204	06205
Computer Image Transfer – Fabric Applications (Example: T-shirt)	06206	06207
Computer Image Transfer – Other Applications (Example: Mugs)	06208	06209
Computer Manipulated Scanned Image – <i>Scanned image(s) which have been computer manipulated. Must include original image(s)</i>	06210	06211
Computer Manipulated Digital Image – <i>Digital image(s) which have been computer manipulated. Must include original image(s)</i>	06212	06213
Desktop Wallpaper	06214	06215

**2D ANIMATION**

<b>Team</b>		
<b>Individual</b>		
<b>CD-R / DVD format</b>		
2D Animation with sound and or lip sync- 30 sec. max	06224	06225
2D Animation – Ex. animated gif's – 30 sec. max.	06226	06227
2D Animation without sound. - 30 sec. max	06228	06229
2D Animation. (3 minute maximum)	06230	06231

**2D ANIMATION****Team****Individual****CD-R / DVD format**

Open 2D Animation. – 5 min. max	06232	06233
2D Animation (15 seconds – MUST BE PRECISELY 15 SEC)	06234	06235
2D Animation (30 seconds – MUST BE PRECISELY 30 SEC)	06236	06237
2D Animation (60 seconds – MUST BE PRECISELY 60 SEC)	06238	06239
2D Animated Commercial – 15 Seconds precisely	06240	06241
2D Animated Commercial – 30 Seconds precisely	06242	06243
2D Animated Commercial – 60 Seconds precisely	06244	06245
Generate a Morphing image	06246	06247

**3D ANIMATION****Team****Individual****CD-R / DVD format**

3D Introduction EXAMPLE: spinning logo	06250	06251
Walkthrough Architecture – 60 Sec.. max	06252	06253
Flythrough Architecture – 60 Sec. max	06254	06255
Walkthrough Landscape – 60 Sec. max	06256	06257
Flythrough Landscape – 60 Sec. max	06258	06259
Animated Mechanical movement - 60 Sec. Max	06260	06261
Animated Transportation Device – 60 Sec. Max	06262	06263
Sci-fi Animation– 60 Sec. Max.	06264	06265
Time Lapse Animation – 60 Sec. Max	06266	06267
Open 3D animation (3 minute maximum)	06268	06269
3D Animation (15 seconds – MUST BE PRECISELY 15 SEC)	06270	06271
3D Animation (30 seconds – MUST BE PRECISELY 30 SEC)	06272	06273
3D Animation (60 seconds – MUST BE PRECISELY 60 SEC)	06274	06275
3D Animated Commercial – 15 Seconds precisely	06276	06277
3D Animated Commercial – 30 Seconds precisely	06278	06279
3D Animated Commercial – 60 Seconds precisely	06280	06281
Human or Animal 3D animation – 60 Sec. Max	06282	06283
Presentation Animation : Multiple part animation (Note: This category is reserved for students working with 3-D applications, Advanced Modeling and some of the Animation software - Max 5 min. CD-R / DVD format	06290	06291
Multimedia Presentation of a single machine part. (3-D drawing digital presentation) CD-R / DVD format	06292	n/a

**WEBPAGE DESIGNS****Team****Individual****CD-R / DVD format**

Individual Related WebPages	06294	06295
School Related WebPages	06296	06297
Commercial Related WebPages	06298	06299

**OTHER****Team****Individual****CD-R / DVD format**

Video Game Design - 2D	06300	06301
Video Game Design -3D	06302	06303
Computer assisted tutorial to teach a subject or software	06304	06305
Computer Based Training – Develop an interactive training module	06306	06307
Use a programming language to make a text based interactive program	06308	06309
Use a programming language to make a graphic based interactive program	06310	06311



