



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

Program of Study: Renewable Energy

Career Cluster: Science, Technology, Engineering, and Mathematics

Classification of Competitive Event	Name of Event	Classification #	Link
National Qualifying Events	Biotechnology Design		https://tsaweb.org/competitions-programs/tsa/high-school-competitions
	Engineering Design		https://tsaweb.org/competitions-programs/tsa/high-school-competitions
	Senior Solar Sprint		https://tsaweb.org/competitions-programs/tsa/high-school-competitions/2
Unique to Texas On-Site Events	Biotechnology Graphic Solutions	HU316	https://texastsarulebook.org/category/unique-to-texas-events
Unique to Texas Projects <i>Applied Technical Science</i>	ELECTRONICS/ELECTRICAL		
	A schematic diagram of wiring installations, residential or commercial, must include location, local wiring code and proof of compliance with code	HP8012	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
	A display of electrical energy storage device	HP8013	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
	A display of electronic communication devices (radio, TV, telephone, etc)	HP8014	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
	A display of electronic communication systems	HP8015	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
	A display of properties of electrical/electronic components, not semi-conductor	HP8016	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
	A display of properties of electrical/electronic components, semi-conductor	HP8017	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
	A display of applications of electrical robots	HP8018	https://texastsarulebook.org/high-school-category-projects/applied-technical-science

Residential wiring	HP8019	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Residential wiring - a schematic diagram of wiring installations, residential or commercial, must include location, local wiring code and proof of compliance with code	HP8020	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Production of electrical/electronic motor	HP8021	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Production of alarm circuits	HP8022	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Production of audio systems	HP8023	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Production of games/toys	HP8024	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Production of communication device	HP8025	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Production of electrical/electronic testing device	HP8026	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Production of student-made printed circuit boards	HP8027	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Production of logic circuits	HP8028	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A model to display the generation of electrical energy from alternate sources	HP8029	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A model to display the conservation of electrical energy	HP8030	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A model of electrical distribution/transmission	HP8031	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A student fabricated electronic device (non-kit)	HP8032	https://texastsarulebook.org/high-school-category-projects/applied-technical-science

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	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Computer interfacing and/or instrumentation	HP8034	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
ENERGY, POWER, & TRANSPORTATION		https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Solar energy	HP8040	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Power generaiton	HP8041	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Electrical energy	HP8042	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Hydraulics	HP8043	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Pneumatics	HP8044	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display of the application of national safety codes	HP8045	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about fuel resource, exploration, extraction, processing & utilization	HP8046	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about energy safety	HP8047	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display of energy conservation	HP8048	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about the generation of electrical energy from fossil fuels	HP8049	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about the generation of electrical energy from nuclear fuels	HP8050	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about the generation of electrical energy from alternate sources	HP8051	https://texastsarulebook.org/high-school-category-projects/applied-technical-science

A display about the application of energy from alternate sources	HP8052	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about the conversion of electrical energy into power	HP8053	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about distribution of electrical energy	HP8054	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about distribution transmission storage of energy	HP8055	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
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)	HP8056	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display of internal combustion engines to show principle, utilization, restoration & impact	HP8057	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display of external combustion engines to show principle, utilization, restoration & impact	HP8058	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Rebuilt single cylinder engine. List of procedure, bill of parts, and time sheet are required documentation.	HP8059	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
External/internal combustion engines - operation & maintenance	HP8060	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
External/internal combustion engines - operation & maintenance	HP8061	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Transmission device - operational	HP8062	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display of principles, utilization & impact of fluid power systems	HP8063	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display of principles, utilization & impact of mechanical power systems	HP8064	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display of principles, utilization & impact of power systems	HP8065	https://texastsarulebook.org/high-school-category-projects/applied-technical-science

Mechanical/fluid energy power devices - operational & maintenance	HP8066	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about a career in the power/energy field	HP8067	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about a career in the transportation field	HP8068	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about the factors that effect the purchase & use of energy products	HP8069	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about the factors that effect the purchase & use of power products	HP8070	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about the marketing of power, energy, or transportation product or service	HP8071	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about highway transportation	HP8072	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about railway transportation	HP8073	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about air or space transportation	HP8074	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about pipeline transportation	HP8075	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about water transportation	HP8076	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
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	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
A display about the factors that effect the purchase & use of transportation products	HP8078	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
Transportation system - industrial, land, air, sea	HP8079	https://texastsarulebook.org/high-school-category-projects/applied-technical-science
An application of energy or power to solve a problem	HP8080	https://texastsarulebook.org/high-school-category-projects/applied-technical-science