



Texas Technology Student Association - Work-Based Learning and Expanded Learning Opportunities

**Program of Study:** Engineering

**Career Cluster:** Science, Technology, Engineering and Mathematics

Classification of Competitive Event	Name of Event	Classification #	Link
National Qualifying Events	Animatronics		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Computer Aided Design (Engineering)		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Dragster Design		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Drone Challenge (UAV)		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Engineering Design		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Flight Endurance		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Manufacturing Prototype		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Senior Solar Sprint		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Structural Design & Engineering		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Systems Control Technology		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Technology Problem Solving		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Transportation Modeling		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	VEX Robotics Competition		<a href="https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1">https://tsaweb.org/competitions-programs/tsa/high-school-competitions/1</a>
	Unique to Texas On-Site Events	Hot Rod CO2 Car (Wood)	HU100
Hot Rod CO2 Car (ABS)		HU101	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>
Research Racer (Wood)		HU102	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>
Research Racer (ABS)		HU103	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>

	RC Vehicle - Electric	HU104	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>
	Drone Competition	HU108	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>
	Catapult	HU109	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>
	Technology Problem Solving Graphic Solution	HU310	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>
	Engineering & Design Graphic Solution	HU311	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>
	Manufacturing Design Graphic Solution	HU314	<a href="https://texastsarulebook.org/category/unique-to-texas-events">https://texastsarulebook.org/category/unique-to-texas-events</a>
<b>Unique to Texas Projects</b>			
<i>Engineering Design</i>	Sketching/Free Hand: May be Single or Multi-Part. May be Single View or Multi-View. Pictorial allowed. Only hand rendering allowed	HP7000	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Mechanical/Technical Drafting (pencil or ink) - May be Single or Multi-Part. May be Single View or Multi-View. Pictorial allowed. Only hand rendering allowed.	HP7002	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Working drawing of single part includes pictorial [CADD]	HP7004	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Working drawing of single part - no pictorial/isometric view [CADD]	HP7006	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Development and interaction drawing [CADD] (Refer to DC-1:2)	HP7008	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Working drawing of jigs and fixtures [CADD]	HP7010	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Working drawing of gears, cams, lever, etc [CADD]	HP7012	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Working drawing: pipe fabrication (fluid transportation) [CADD]	HP7014	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Working drawing of a transportation device [CADD]	HP7016	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
	Mechanical/Technical Drafting (pencil or ink) - working drawing - May be Single or Multi-Part: Pictorial allowed. Only hand rendering allowed.	HP7018	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>

Working drawing of multiple machine or 2-5 mechanical parts [CADD]	HP7020	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Working drawing of multiple machine or 6-12 mechanical parts [CADD]	HP7022	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Working drawing of multiple machine or 13 or more mechanical parts [CADD]	HP7024	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Mechanical/Technical Drafting (pencil or ink) - Working drawing: electrical/electronic (Note: No building electrical wiring plan. Example: electronic device with a schematic wiring diagram but not limited to this example.)	HP7026	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Working drawing: electrical/electronic (Note: No building electrical wiring plan. Example: electronic device with a schematic wiring diagram but not limited to this example.) [CADD]	HP7028	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Mechanical/Technical Drafting - Pictorial - May be Single or Multi-Part: Only hand rendering allowed.	HP7030	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Pictorial Drawing Single Part - no rendering (Refer to DC-1:3) [CADD]	HP7032	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Engineering Design - Pictorial Drawing of multiple machine or 2-5 mechanical parts [CADD] no rendering (Refer to DC-1:3)	HP7034	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Pictorial Drawing of multiple machine or 6-12 mechanical parts [CADD] - no rendering (Refer to DC-1:3)	HP7036	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Pictorial Drawing of multiple machine or 13 or more mechanical parts [CADD] - no rendering (Refer to DC-1:3)	HP7038	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>

Mechanical/Technical Drafting - Presentation - May be Single or Multi-Part: Only hand rendering allowed - no airbrush.	HP7040	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Presentation drawing of a transportation device [CADD]	HP7042	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Presentation drawing of single part [CADD]	HP7044	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Presentation drawing of multiple parts 2-5 [CADD]	HP7046	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Presentation drawing of multiple parts 6-12 [CADD]	HP7048	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Presentation drawing of multiple parts 13 or more [CADD]	HP7050	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Working Drawings for Reverse Engineered Project - Single Part: Mechanical Drafting or CADD - Documentation must include picture of original object as well as original notes containing measurements obtained using calipers, micrometers, etc.	HP7052	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Reverse Engineered Project - Multiple Parts: Mechanical Drafting or CADD - Documentation must include picture of original object as well as original notes containing measurements obtained using calipers, micrometers, etc.	HP7054	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Aerospace Drawing: Mechanical Drafting or CADD - See DC 1-4	HP7056	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Presentation Drawings of Space Structure: Mechanical Drafting or CADD	HP7058	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Pictorial Drawings of Space Structure: Mechanical Drafting or CADD	HP7060	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Working Drawings of Space Structure - Mechanical Drafting or CADD	HP7062	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>