**SINGLE PHOTO ENTRIES****Student Processed****Commercially Processed****Digitally Processed**

Landscape. <i>One photograph. B/W</i> .....	06368	06369	06370
Landscape. <i>One photograph. Color</i> .....	06371	06372	06373
Marine. <i>One underwater photograph. BW</i> .....	06374	06375	06376
Marine. <i>One underwater photograph. Color</i> .....	06377	06378	06379
Pinhole Photo - <i>One photograph. B/W</i> .....	06380	06381	06382
Portrait photography. <i>One photograph of a group or individual. B/W</i> .....	06383	06384	06385
Portrait photography. <i>One photograph of a group or individual. Color</i> .....	06386	06387	06388
Product photography. <i>One photograph of a single product to be used in sales &amp; advertising B/W</i> .....	06389	06390	06391
Product photography. <i>One photograph of a single product to be used in sales &amp; advertising Color</i> .....	06392	06393	06394
Special Effects. <i>One photograph. B/W</i> .....	06395	06396	06397
Special Effects. <i>One photograph. Color</i> .....	06398	06399	06400
Still Life. <i>One photograph B/W</i> .....	06401	06402	06403
Still Life. <i>One photograph Color</i> .....	06404	06405	06406
Other Photo not listed above .....	06407	06408	06409

**MULTIPLE PHOTO ENTRIES**

**PHOTOGRAPHS:** Photos must be taken by the student unless otherwise noted. Maximum printed size for multiple photo classifications the size limit is 22 x 28 inches. Multiple photos may be mounted or printed as a single sheet up to 22 x 28 inches.

Journalistic photo essay. <i>Six to twelve photographs mounted to tell a newsworthy story. Titles and brief captions may be used. B/W</i> .....	06420	06421	06422
Journalistic photo essay. <i>Six to twelve photographs mounted to tell a newsworthy story. Titles and brief captions may be used. Color</i> .....	06423	06424	06425
Special Effects. <i>Two or more photographs. B/W</i> .....	06426	06427	06428
Special Effects. <i>Two or more photographs. Color</i> .....	06429	06430	06431
Technical process photo-essay. <i>Six to twelve photographs mounted to explain how to do something. Titles and brief captions may be used. B/W</i> .....	06432	06433	06434
Technical process photo-essay. <i>Six to twelve photographs mounted to explain how to do something. Titles and brief captions may be used. Color</i> .....	06435	06436	06437
Travel photo-essay. <i>Three to six photographs mounted to share the atmosphere and feel of a place while traveling. B/W</i> .....	06438	06439	06440
Travel photo-essay. <i>Three to six photographs mounted to share the atmosphere and feel of a place while traveling. Color</i> .....	06441	06442	06443
Montage - Multiple Photo - BW, Color, or Mix .....	06444	06445	06446

## DRAFTING/CAD CATEGORY

*Items in this category involve student created projects in which students created projects using traditional drafting or modern computer aided design standards practices, and methods. This category will be divided into two sections: Engineering and Architectural.*

**MAXIMUM** sheet size in this category is 24 x 36 inches. No limit on number of sheets.

**American National Standard Institute (ANSI)** Standards of symbols and conventions will be appropriate

**DC: 1-1 PRECISION DIMENSIONS:** Entries must include such dimensioning practices as: datum line, tolerances, limits, geometric symbols, reference dimensions and BASIC dimensions, but not limited to these examples.

**DC: 1-2 DEVELOPMENT AND INTERSECTIONS:** Each entry must be accompanied with a model. The suggested material is stiff paper fastened with tape or glue. The model may be painted to appear as metal as desired. The model must be attached to the drawing with tape or glue.

**DC: 1-3 FILLETS AND ROUNDS:** May be represented only by curved or straight lines on any drawing for clarity.

**FREE HAND LETTERING:** Is to be used except for CADD and INK drawings. All pencil drawings must have free hand lettering except for preprinted title block and logos.

**MULTIPLE SHEETS:** Drawing sets should be fastened together along the left edge.

**PICTORIAL:** Pictorial drawings do not have to be dimensioned.

**RENDERING:** Rendering or shading permitted only in classifications as noted.

**TITLE BLOCK:** Title blocks may contain the following information: STUDENT NAME, SCHOOL NAME, SCHOOL ADDRESS, UNIQUE STUDENT ID NUMBER, CHAPTER NUMBER, AND CLASSIFICATION NUMBER. NO SCHOOL LOGOS ALLOWED.

