

<b>Woods Two</b>		<b>Grades 9-12</b>	
<b>Standards</b>		<b>Benchmarks</b>	<b>Activities/Examples</b>
2. Students will develop an understanding of the core concepts of technology.	Z	Selecting resources involves trade-offs between competing values, such as availability, cost, desirability, and waste.	When students are selecting wood for their project, they need to be thinking about how much it costs and how much waste is involved depending on the design of their project. This is discussed continuously.
	AA	Requirements involve the identification of the criteria and constraints of a product or system and the determination of how they affect the final design and development.	Students are required to build projects according to blueprints.
3. Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.	G	Technology transfer occurs when a new user applies an existing innovation developed for one purpose in a different function.	Students use linear feet, surface area, and board feet formulas, which have already been learned in math. Measurement is used extensively along with coincidental math.
	J	Technological progress promotes the advancement of science and mathematics.	Students use linear feet, surface area, and board feet formulas, which have already been learned in math. Measurement is used extensively along with coincidental math.
5. Students will develop an understanding of the effects of technology on the environment.	J	The alignment of technological processes with natural processes maximizes performance and reduces negative impacts on the environment.	The class discusses why we use the woods that we do (don't use mahogany because it is from the rain forest). Also, we recycle our wood scraps and properly dispose of varnishes, lacquers and finishes.
6. Students will develop an understanding of the role of society in the development and use of technology.	I	The decision whether to develop a technology is influenced by societal opinions and demands, in addition to corporate cultures.	The class discusses why jigs and fixtures are made and why some machines have been invented (demand). The design process also is driven by societal demands.
7. Students will develop an understanding of the influence of technology on history.	G	Most technological development has been evolutionary, the result of a series of refinements to a basic invention.	The evolution of tools and machines - used to cut wood with a handsaw and now we use power equipment.
8. Students will develop an understanding of the attributes of design.	H	The design process includes defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, and communicating processes and results.	Students are required to build a cabinet from a set of blueprints/drawings. The plan allows significant individual design freedom as long as constraints are met.

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	J	Established design principles are used to evaluate existing designs, to collect data, and to guide the design process.	Students compare and contrast design ideas with each other and with examples.
	K	Requirements of a design, such as criteria, constraints, and efficiency, sometimes compete with each other.	Students must design their projects while balancing cost, time, constraints, requirements and abilities.
9. Students will develop an understanding of engineering design.	J	Engineering design is influenced by personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly.	Students' designs are influenced by what inspires them and what their interests are.
10. Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.	L	Many technological problems require a multidisciplinary approach.	Most students encounter problems that they need to think through and solve.
11. Students will develop the abilities to apply the design process.	N	Identify criteria and constraints and determine how these will affect the design process.	Students are given constraints and need to take them into consideration when designing their cabinet.
12. Students will develop the abilities to use and maintain technological products and systems.	L	Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques.	Machine usage and project processes are demonstrated verbally and given in writing. Students are required to re-demonstrate and pass written safety tests.
	N	Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision.	Machine usage and project processes are demonstrated verbally and given in writing. Students are required to re-demonstrate and pass written safety tests.
	O	Operate systems so that they function in the way they were designed.	Machine usage and project processes are demonstrated verbally and given in writing. Students are required to re-demonstrate and pass written safety tests.
	P	Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.	Students use a CNC machine for engraving images onto their projects. They also use calculators to calculate board feet and materials used.

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17. Students will develop an understanding of and be able to select and use information and communication technologies.	Q	Technological knowledge and processes are communicated using symbols, measurement, conventions, icons, graphic images, and languages that incorporate a variety of visual, auditory, and tactile stimuli.	Many machines are used to communicate their ideas on wood. Could be via an icon, symbol or words/lettering.
19. Students will develop an understanding of and be able to select and use manufacturing technologies.	L	Servicing keeps products in good operating condition.	Students learn quickly that equipment needs to be sharpened, replaced, updated, cleaned and/or serviced routinely.
	M	Materials have different qualities and may be classified as natural, synthetic, or mixed.	Students discuss different kinds of wood, different kinds of glues, wood fillers, varnishes and lacquers.