

YEAR AT A GLANCE: 6th Grade Technology/PLTW

(updated Dec 2022)

	<u>UNIT 1</u>	<u>UNIT 2</u>	<u>UNIT 3</u>	<u>UNIT 4</u>	<u>UNIT 5</u>
Title	Design Process	Robotics and Automation			
Unit Length <i>(weeks taught)</i>	5	5			
Performance Task <i>(e.g., Persuasive Essay, DBQ, Nutritional Analysis, etc.)</i>	<p>Explain the relationship between science, technology, engineering and math.</p> <p>Describe engineering and explain how engineers participate in or contribute to the invention and innovation of products.</p> <p>Describe impacts that technology has had on society.</p> <p>Distinguish between invention and innovation.</p> <p>Assemble an engineering notebook and a portfolio.</p>	<p>Describe the purpose of automation and robotics and its effect on society.</p> <p>Summarize ways that robots are used in today's world and the impact of their use on society.</p> <p>Describe positive and negative effects of automation and robotics on humans in terms of safety and economics.</p> <p>Provide examples of STEM careers and the need for these professionals in our society.</p>			

<p>Enduring Understanding (The big ideas, the “why” we include these ideas</p>	<p>Science is the study of the natural world, while technology is the study of how humans develop new products to meet needs and wants.</p> <p>Teams of people can accomplish more than one individual working alone.</p> <p>Technological change is seen through inventions, innovations, and the evolution of technological artifacts, processes, and systems.</p>	<p>Automation is the use of technology to ease human labor or to extend the mental or physical capabilities of humans.</p> <p>Robotics is the specialized field of engineering and computer science that deals with the design, construction, and application of robots.</p> <p>The use of automation and robotics affects humans in various ways, both positively and negatively, including their safety, comfort, choices, and attitudes about a technology’s development and use.</p> <p>Automation and robotics have had an influence on society in the past and present and will influence society in the future.</p> <p>Engineers, designers, and engineering technologists are in high demand for the development of future technology to meet societal needs and wants.</p>			

<p>Essential Questions (What do we want students to think about)</p>	<p>How are our lives impacted by engineers?</p> <p>What is the difference between an invention and innovation?</p> <p>How does the use of technology affect the way that you live?</p>	<p>What limitations do you think should be placed on the use of robots?</p> <p>What type of robot do you think makes the most significant contribution to our lives today and why?</p> <p>What is the greatest concern that should be considered before converting a factory from human workforce to robotic workforce?</p> <p>What impact do you think robots will have on your life in 10 years and in 50 years?</p>			
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