STUDENT CREATED LOGOS (NOT ASSOCIATED WITH SCHOOL MASCOT/LOGO IS ALLOWED)

**At the direction of the TSA Board, drawings can be mounted on an affixed board as long as the outside dimension of the matting does not exceed the drawing size by more than 1/2 " on any edge. For multiple page entries - use the largest drawing size. Blank or Mylar cover sheets are allowed.**

The bold face word CADD means CADD ONLY.

**NOTE: ALL MANUAL DRAWINGS CAN BE EITHER PENCIL OR INK.**

### REQUIRED MINIMUM DOCUMENTATION:

**Level 1** - Single Page containing a single descriptive paragraph explaining the design, development, and production of project.

**Level 2** - Page 1 - centered on the page in consecutive lines, the unique student ID, Chapter Number, and Classification Number.

1 page max - Description of product, design process, description of software/hardware used, production process, self-evaluation, etc...

2 page max - Sketches, pictures, original drawings used, etc... (minimum of 1 page in this section)

Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

## ENGINEERING GRAPHICS

*For the Engineering Section this category: symbols, lettering, and standards should be used as appropriate. Common industrial practices and time savers may be used. Shading, rendering and coloring may be used only in those classifications as noted. Working drawings shall consist of the following: Multi-view drawings with dimensions necessary for manufacture, any other necessary views such as: isometric, sections, exploded views, assembly views, charts, and notes are acceptable.*

### Team

### Individual

Sketch drawing - any mechanical part/parts	07000	NA
Working drawing of single part includes pictorial	07002	NA
Working drawing of single part includes pictorial <b>CADD</b>	07004	NA
Working drawing of single part (Refer to <b>DC-1:1</b> )	07006	NA
Working drawing of single part (Refer to <b>DC-1:1</b> ) <b>CADD</b>	07008	NA
Development and intersection drawing (Refer to <b>DC-1:2</b> )	07010	07011
Development and intersection drawing <b>CADD</b> (Refer to <b>DC-1:2</b> )	07012	07013
Working drawings of jigs and fixtures	07014	07015
Working drawings of jigs and fixtures <b>CADD</b>	07016	07017
Working drawing of gears, cams, lever, etc.	07018	07019
Working drawing of gears, cams, lever, etc. <b>CADD</b>	07020	07021
Working drawing: Pipe fabrication (Fluid transportation)	07022	07023
Working drawing: Pipe fabrication (Fluid transportation) <b>CADD</b>	07024	07025
Working drawings of multiple machine or mechanical 2 - 5 parts	07026	07027
Working drawings of multiple machine or mechanical 2 - 5 parts <b>CADD</b>	07028	07029
Working drawings of multiple machine or mechanical 6 or more parts	07030	07031
Working drawings of multiple machine or mechanical 6 or more parts <b>CADD</b>	07032	07033
Working drawing: Electrical/electronic (Note: NO BUILDING ELECTRICAL WIRING PLAN EXAMPLE: electronic device with a schematic wiring diagram but not limited to this example.)	07034	07035
Working drawing: Electrical/electronic (Note: NO BUILDING ELECTRICAL WIRING PLAN EXAMPLE: electronic device with a schematic wiring diagram but, not limited to this example). <b>CADD</b>	07036	07037
Working drawing of a transportation device	07038	07039
Working drawing of a transportation device <b>CADD</b>	07040	07041
Pictorial Drawing Single Part – no rendering (Refer to <b>DC-1:3</b> )	07042	NA
Pictorial Drawing Single Part – no rendering (Refer to <b>DC-1:3</b> ) <b>CADD</b>	07044	NA
Pictorial Drawing of multiple machine or mechanical 2 - 5 parts– no (Refer to <b>DC-1:3</b> )	07046	07047
Pictorial Drawing of multiple machine or mechanical 2 - 5 parts <b>CADD</b> – no rendering (Refer to <b>DC-1:3</b> )	07048	07049
Pictorial Drawing of multiple machine or mechanical 6 or more parts– no rendering (Refer to <b>DC-1:3</b> )	07052	07053
Pictorial Drawing of multiple machine or mechanical 6 or more parts <b>CADD</b> – no rendering (Refer to <b>DC-1:3</b> )	07054	07055
Presentation drawing of a transportation device. (Pencil, Ink, or CADD - NO AIRBRUSH)	07056	07057
Presentation drawing of single part (May be illustrated in any way except airbrush.)	07058	NA
Presentation drawing of single part <b>CADD. ALL WORK MUST BE DONE IN CADD.</b>	07060	NA
Presentation drawing of multiple part (May be illustrated in any way except airbrush.) 2 to 5 parts	07062	07063
Presentation drawing of multiple part <b>CADD. ALL WORK MUST BE DONE IN CADD.</b> 2 to 5 parts	07064	07065
Presentation drawing of multiple part (May be illustrated in any way except airbrush.) 6 or more parts	07066	07067
Presentation drawing of multiple part <b>CADD. ALL WORK MUST BE DONE IN CADD.</b> 6 or more parts	07068	07069