Working drawing of electrical system architectural (Ex: Phone System, Audio System, Fire Alarm, and/or Security System. Not Electrical Floor Plan) [CADD]	HP7063	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Computer generated original 3D engineering - .MOV (Quick Time) or .MPEG Format only - This project is submitted digitally ahead of State Contest. See the Front of the Rulebook for submission dates and requirements.	HP7064	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Animated mechanical movement - 60 sec max - .MOV (Quick Time) or .MPEG Format only - This project is submitted digitally ahead of State Contest. See the Front of the Rulebook for submission dates and requirements.	HP7065	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Animated transportation device - 60 sec max - .MOV (Quick Time) or .MPEG Format only - This project is submitted digitally ahead of State Contest. See the Front of the Rulebook for submission dates and requirements.	HP7066	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
Engineering Presentation Animation: multiple part (Note: This category is reserved for students working with 3-D applications, Advanced Modeling and some of the animation software - Max 5 min. - .MOV (Quick Time) or MPEG Format only - This project is submitted digitally ahead of State Contest. See the Front of the Rulebook for submission dates and requirements.	HP7067	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>

	Multimedia presentation of a single machine part (3-D drawing digital presentation) - This project is submitted digitally ahead of State Contest. See the Front of the Rulebook for submission dates and requirements.	HP7068	<a href="https://texastsarulebook.org/high-school-category-projects/drafting-cad">https://texastsarulebook.org/high-school-category-projects/drafting-cad</a>
<i>Applied Technical Science Category</i>	<b>MULTIDISCIPLINARY</b>		
	A comprehensive display encompassing selected learning activities interfacing at least 2 school disciplines. (Math, Science, English, etc.)	HP8000	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	A comprehensive display encompassing selected learning activities interfacing more than 4 school disciplines (Science, Math, etc.)	HP8001	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	<b>AERODYNAMICS</b>		<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	Air foil testing for automobile	HP8002	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	Air foil testing for airplane	HP8003	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	Air foil testing for rockets	HP8004	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	Develop a portfolio that explains the process of flying including checklist for pre/during/post flight and pilot log	HP8005	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	Static display showing principles or mechanics of flight	HP8006	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	<b>CONSTRUCTION TECHNOLOGY</b>		<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	Display the use of construction products, processes or techniques	HP8007	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	A display of a full size construction structure	HP8008	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
	A display of an organizational chart for a construction company including job descriptions for each position	HP8009	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>

A display to illustrate the difference between 2 or more types of structures	HP8010	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of a study of the types, grades & strength of selected materials used in construction (Metal, wood, polymers, others)	HP8011	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>ELECTRONICS/ELECTRICAL</b>		<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A schematic diagram of wiring installations, residential or commercial, must include location, local wiring code and proof of compliance with code	HP8012	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of electrical energy storage device	HP8013	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of electronic communication devices (radio, TV, telephone, etc)	HP8014	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of electronic communication systems	HP8015	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of properties of electrical/electronic components, not semi-conductor	HP8016	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of properties of electrical/electronic components, semi-conductor	HP8017	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of applications of electrical robots	HP8018	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Residential wiring	HP8019	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Residential wiring - a schematic diagram of wiring installations, residential or commercial, must include location, local wiring code and proof of compliance with code	HP8020	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Production of electrical/electronic motor	HP8021	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Production of alarm circuits	HP8022	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Production of audio systems	HP8023	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>

Production of games/toys	HP8024	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Production of communication device	HP8025	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Production of electrical/electronic testing device	HP8026	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Production of student-made printed circuit boards	HP8027	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Production of logic circuits	HP8028	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A model to display the generation of electrical energy from alternate sources	HP8029	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A model to display the conservation of electrical energy	HP8030	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A model of electrical distribution/transmission	HP8031	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A student fabricated electronic device (non-kit)	HP8032	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Power efficiency study - display of the test results of a comparison study of electrical usage of at least 5 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.	HP8033	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>ENERGY, POWER, &amp; TRANSPORTATION</b>		<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Solar energy	HP8040	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Power generaiton	HP8041	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Electrical energy	HP8042	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Hydraulics	HP8043	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Pneumatics	HP8044	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>



