Class Name Here

To be college and career ready, students need to be able to integrate and apply 21st century skills, as well as core academic and technical knowledge. Career and Technical Education programs are aligned with rigorous industry and academic standards. The State of Washington has incorporated the 21st Century Leadership & Employability Skills Standards, developed from *Partnership for 21st Century Skills* organization, within the Career and Technical courses. The 21st Century Skills Standards adopted by the State, focus on creativity, critical thinking, communication and collaboration. These standards are essential to preparing students for complex lives and work environments in our global economy.

Everett Public Schools' Career and Technical Education has developed a program, aligned with the State standards, to provide opportunities for students to be assessed on the 21st Century Skills State Standards. In the Technology Pathway, this is accomplished through assessments recommended by the Office of Superintendent of Public Instruction (OSPI). OSPI has cross-walked resources provided by the student organization, Technology Student Association (TSA), and other recommended assessments. In addition to these resources, students will be assessed using classroom assessments. The TSA Motto represents how TSA activities address the 21st Century Washington State Standards:

> **TSA Motto**: The Technology Student Association fosters personal growth, leadership, and opportunities in technology, innovation, design, and engineering. Members apply and integrate science, technology, engineering and mathematics concepts through co-curricular activities, competitive events and related programs.

The 21st Century Skills Standards, students will be assessed on are grouped into eleven categories. The categories include:

Creativity and Innovation	Flexibility and Adaptability
Critical thinking and Problem Solving	Initiative and Self-direction
Communication and Collaboration	Social and Cross-Cultural Skills
Information Literacy	Productivity and Accountability
Media Literacy	Leadership and Responsibility
Information, Communication and Technology Literacy (ICT)	

The grading scale used for assessing students is as follows:

4 = Exceeds Standard
3 = Meets Standard
2 = Worked toward meeting standard, but did not complete
1 = Made an attempt to meet standard, but did minimal work
0 = Did not attempt to meet Standard

Each student is responsible for tracking and maintaining their score for the 21st Century Skills Standards for the course. Below is a listing of the Standards for the course and what assessments are available for demonstration of meeting or exceeding the standard throughout the semester. There are multiple opportunities for students to demonstrate their skills. It is up to the student to choose the activities that best fit **their** schedule/needs/interest and to collect the signatures DURING or IMMEDIATELY following the assessment.

<div align="center">

Class Name
** LEARNING AND INNOVATION SKILLS **

</div>

Leadership Standard	OSPI Suggested Resources/Activities
Think Creatively 1.A.1 Use a wide range of idea creation techniques (such as brainstorming) 1.A.2 Create new and worthwhile ideas (both incremental and radical concepts) 1.A.3 Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts	Animatronics Architectural Model Biotechnology Design Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Fashion Design Flight Endurance Manufacturing Prototype Music Production On Demand Video Photographic Technology Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Bowl (Written and Oral) Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster

21st Century Template – Technology (TSA)

Work Creatively with Others	Animatronics
1.B.1 Develop, implement and communicate new ideas to others effectively	Architectural Model
	Biotechnology Design
1.B.2 Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work	Chapter Team (Written and Oral)
	Computer-Aided Design (CAD) 3D Engineering
1.B.3 Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas	Construction Renovation
	Debating Technological Issues
1.B.4 View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes	Digital Video Production
	Engineering Design
	Fashion Design
	Manufacturing Prototype
	Music Production
	On Demand Video
	Scientific and technical Visualization (SciVis)
	Structural Engineering
	System Control Technology
	Technology Bowl (Written and Oral)
	Technology Problem Solving
	TSA VEX Robotics Competition
	Video Game Design
	Webmaster
Implement Innovations	Animatronics
1.C.1 Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur	Architectural Model
	Biotechnology Design
	Computer-Aided Design (CAD) 3D Engineering
	Construction Renovation
	Desktop Publishing
	Digital Video Production
	Dragster Design
	Engineering Design
	Fashion Design
	Flight Endurance
	Manufacturing Prototype
	Music Production
	On Demand Video
	Photographic Technology
	Scientific and technical Visualization (SciVis)
	Structural Engineering
	System Control Technology

	Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Reason Effectively 2.A.1 Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation	Animatronics Architectural Model Biotechnology Design Career Comparisons Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Use Systems Thinking 2.B.1 Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems	Animatronics Architectural Model Biotechnology Design

	Computer-Aided Design (CAD) 3D Engineering Construction Renovation Digital Video Production Dragster Design Engineering Design Fashion Design Flight Endurance Manufacturing Prototype Music Production On Demand Video Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Make Judgments and Decisions 2.C.1 Effectively analyze and evaluate evidence, arguments, claims and beliefs 2.C.2 Analyze and evaluate major alternative points of view 2.C.3 Synthesize and make connections between information and arguments 2.C.4 Interpret information and draw conclusions based on the best analysis 2.C.5 Reflect critically on learning experiences and processes	Animatronics Architectural Model Biotechnology Design Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation

	Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Solve Problems 2.D.1 Solve different kinds of non-familiar problems in both conventional and innovative ways 2.D.2 Identify and ask significant questions that clarify various points of view and lead to better solutions	Animatronics Architectural Model Biotechnology Design Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster

Communicate Clearly 3.A.1 Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts 3.A.2 Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions 3.A.3 Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade) 3.A.4 Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact 3.A.5 Communicate effectively in diverse environments (including multi-lingual)	Animatronics Architectural Model Biotechnology Design Career Comparisons Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Bowl (Written and Oral) Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Collaborate with Others 3.B.1 Demonstrate ability to work effectively and respectfully with diverse teams 3.B.2 Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal	Animatronics Architectural Model Biotechnology Design Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation

3.B.3	Assume shared responsibility for collaborative work, and value the individual contributions made by each team member	Debating Technological Issues Digital Video Production Engineering Design Fashion Design Manufacturing Prototype Music Production On Demand Video Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technology Bowl (Written and Oral) Technology Problem Solving TSA VEX Robotics Competition Video Game Design Webmaster

Class Name
** INFORMATION, MEDIA AND TECHNOLOGY SKILLS **

Leadership Standard	OSPI Suggested Resources/Activities
Access and Evaluate Information 4.A.1 Access information efficiently (time) and effectively (sources) 4.A.2 Evaluate information critically and competently	Career Comparisons Debating Technological Issues Essays on Technology Prepared Presentation Technology Problem Solving
Use and Manage Information 4.B.1 Use information accurately and creatively for the issue or problem at hand 4.B.2 Manage the flow of information from a wide variety of sources 4.B.3 Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information	Chapter Team (Written and Oral) Debating Technological Issues Essays on Technology Extemporaneous Presentation Prepared Presentation
Analyze Media 5.A.1 Understand both how and why media messages are constructed,	Digital Video Production Extemporaneous Presentation

and for what purposes 5.A.2 Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors 5.A.3 Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media	Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics
Create Media Products 5.B.1 Understand and utilize the most appropriate media creation tools, characteristics and conventions 5.B.2 Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments	Desktop Publishing Digital Video Production Music Production On Demand Video Photographic Technology Promotional Graphics Webmaster
Apply Technology Effectively 6.A.1 Use technology as a tool to research, organize, evaluate and communicate information 6.A.2 Use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy 6.A.3 Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies	Career Comparisons Debating Technological Issues Desktop Publishing Digital Video Production Essays on Technology Future Technology Teachers On Demand Video Technology Problem Solving

Class Name	
** LIFE AND CAREER SKILLS **	
Leadership Standard	**OSPI Suggested Resources/Activities**
Adapt to Change 7.A.1 Adapt to varied roles, jobs responsibilities, schedules and contexts 7.A.2 Work effectively in a climate of ambiguity and changing priorities	Animatronics Architectural Model Biotechnology Design Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design

	Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Bowl (Written and Oral) Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Be Flexible 7.B.1 Incorporate feedback effectively 7.B.2 Deal positively with praise, setbacks and criticism 7.B.3 Understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments	Animatronics Architectural Model Biotechnology Design Career Comparisons Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers

	Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Bowl (Written and Oral) Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Manage Goals and Time 8.A.1 Set goals with tangible and intangible success criteria 8.A.2 Balance tactical (short-term) and strategic (long-term) goals 8.A.3 Utilize time and manage workload efficiently	Animatronics Architectural Model Biotechnology Design Career Comparisons Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics

	Scientific and technical Visualization (SciVis)
	Structural Engineering
	System Control Technology
	Technical Sketching and Application
	Technology Bowl (Written and Oral)
	Technology Problem Solving
	Transportation Modeling
	TSA VEX Robotics Competition
	Video Game Design
	Webmaster
Work Independently 8.B.1 Monitor, define, prioritize and complete tasks without direct oversight	Animatronics Architectural Model Biotechnology Design Career Comparisons Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Bowl (Written and Oral) Technology Problem Solving

	Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Be Self-directed Learners 8.C.1 Go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise 8.C.2 Demonstrate initiative to advance skill levels towards a professional level 8.C.3 Demonstrate commitment to learning as a lifelong process 8.C.4 Reflect critically on past experiences in order to inform future progress	Animatronics Architectural Model Biotechnology Design Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Bowl (Written and Oral) Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Interact Effectively with Others 9.A.1 Know when it is appropriate to listen and when to speak 9.A.2 Conduct themselves in a respectable, professional manner	Animatronics Architectural Model Biotechnology Design Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering

	Construction Renovation Debating Technological Issues Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Manufacturing Prototype Music Production On Demand Video Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technology Bowl (Written and Oral) Technology Problem Solving TSA VEX Robotics Competition Video Game Design Webmaster
Work Effectively in Diverse Teams 9.B.1 Respect cultural differences and work effectively with people from a range of social and cultural backgrounds 9.B.2 Respond open-mindedly to different ideas and values 9.B.3 Leverage social and cultural differences to create new ideas and increase both innovation and quality of work	Animatronics Architectural Model Biotechnology Design Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Digital Video Production Engineering Design Fashion Design Manufacturing Prototype Music Production On Demand Video Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technology Bowl (Written and Oral) Technology Problem Solving TSA VEX Robotics Competition Video Game Design

	Webmaster
Manage Projects 10.A.1 Set and meet goals, even in the face of obstacles and competing pressures 10.A.2 Prioritize, plan and manage work to achieve the intended result	Animatronics Architectural Model Biotechnology Design Career Comparisons Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Bowl (Written and Oral) Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster

Produce Results
 	
10.B.1 Demonstrate additional attributes associated with producing high quality products including the abilities to:
  ▪ Work positively and ethically
  ▪ Manage time and projects effectively
	Animatronics
	Architectural Model
	Biotechnology Design
	Career Comparisons
	Chapter Team (Written and Oral)

- Multi-task - Participate actively, as well as be reliable and punctual - Present oneself professionally and with proper etiquette - Collaborate and cooperate effectively with teams - Respect and appreciate team diversity - Be accountable for results	Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Desktop Publishing Digital Video Production Dragster Design Engineering Design Essays on Technology Extemporaneous Presentation Fashion Design Flight Endurance Future Technology Teachers Manufacturing Prototype Music Production On Demand Video Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technical Sketching and Application Technology Bowl (Written and Oral) Technology Problem Solving Transportation Modeling TSA VEX Robotics Competition Video Game Design Webmaster
Guide and Lead Others 11.A.1 Use interpersonal and problem-solving skills to influence and guide others toward a goal 11.A.2 Leverage strengths of others to accomplish a common goal 11.A.3 Inspire others to reach their very best via example and selflessness 11.A.4 Demonstrate integrity and ethical behavior in using influence and power	Animatronics Architectural Model Biotechnology Design Chapter Team (Written and Oral) Computer-Aided Design (CAD) 3D Engineering Construction Renovation Debating Technological Issues Digital Video Production Engineering Design Fashion Design Manufacturing Prototype

21st Century Template – Technology (TSA)