## ENGINEERING GRAPHICS

*For the Engineering Section this category: symbols, lettering, and standards should be used as appropriate. Common industrial practices and time savers may be used. Shading, rendering and coloring may be used only in those classifications as noted. Working drawings shall consist of the following: Multi-view drawings with dimensions necessary for manufacture, any other necessary views such as: isometric, sections, exploded views, assembly views, charts, and notes are acceptable.*

Team		
Individual		I
Airbrush Presentation drawing of anything mechanical (Not an architectural category).....	07070	07071
Airbrush Presentation drawing of anything mechanical (Not an architectural category) <b>CADD</b>	07072	07073
Working drawings for a Reverse Engineered project Single Part - Documentation must include picture of original object as well as original notes containing measurements obtained using calipers, micrometers, etc...	07074	07075
Working drawings for a Reverse Engineered project Multiple Part - Documentation must include picture of original object as well as original notes containing measurements obtained using calipers, micrometers, etc...	07076	07077

## ARCHITECTURAL GRAPHICS

*For the Architectural Graphics portion of this section: American Institute of Architects or the Architectural Graphic Standards should be used as needed. Common industrial practices and timesavers may be used. Shading, rendering and coloring may be used only in those classifications as noted. Working drawings shall consist of, but not be limited to the following: Elevations, floor plans, site plans, foundation plans, electrical plans (may be included on the floor plan), necessary details, and specification sheets. Renderings allowed on presentation drawings only.*

**NOTE: ALL MANUAL DRAWINGS CAN BE EITHER PENCIL OR INK.**

ALL FINISH (RENDERING) IS PENCIL UNLESS NOTED. No limit to number of sheets.

### THE FOLLOWING CLASSIFICATIONS ARE FOR TEAMS ONLY

Classification		I
Working drawings of a residential home (Refer to heading for the number of sheets.)	07080	
Working drawings of a residential home (Refer to heading for the number of sheets.) <b>CADD</b>	07081	
Working drawings of Apartment, Condo, Townhouse, Duplex, etc. (Refer to heading for the number of sheets.)	07082	
Working drawings of Apartment, Condo, Townhouse, Duplex, etc. (Refer to heading for the number of sheets.) <b>CADD</b>	07083	
Recreational facility (sheets as needed)	07084	
Recreational facility (sheets as needed) <b>CADD</b>	07085	
Commercial or public structure (sheets as needed)	07086	
Commercial or public structure (sheets as needed) <b>CADD</b>	07087	
Civil construction: (EXAMPLE: Tunnel, dam, bridge, or transportation systems, etc. sheets as needed)	07088	
Civil construction: (EXAMPLE: Tunnel, dam, bridge, or transportation systems, etc. sheets as needed) <b>CADD</b>	07089	
Drawing(s) of Space Structure. (Must include a study model)	07090	
Drawing(s) of Space Structure. (Must include a study model) <b>CADD</b>	07091	
Presentation drawings of Master plan development showing streets, property subdivisions, public use areas, utility locations, easements, contours and development themes.	07092	
Presentation drawings of Master plan development showing streets, property subdivisions, public use areas, utility locations, easements, contours and development themes. <b>CADD</b>	07093	

