

Course Guide: Power Standards & Learning Targets

Advanced Manufacturing

Students will select and use manufacturing technologies.	Students will analyze and demonstrate the attributes of design.	Students will analyze and demonstrate the engineering process.	Students will develop abilities to apply the design process.	Students will develop the abilities to use and maintain technological products and systems.
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Learning Target Descriptions

- Level 3 learning targets **demonstrate understanding of foundational and complex knowledge.**
- Level 2 learning targets **demonstrate understanding of foundational knowledge.**

Power Standard:	Learning Target: Students Will ...
Students will select and use manufacturing technologies.	Level 3
	<input type="checkbox"/> Identify different manufacturing technologies and explain their appropriate uses in production.
	<input type="checkbox"/> Select the correct manufacturing technology or tool to complete a specific manufacturing task.
	<input type="checkbox"/> I can evaluate whether the selected manufacturing technology produced the desired outcome and make adjustments if needed.
	Level 2
	<input type="checkbox"/> I can recognize common manufacturing technologies and tools used in production.
	<input type="checkbox"/> I can follow basic safety rules when working with manufacturing equipment.
	<input type="checkbox"/> I can follow step-by-step directions to use a manufacturing technology with teacher guidance.
	<input type="checkbox"/> I can identify the materials, tools, and technologies needed to complete a basic manufacturing task.
<input type="checkbox"/> I can explain why a specific manufacturing technology might be used for a particular product or process with guidance.	
Power Standard:	Learning Target: Students Will ...
Students will analyze and demonstrate the attributes of design.	Level 3
	<input type="checkbox"/> Analyze a design to identify important attributes such as function, materials, strength, efficiency, and appearance.
	<input type="checkbox"/> Explain how specific design features affect how well a product works or performs.



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	<ul style="list-style-type: none"> <input type="checkbox"/> Demonstrate design attributes by creating or modifying a product, model, or prototype that meets given criteria.
	<p>Level 2</p>
	<ul style="list-style-type: none"> <input type="checkbox"/> Recognize common attributes of design such as size, shape, materials, and function.
	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the purpose of a design and what the product is intended to do.
	<ul style="list-style-type: none"> <input type="checkbox"/> Identify design features that affect how a product looks or works.
	<ul style="list-style-type: none"> <input type="checkbox"/> Follow a given design plan or drawing to create a basic model or product with guidance.
	<ul style="list-style-type: none"> <input type="checkbox"/> Compare two designs and point out simple differences in their attributes.
<p>Power Standard:</p>	<p>Learning Target: Students Will ...</p>
<p>Students will analyze and demonstrate the engineering process.</p>	<p>Level 3</p> <ul style="list-style-type: none"> <input type="checkbox"/> Analyze a problem and identify the criteria and constraints needed to develop a solution. <input type="checkbox"/> Apply the steps of the engineering design process to develop and test a solution to a problem. <input type="checkbox"/> Evaluate a prototype or solution and make improvements based on testing results and feedback. <p>Level 2</p> <ul style="list-style-type: none"> <input type="checkbox"/> Identify the basic steps of the engineering design process <input type="checkbox"/> Describe the problem a design is intended to solve. <input type="checkbox"/> Recognize criteria and constraints in a design challenge with guidance. <input type="checkbox"/> Follow a structured process to build or test a simple design solution with teacher support. <input type="checkbox"/> Describe what worked or did not work in a design after testing.
<p>Power Standard:</p>	<p>Learning Target: Students Will ...</p>
<p>Students will develop abilities to apply the design process.</p>	<p>Level 3</p> <ul style="list-style-type: none"> <input type="checkbox"/> Apply the steps of the design process to develop a solution to a given problem. <input type="checkbox"/> Create and test a prototype or model that meets identified design criteria and constraints. <input type="checkbox"/> Revise and improve a design based on testing results, feedback, or identified problems. <p>Level 2</p> <ul style="list-style-type: none"> <input type="checkbox"/> Identify the main steps of the design process.



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	<input type="checkbox"/> Explain the problem that a design is meant to solve.
	<input type="checkbox"/> Identify criteria and constraints for a design challenge with guidance.
	<input type="checkbox"/> Follow a basic design plan or set of instructions to create a model or prototype.
	<input type="checkbox"/> Describe how testing helps improve a design.
Power Standard:	Learning Target: Students Will ...
Students will develop the abilities to use and maintain technological products and systems.	Level 3
	<input type="checkbox"/> Safely operate technological products and systems to complete a task or solve a problem.
	<input type="checkbox"/> Perform basic maintenance and adjustments to keep technological tools or systems working properly.
	<input type="checkbox"/> Evaluate the performance of a technological product or system and identify when maintenance or repair is needed.
	Level 2
	<input type="checkbox"/> Identify common technological products and systems and explain their purpose.
	<input type="checkbox"/> Recognize the basic parts and components of a technological product or system.
	<input type="checkbox"/> Follow instructions to operate a technological product or system with guidance.
	<input type="checkbox"/> Identify basic safety practices when using technological tools or systems.
	<input type="checkbox"/> Describe simple maintenance tasks that help keep technological products working properly.

Notes:

- The number(s) behind the course title indicate the grade(s) the course is offered.
- (L) = Omro Laude Course