	Music Production On Demand Video Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Technology Bowl (Written and Oral) Technology Problem Solving TSA VEX Robotics Competition Video Game Design Webmaster
Be Responsible to Others 11.B.1 Act responsibly with the interests of the larger community in mind	Animatronics Biotechnology Design Debating Technological Issues Digital Video Production Engineering Design Essays on Technology Manufacturing Prototype Music Production Photographic Technology Prepared Presentation Promotional Graphics Scientific and technical Visualization (SciVis) Structural Engineering System Control Technology Video Game Design Webmaster

Descriptions

Animatronics Participants (one team per chapter, one entry per team) demonstrate knowledge of mechanical and control systems by designing, fabricating and controlling an animatronics device that will communicate, entertain, inform, demonstrate and/or illustrate a topic, idea, subject or concept. Sound, lights and a surrounding environment must accompany the device.

Architectural Model Participants (one individual or team per chapter, one entry per individual or team) develop a set of architectural plans and related materials for an annual architectural design challenge and construct an architectural model to accurately depict the design.

Biotechnology Design Participants (three teams per state) select a contemporary biotechnology problem that relates to the current year's published area of focus and demonstrate understanding of it through documented research, the development of a solution, a display, and an effective multimedia presentation. If appropriate, a model or prototype of the solution may be included in the display. Participants may choose to recreate or simulate research that previously has been performed within the scientific community.
The biotechnology area of focus for 2011 is Genetic Engineering.
The biotechnology area of focus for 2012 is Pharmaceutical/Agricultural Chemicals.

Career Comparisons Participants (one individual per chapter) thoroughly research various technology-related careers that are associated with one of the following technology areas: Biotechnology, Communications, Energy and Power, Engineering, Manufacturing, Medical Technology, Technology Education Teaching, Transportation, or Construction. After documenting the research, each student submits a cover letter and resume for the selected career and completes a formal job application. Semifinalists participate in an on-site mock interview.

Chapter Team (Written and Oral) Participants (one team of six members per chapter) take a written parliamentary procedures test in order to proceed to the semifinals. Semifinalist teams perform an opening ceremony, dispose of three items of business, and perform a closing ceremony within a specified time period.

Computer-Aided Design (CAD) 2D, Architecture Participants (two individuals per state) create representations, such as foundation and/or floor plans, and/or elevation drawings, and/or details of architectural ornamentation or cabinetry. Students may be expected to animate a presentation of their entry.

Computer-Aided Design (CAD) 3D, **Engineering** Participants (two individuals per state) create 3D computer model(s) of an engineering or machine object, such as a machine part, tool, device, or manufactured product. Students may be expected to animate a portion of their model.

Construction Renovation Participants (three teams per state) develop a set of presentation boards to include plans, illustrations and finishes for a specified space. The solution must include all applicable construction systems.

Debating Technological Issues Participants (three teams of two members per state) debate against a team/s from another chapter in order to advance to the semifinals. The teams are instructed on site to take either the pro or con side of a topic that is designated annually.

Desktop Publishing Participants (one individual per state, one entry per individual) develop a notebook that includes a tri-fold pamphlet, a three-column newsletter, and a poster. All participants (not just semifinalists) then work to solve an on-site problem that demonstrates their abilities to use the computer to design, edit, and print materials for publication.

Digital Video Production Participants (three teams per state, one entry per team) develop a digital video/film that focuses on the given year's theme. Sound may accompany the film.

Dragster Design Participants (two individuals per chapter, one entry per individual) design, produce working drawings for, and build a CO_2-powered dragster.

Engineering Design Participants (one team of three to five members per chapter, one entry per team) work as part of a team to solve a design problem. Through use of a model/prototype, display, and design notebook, the team explains in detail how it has solved the problem and the solution's impact on society and the environment. Semifinalists demonstrate the problem and solution in a timed presentation.

Essays on Technology Participants (three individuals per state) conduct research in an announced technological area and, using the knowledge and personal insights gained from this research, write a persuasive essay on one subtopic selected from two or three related subtopics designated on site.

Extemporaneous Presentation Participants (three individuals per state) give a three to five minute speech, fifteen minutes after having drawn a card on which a technology or TSA topic for a speech is written.