**ARCHITECTURAL GRAPHICS****THE FOLLOWING CLASSIFICATIONS ARE FOR INDIVIDUALS ONLY**

Sketch drawing - Any Architectural subject - Shading Allowed - pencil (black & white)	07094
Presentation Sketch drawing - Any Architectural subject - Shading Allowed - (color)	07095
Working drawings of Residential home under 2000 sq. ft HVAC (Refer to headings for the required sheets.)	07096
Working drawings of Residential home under 2000 sq. ft HVAC (Refer to headings for the required sheets.) <b>CADD</b>	07097
Working drawings of Residential home over 2000 sq. ft HVAC (Refer to headings for the required sheets.)	07098
Working drawings of Residential home over 2000 sq. ft HVAC (Refer to headings for the required sheets.) <b>CADD</b>	07099
Working drawings of Residential home Multistory (Refer to headings for the required sheets.)	07100
Working drawings of Residential home Multistory (Refer to headings for the required sheets.) <b>CADD</b>	07101
Working drawings of Apartment, Condo, Townhouse, Duplex, etc. (Refer to heading for the number of sheets.)	07102
Working drawings of Apartment, Condo, Townhouse, Duplex, etc. (Refer to heading for the number of sheets.) <b>CADD</b>	07103
Remodeling drawings (number of sheets as needed)	07104
Remodeling drawings (number of sheets as needed) <b>CADD</b>	07105
Construction detailing (All types of typical details that are used in the construction of a building - 1 sheet)	07106
Construction detailing (All types of typical details that are used in the construction of a building - 1 sheet) <b>CADD</b>	07107
Working drawings commercial (number of sheets as needed)	07108
Working drawings commercial (number of sheets as needed) <b>CADD</b>	07109
Civil construction: (EXAMPLE: Tunnel, dam, bridge, or transportation systems, etc. sheets as needed)	07110
Civil construction: (EXAMPLE: Tunnel, dam, bridge, or transportation systems, etc. sheets as needed) <b>CADD</b>	07111
Working Drawing of electrical system Architectural. (EXAMPLE: Phone System, Audio System, Fire Alarm, and Security System. Not Electrical Floor Plan)	07112
Working Drawing of electrical system Architectural. (EXAMPLE: Phone System, Audio System, Fire Alarm, and Security System. Not Electrical Floor Plan) <b>CADD</b>	07113
Recreational facility (sheets as needed)	07114
Recreational facility (sheets as needed) <b>CADD</b>	07115
Drawing(s) of Space Structure. (Must include a study model)	07116
Drawing(s) of Space Structure. (Must include a study model) <b>CADD</b>	07117
Topographic/Surveying drawings (number of sheets as required)	07118
Topographic/Surveying drawings (number of sheets as required) <b>CADD</b>	07119
Architectural Landscape Plan (Number of sheets as needed) Should include underground sprinkler plan.	07120
Architectural Landscape Plan (Number of sheets as needed) Should include underground sprinkler plan. <b>CADD</b>	07121
Presentation drawing (1 sheet) Residential (rendered in any way <b>except Airbrush</b> )	07122
Presentation drawing (1 sheet) Residential (rendering method <b>computer</b> only)	07123
Presentation drawing (1 sheet) Commercial (rendered in any way <b>except Airbrush</b> )	07124
Presentation drawing (1 sheet) Commercial (rendering method <b>computer</b> only)	07125
Presentation drawing (1 sheet) Architectural ( <b>Airbrush only</b> )	07126
Presentation drawings of Master plan development showing streets, property subdivisions, public use areas, utility locations, easements, contours and development themes.	07127
Presentation drawings of Master plan development showing streets, property subdivisions, public use areas, utility locations, easements, contours and development themes. <b>CADD</b>	07128

**ARCHITECTURAL GRAPHICS**  
**THE FOLLOWING CLASSIFICATIONS ARE FOR INDIVIDUALS ONLY**

Energy Conservation Design: Must include one or more applications of active, passive earth sheltered, hybrid, envelope, or other energy saving designs elements. (Number of sheets as needed)	.....	07129
Energy Conservation Design: Must include one or more applications of active, passive earth sheltered, hybrid, envelope, or other energy saving designs elements. (Number of sheets as needed) <b>CADD</b>	.....	07130
Working drawings of a Public building (non-commercial use)	.....	07131

