



CTSO Course Alignments: STEM II Application

Below you will find standards for the STEM II Application course aligned with competitive events from appropriate career and technical student organizations (CTSOs). Knowing the aligned events for your organization will allow you to have additional tools for teaching course standards, as well as increase student engagement and preparation in your CTSO activities. The final column recommends potential tools from other CTSO organizations. Even if your students are not participating in these organizations, available rubrics, tools, and materials can also add to the instructional resources at your disposal for best teaching your content.

Important to note: While the aligned activities below can be important tools in teaching course standards, it is important to note that events may not cover a standard in its entirety and should not be the sole instructional strategy used to address a standard.

	STANDARD	ALIGNED TSA COMPETITIVE EVENTS/PROGRAMS	OTHER POTENTIAL CTSO TOOLS & RESOURCES				
1	<p>The Roles of Scientists and Engineers</p> <table border="1"> <thead> <tr> <th>Science Path</th> <th>Engineering Path</th> </tr> </thead> <tbody> <tr> <td>1) Determine the scientist's role in explaining why phenomena occur in the natural world, justified by historical and current science knowledge. Research a known scientist and present in an informative paper, oral presentation, or other format his/her contributions to scientific knowledge. Include an outline of how the scientific inquiry process was used in his/her work. (TN Reading 1, 2, 3, 8, 9; TN Writing 2)</td> <td>1) Determine the engineer's role in developing solutions to design problems that are justified by scientific knowledge. Research a known engineer and present in an informative paper, oral presentation, or other format his/her designs and explain how they influenced technology in his/her field. Include an outline of how the design process was used in his/her work. (TN Reading 1, 2, 3, 8, 9; TN Writing 2)</td> </tr> </tbody> </table>	Science Path	Engineering Path	1) Determine the scientist's role in explaining why phenomena occur in the natural world, justified by historical and current science knowledge. Research a known scientist and present in an informative paper, oral presentation, or other format his/her contributions to scientific knowledge. Include an outline of how the scientific inquiry process was used in his/her work. (TN Reading 1, 2, 3, 8, 9; TN Writing 2)	1) Determine the engineer's role in developing solutions to design problems that are justified by scientific knowledge. Research a known engineer and present in an informative paper, oral presentation, or other format his/her designs and explain how they influenced technology in his/her field. Include an outline of how the design process was used in his/her work. (TN Reading 1, 2, 3, 8, 9; TN Writing 2)	<ul style="list-style-type: none"> TSA: Career Preparation, Prepared Presentation 	<ul style="list-style-type: none"> HOSA: Job Seeking Skills, Researched Persuasive Speaking, Prepared Speaking
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<p>15</p>	<p>Safety Accurately read and interpret safety rules, including but not limited to rules published by the National Science Teachers Association (NSTA), rules pertaining to electrical safety, Occupational Safety and Health Administration (OSHA) guidelines, and state and national code requirements. Be able to distinguish between the rules and explain why certain rules apply. (TN Reading 3, 4, 6)</p>		<p>FFA: Agricultural Mechanics and Technology SkillsUSA: Occupational Health and Safety</p>				
<p>16</p>	<p>Safety Identify and explain the intended use of safety equipment available in the classroom. For example, demonstrate how to properly inspect, use, and maintain safe operating procedures with tools and equipment. Incorporate safety procedures and complete safety test with 100 percent accuracy. (TN Reading 3, 4)</p>		<p>FFA: Agricultural Mechanics and Technology SkillsUSA: Occupational Health and Safety</p>				
<p>ALL</p>	<p>CAN BE USED WITH ALL/MOST STANDARDS</p>	<ul style="list-style-type: none"> • TSA: Engineering Design, Technology Problem Solving 	<ul style="list-style-type: none"> • FCCLA: Illustrated Talk, Career Investigation, Chapter in Review Display, Chapter in Review Portfolio, SkillsUSA: Career Pathways Showcase, Job Skills Demonstration A, Job Skills Demonstration O, Prepared Speech, Extemporaneous Speaking, Chapter Display, Principles of Engineering Technology, Engineering Technology/Design 				