Fashion Design Participants (one team of two to four members per chapter) research, develop and create garment designs, garment mock-ups, and portfolios that reflect the current year's published theme. Semifinalists participate in an on-site event in which they present their potential garment designs to the judges on a TSA runway.

Flight Endurance Participants (two individuals per chapter, one entry per individual) analyze flight principles with a rubber band-powered model aircraft.

Future Technology Teacher Participants (three individuals per chapter) research and select three accredited colleges or universities that offer technology education or engineering technology teacher preparation as a major. Each participant must write a one page simulated college essay about the wish to become a teacher in either major. Participants also develop and present a lesson plan.

Manufacturing Prototype Participants (one team per chapter) design and manufacture a prototype of a product and provide a description of how the product could be manufactured in a state-of-the-art American manufacturing facility.

Music Production Participants (three teams per state) produce a musical piece that is designed to be played during the national TSA conference opening or closing general sessions.

On Demand Video Participants (one team of two or more students per chapter, one entry per team) write, shoot, and edit a sixty second video during the conference in this on-site event.

Photographic Technology Students (one individual per chapter, one entry per individual) capture images and process photographic and digital prints that depict the current year's published theme. Twelve (12) qualifying semifinalists participate in an on-site event in which they capture digital images and utilize multimedia software to prepare a storyboard/outline and media presentation of newsworthy TSA conference activities and events.
The theme for 2011 is Doors.
The theme for 2012 is Perspectives.

Prepared Presentation Participants (three individuals per state) deliver an oral presentation that includes audio and/or visual enhancement based on the theme for the current year's conference.

Promotional Graphics Participants (two individuals per chapter, one entry each) develop and present a graphic design that can be used to promote participation in TSA competitive events. The design will promote annually-selected competitions from TSA's array of competitive events

Scientific and Technical Visualization (SciVis) Participants (three teams per state) develop a visualization focusing on a subject or topic from one or more of the following areas: science, technology, engineering and mathematics.

Structural Engineering Participants (one team of two members per chapter, one entry per team) work as part of a team, on site with supplied materials, to build a model of a structure that is destructively tested to determine design efficiency.

System Control Technology Participants (one team of three members per state, one entry per team) work as part of a team on site to develop a computer-controlled model-solution to a problem, typically one from an industrial setting. Teams analyze the problem, build a computer-controlled mechanical model, program the model, explain the program and mechanical features of the model-solution, and leave instructions for evaluators to operate the device.

Technical Sketching and Application Participants (two individuals per chapter) complete a written test in order to qualify as semifinalists. Semifinalists must demonstrate their ability to solve on-site engineering graphics problems using standard drafting techniques.

Technology Bowl (Written and Oral) Participants (one team of three members per chapter) complete a written, objective test in order to qualify for oral question/response, head-to-head team competition.

Technology Problem Solving Participants (one team of two members per chapter) use problem solving skills and limited materials to develop a solution to a problem given on site.

Transportation Modeling Participants (one individual per chapter, one entry per individual), using only certain materials and following required specifications, design and produce a CO_2-powered scale model of a vehicle that fits the annual design problem and that takes appearance and performance into consideration.

TSA VEX Robotics Competition Participants (teams of three to six students) engage in a signature head-to-head robotics competition that promotes student understanding and skills in science, technology, engineering, and mathematics (STEM) areas.

Video Game Design Participants (three teams per state) develop an E-rated game that focuses on the subject of their choice. The game should be interesting, exciting, visually appealing and intellectually challenging. The game should have high artistic, educational, and social value. A working, interactive game will be submitted on a DVD for evaluation.

Webmaster Participants (one team of three to five members per chapter) are required to design, build and launch a World Wide Web site that features the school's career and technology education program, the TSA chapter, and the chapter's ability to research topics pertaining to technology. Conference semifinalists participate in an on-site interview to demonstrate the knowledge and expertise gained during the development of the website with an emphasis on Internet and web history, web design (school, chapter and design brief pages), and research about cutting edge advances in technology.