**CONSTRUCTION, MODELING & DESIGN CATEGORY**

*Items in this category involve projects in which students created and designed structures, models, used commercial kits, or highlighted the design process.*

*Judging criteria for production will be based on the following areas: degree of difficulty, appearance, finish, and craftsmanship. Material used is calculated as item as displayed.*

**MAXIMUM BASE SIZE for models: 30" x 42" (unless otherwise stated)**

**Model must have hard copy of plan view**

**REQUIRED MINIMUM DOCUMENTATION:**

**Level 1** - Single Page containing a single descriptive paragraph explaining the design, development, and production of project.

**Level 2** - Cover - centered on the page in consecutive lines, the student(s)' name(s), the product name, and school name.

2 page max - Description of product, design process, description of software/hardware used, production process, self-evaluation, etc... (minimum of 1 page in this section)

3 page max - Sketches, pictures, etc... (minimum of 1 page in this section)

Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

**Structures**

**Team**

**Individual**

A full size structure less than 50 square feet	.....	07150	07151
A full size structure over 50 square feet	.....	07152	07153
A multimedia presentation and documentation of a full size structure.	.....	07154	07155

*(Only for structures that cannot be transported to contest)*

**Models**

This category is for finished models with detailing, full landscaping, sidewalks, trees, cars, people, etc.

**Team**

**Individual**

A model of a residential single or multifamily unit .....	07156	07157
A model of an Apartment, Condo, Townhouse, Duplex, etc. ....	07158	07159
A scale model of residential structure not previously listed ..	07160	07161
A model of a Master plan development. ....	07162	07163
A scale model of a commercial structure .....	07164	07165
A scale model of a civil structure .....	07166	07167
A model or display of an automated security or environmental control system .....	07168	07169
A working model of a subsystem .....	07170	07171
A model of a space based production system .....	07172	07173
A model of an automated facility for manufacturing a product ..	07174	07175
A model of a Recreational facility. ....	07176	07177
Structural Model Residential home (using appropriate scale, material and keeping with current framing standards)	07178	07179

**STUDY MODEL**

A study model is similar to the type used by architects for site design and planning. Suggested materials: cardboard, foam board, Styrofoam, paper, plastic, balsa wood, and glue. This model is to be unfinished, no landscaping or finishing methods allowed

**All study models are a maximum of 24"x36" unless otherwise specified.**

**Team**

**Individual**

Study Model Residential .....	07180	07181
Study Model Commercial .....	07182	07183
(Removable roof not required.)		

**KITS**

*Entries made from commercial kits.*

**Team**

**Individual**

Kits—woods .....		
Kits—metals .....	07184	07185
Kits—Electrical/electronics .....	07186	07187
Kits—other .....	07188	07189

**DESIGN**

*Projects will be judged on the basis of design: function, color, texture, balance, etc. The project should be accompanied by data that has ( 1) complete set of working drawings, (2) a bill of materials, (3) list of all commercially made parts, (4) a statement of design source. A design may not be entirely original, but a clear, complete description of the source of the design is necessary.*

**Team**

**Individual**

Design—woods .....		
Design—metals .....	07190	07191
Design—Electrica .....	07192	07193
Design—other .....	07194	07195
Design—combination .....	07196	07197

# APPLIED TECHNICAL SCIENCE CATEGORY

**DISPLAYS/PORTFOLIOS:** The use of photographs, videos, maps, charts, schedules, safety

**Entries must be complete and in safe operating condition. All devices and products must be displayed, where feasible, in such a manner as to allow internal inspection of workmanship. High voltage components and potentially dangerous areas must be covered and labeled. The student must provide fire extinguisher and proper shielding of engines.**

**REQUIRED MINIMUM DOCUMENTATION: NON DISPLAY**

**Level 1** - Single Page containing a single descriptive paragraph explaining the design, development and production of project.

