

EWHS Course Scope & Sequence

Course Title	Design & Manufacturing				
Course Overview	Design & Manufacturing is a hands-on course that introduces students to the principles of design, engineering, manufacturing processes, and production systems. Students develop technical skills through precision measurement, technical drawing, safety training, prototyping, quality control, and manufacturing projects that mirror real-world industry practices. Through collaborative, project-based learning, students gain experience in problem-solving, innovation, and the production of products from initial design to final assembly.				
Unit Component	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Title	Introduction and Precision Measurements	Technical Drawing	Safety	Prototypes and Quality Control	Manufacturing Production
Guiding or Essential Questions <i>(if applicable)</i>	Imagine you are a design engineer. How would you incorporate precision measurement techniques throughout the design process to ensure the final product meets the required specifications?	How can technical drawing principles and practices be applied to design and communicate innovative solutions for real-world engineering and architectural challenges?	How can you identify safety hazards and prevent accidents in the workplace?	How can the use of prototypes and quality control processes lead to the development of superior products and innovations in various industries?	What is involved with mass producing products?

<p style="text-align: center;">Topic</p> <p>This should be the overarching theme or big idea. Brief overview of the unit.</p>	<p>Students will be able to design and build scale models using multiple precise measurements.</p>	<p>Students will be able to create a series of instructions for creating a technical drawing utilizing mechanical drafting equipment.</p>	<p>Students will be able to develop and deliver a safety training workshop for middle school students interested in wood and metal technology.</p>	<p>Students will be able to create and test prototypes of their own creation utilizing design elements.</p>	<p>Students will be able to apply their knowledge of manufacturing production to design and create a miniature assembly line for a simple product.</p>
<p style="text-align: center;">Length</p> <p><i>(in weeks)</i></p>					