<b>A display of the application of national safety codes</b>	HP8045	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display about fuel resource, exploration, extraction, processing &amp; utilization</b>	HP8046	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about energy safety	HP8047	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display of energy conservation</b>	HP8048	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display about the generation of electrical energy from fossil fuels</b>	HP8049	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display about the generation of electrical energy from nuclear fuels</b>	HP8050	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display about the generation of electrical energy from alternate sources</b>	HP8051	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display about the application of energy from alternate sources</b>	HP8052	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display about the conversion of electrical energy into power</b>	HP8053	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display about distribution of electrical energy</b>	HP8054	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display about distribution transmission storage of energy</b>	HP8055	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>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)</b>	HP8056	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display of internal combustion engines to show principle, utilization, restoration &amp; impact</b>	HP8057	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>A display of external combustion engines to show principle, utilization, restoration &amp; impact</b>	HP8058	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>Rebuilt single cylinder engine. List of procedure, bill of parts, and time sheet are required documentation.</b>	HP8059	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>

External/internal combustion engines - operation & maintenance	HP8060	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
External/internal combustion engines - operation & maintenance	HP8061	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Transmission device - operational	HP8062	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of principles, utilization & impact of fluid power systems	HP8063	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of principles, utilization & impact of mechanical power systems	HP8064	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of principles, utilization & impact of power systems	HP8065	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Mechanical/fluid energy power devices - operational & maintenance	HP8066	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about a career in the power/energy field	HP8067	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about a career in the transportation field	HP8068	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about the factors that effect the purchase & use of energy products	HP8069	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about the factors that effect the purchase & use of power products	HP8070	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about the marketing of power, energy, or transportation product or service	HP8071	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about highway transportation	HP8072	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about railway transportation	HP8073	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about air or space transportation	HP8074	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about pipeline transportation	HP8075	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about water transportation	HP8076	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>

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)	HP8077	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display about the factors that effect the purchase & use of transportation products	HP8078	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Transportation system - industrial, land, air, sea	HP8079	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
An application of energy or power to solve a problem	HP8080	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>MANUFACTURING</b>		
A comprehensive display of students assembly and/or maintenance of production machines or equipment.	HP8081	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of an organization chart for a manufacturing company including job descriptions	HP8082	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display of a study of the types, grades & strength of selected materials used in manufacturing (Metal, wood, polymers, others)	HP8083	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
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	HP8084	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
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	HP8085	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
A display to demonstrate computer applications in production systems	HP8086	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>

<b>LASERS</b>		
Laser generation	HP8088	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>MATERIALS</b>		
A display of materials testing	HP8087	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>ROBOTICS &amp; PROGRAMMING</b>		
Robotic Programming (must have printout of program with entry) teach pendant method	HP8094	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Robotic Programming (must have printout of program with entry) any computer based program (C++, Java, etc.)	HP8095	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Robot using two sensors & only 1 controlling unit	HP8096	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Robot using 3-4 sensors & only 1 controlling unit	HP8097	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Robot using 3-4 sensors & 2 or more controlling units	HP8098	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Robot using 5 or more sensors & only 1 controlling unit	HP8099	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Robot using 5 or more sensors & 2 or more controlling	HP8100	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Static display of a robotic application that moves materials/parts for delivery to an assembly line or inventory area	HP8101	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Static display of a robotic application that welds materials or assembles parts for a product	HP8102	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Static display of a robotic application that involves working with a hazardous material or safety application	HP8103	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Static display of a robotic application not mentioned above	HP8104	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>

B.E.S.T. Robot Display: must include the robot (may or may not be in working condition), engineering notebook from the contest, photos and/or DVD of the robot in action at actual event.	HP8105	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
F.I.R.S.T. Robot Display: must include the robot (may or may not be in working condition), engineering notebook from the contest, photos and/or DVD of the robot in action at actual event.	HP8106	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
F.T.C. Robot Display: must include the robot (may or may not be in working condition), engineering notebook from the contest, photos and/or DVD of the robot in action at actual event.	HP8107	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
VEX Robot Display (not the TSA NQE VEX event): must include the robot (may or may not be in working condition), engineering notebook from the contest, photos and/or DVD of the robot in action at actual event.	HP8108	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Other robot system application not listed above. The display must include photos and/or DVD of the robot in action at actual event.	HP8109	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
Remote Operated Vehicle Display (Underwater Robotic R.O.V.)	HP8110	<a href="https://texastsarulebook.org/high-school-category-projects/applied-technical-science">https://texastsarulebook.org/high-school-category-projects/applied-technical-science</a>
<b>*In addition to all Manufacturing, Biotechnology, and Architecture &amp; Design Project Classifications</b>		