**Level 2** - Cover - centered on the page in consecutive lines, the student(s)' name(s), the product name, school name, and Conference name and date.  
 2 pages max - Description of product, design process, description of software/hardware used, production process, self-evaluation, etc... (minimum of 1 page in this section)  
 2 pages max - design sketches, working drawings, pictures, technical specs, etc... (minimum of 1 page in this section)  
 Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed items)

## MULTIDISCIPLINARY

**Team** \_\_\_\_\_

**Individual** \_\_\_\_\_

A comprehensive display encompassing selected learning activities interfacing at least two school disciplines. ( <i>Math, Science, English, etc.</i> )	08000	08001
A comprehensive display encompassing selected learning activities interfacing more than four school disciplines, ( <i>Science, Math, etc.</i> )	08002	n/a

## AERODYNAMICS

*Develop and produce airfoils for the following. Provide drag and lift test results for each airfoil. Document the research of the air foil aero dynamics.*

**Team** \_\_\_\_\_

**Individual** \_\_\_\_\_

Air foil testing for automobile	08004	n/a
Air foil testing for airplane	08006	n/a
Air foil testing for rockets	08008	n/a
Develop a portfolio that explains the process of flying including checklist for preflight, during flight, post-flight, flight plans and pilot log	08010	n/a
Static display showing principles of flight	08012	08013
Static display showing aircraft parts and their usage	08014	08015

**CONSTRUCTION TECHNOLOGY**

*Home/commercial building - static display of a partial model that demonstrates the use of structural concepts.*

**Team****Individual**

Display the use of construction products, processes, or techniques	08016	08017
A display of a full size construction structure	08018	08019
A display of an organizational chart for a construction company including job descriptions for each position	08020	08021
A display to illustrate the difference 2 or more types of structure	08022	08023
A display of a study of the types, grades, and strength of selected materials used in construction. ( <i>Metal, wood, polymers, others</i> )	08024	08025

**ELECTRONICS/ELECTRICAL****Team****Individual**

A schematic diagram of wiring installations, residential or commercial, must include location, local wiring code and proof of compliance with code	08040	08041
A display of electrical energy storage device	08042	08043
A display of electronic communications devices (radio, TV, telephone etc.)	08044	08045
A display of electronic communication systems	08046	08047
A display of properties of electrical/electronic components, not-semiconductor	08048	08049
A display of properties of electrical/electronic components, semiconductor	08050	08051
A display of applications of electrical robots	08052	08053
Residential Wiring	08054	n/a
Residential Wiring	08056	08057
A schematic diagram of wiring installations, residential or commercial, must include location, local wiring code and proof of compliance with code	08058	08059
Production of electronic motor	08060	08061
Production of alarm circuits	08062	08063
Production of audio systems	08064	08065
Production of games/toys	08066	08067
Production of communication device	08068	08069
Production of electrical/electronic testing device	08070	08071
Production of student-made printed circuit boards	08072	08073
Production of logic circuits	08074	08075
A model to display the generation of electrical energy from alternate sources	08076	08077
A model to display the conservation of electrical energy	08078	08079
A model of electrical distribution/transmission	08080	08081
A student fabricated electronic device (non-kit)	08082	08083
Power efficiency study. A display of the test results of a comparison study of electrical usage of at least five different items. Display must include statement of problem to be researched, results should outline electric usage in kWh amps, voltage drop, and time. Research would determine cost of kWh in test area and determine cost use during test time for each item	08084	08085
Computer interfacing and /or instrumentation	08086	08087

**ENERGY, POWER, & TRANSPORTATION**

*Static displays that demonstrate the extraction, processing, transferring, controlling and / or use of the following:*

<b>Team</b>		
<b>Individual</b>		
Solar energy .....	08090	08091
Power generation .....	08092	08093
Electrical energy .....	08094	08095
Hydraulics .....	08096	08097
Pneumatics .....	08098	08099
A display or the application of national safety codes .....	08100	08101
A display about fuel resource, exploration, extraction, processing and utilization .....	08102	08103
A display about energy Safety .....	08104	08105
A display of energy conservation .....	08106	08107
A display about the generation of electrical energy from fossil fuels .....	08108	08109
A display about the generation of electrical energy from nuclear fuels .....	08110	08111
A display about the generation of electrical energy from alternate sources .....	08112	08113
A display about the application of energy from alternate sources .....	08114	08115
A display about the conversion of electrical energy into power .....	08116	08117
A display about distribution of electrical energy .....	08118	08119
A display about distribution transmission storage of energy .....	08120	08121
A display of the results of a comparison of an energy device which includes problem statement, testing guidelines and identifies the variables. The labeled example must identify the source, transmission and control of energy. (ex: solar cooker)	08122	08123
A display of internal combustion engines to show principle, utilization, restoration, and impact	08124	08125
A display about external combustion engines to show principle, utilization, restoration, and impact	08126	08127
Rebuilt single cylinder engine. List of procedure, bill of parts, and time sheet are Required documentation	08128	08129
External/internal combustion engines - operation and maintenance Running - Maximum 5 horsepower .....	08130	08131
External/internal combustion engines - operation and maintenance. Static display .....	08132	08133
Transmission device - operational .....	08134	08135
A display of principles, utilization and impact of fluid power systems .....	08136	08137
A display of principles, utilization and impact of mechanical power systems .....	08138	08139
A display of principles, utilization and impact of power systems .....	08140	08141
Mechanical/fluid energy power devices - operational and maintenance .....	08142	08143
A display about a career in the power / energy field .....	08144	08145
A display about a career in the transportation field .....	08146	08147
A display about the factors that effect the purchase and use of energy products .....	08148	08149
A display about the factors that effect the purchase and use of power products .....	08150	08151
A display about the marketing of power, energy, or transportation product or service .....	08152	08153
A display about highway transportation .....	08154	08155
A display about railway transportation .....	08156	08157
A display about air or space transportation .....	08158	08159
A display about pipeline transportation .....	08160	08161
A display about water transportation .....	08162	08163
A display of the results of a comparison of an transportation device which includes problem statement, testing guidelines and identifies the variables. The labeled example must identify the source, transmission and control of energy. (ex: air rocket)	08164	08165
A display about the factors that effect the purchase and use of transportation products .....	08166	08167
Transportation system - industrial, land, air, sea .....	08168	08169
An application of energy or power to solve a problem .....	08170	08171

**MANUFACTURING****Team****Individual**

A comprehensive display of students assembly and or maintenance of production..... machines and or equipment.	08172	08173
A display of an organizational chart for a manufacturing company including job descriptions for each position	08174	08175
A display of a study of the types, grades, and strength of selected materials used in manufacturing. ( <i>Metal, wood, polymers, others</i> )	08176	08177
A display of several production career opportunities including; (a) employment opportunities, (b) education or training needed, (c) job descriptions, (d) effective methods of securing jobs, and (e) future long term employment outlook	08178	08179
A display of an entrepreneur production venture which must include; (a) minimum, (b) organizational chart, (c) sales forecast, (d) market survey, (e) two product samples	08180	08181
A display to demonstrate computer applications in production systems	08182	08183

**MATERIALS****Team****Individual**

A display of materials testing	08184	08185

**ROBOTICS****Team****Individual**

Static display of robotics	08190	08191
Static display of robotics safety	08192	n/a
Portfolio of robotics activity including statement of problem, written program in machine language and pictures / video showing setup	08194	08195
Robotics Program - ( <i>Teach pendant method</i> )	08196	n/a
Robotics Program - ( <i>computer keyboard method</i> )	08198	n/a

**LASERS**

*A display that demonstrates the use of the light energy through the use of a laser emitting device.*

**Team****Individual**

Laser generation	08200	08201

**BIOTECH**

*Activities entered in this classification must have portfolio documenting research in the area and illustrate or explain a method for solving the problem.*

**Team****Individual**

Biotech health portfolio	08202	08203
Display of nanotech technology	08204	08205
Display of Hydroponics technology	08206	08207
Display of ergonomics,	08208	08209
Display of other Biotech research activity	08210	08211

