

| Woods Two | | Grades 9-12 | |
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| Standards | | Benchmarks | Activities/Examples |
| 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 multiple times. |
| | 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 have plans. |
| 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 the linear feet, surface area, and board feet formulas, which they should have already learned in math. Also, go over how to measure with a tape measure. |
| | J | Technological progress promotes the advancement of science and mathematics. | Students use the linear feet, surface area, and board feet formulas, which they should have already learned in math. Also, go over how to measure with a tape measure. |
| 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. | Talk about why we use the woods that we do (don't use mahogany because it's from the rain forest). Also, we recycle our wood scraps and dispose of varnishes and lacquers properly. |
| 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. | Discuss why jigs and fixtures are made and why some machines have been invented (Demand). |
| 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 a table saw. |
| 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. | Designing their mirror; problem – they need a design for a mirror; brainstorm – show them templates; researching and generating ideas – at least three designs; identifying criteria and specific constraints – need at least 1 ½” on either side of mirror, minimum size 6x10, maximum size 18x24, would rather it not be circle or square (too difficult); creating or making it. |

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| | J | Established design principles are used to evaluate existing designs, to collect data, and to guide the design process. | The students are constantly checking with the teacher to make sure they are on the right track with their designs. |
| | K | Requirements of a design, such as criteria, constraints, and efficiency, sometimes compete with each other. | Students will come up with a design that they want, but then something usually prevents them from doing it the way that they specifically want to; so then they brainstorm some more. |
| 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. | The students designs are influenced by what inspires them and what they are interested in. |
| 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. | Many students come across problems and they need to think about how they can be solved. |
| 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 know their constraints and need to take them into consideration while designing their mirror and any other projects they build in the class. |
| 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. | Demonstrate all machines necessary for the completion of their projects and quiz them on it. |
| | N | Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision. | Demonstrate all machines necessary for the completion of their projects and quiz them on it. |
| | O | Operate systems so that they function in the way they were designed. | Demonstrate all machines necessary for the completion of their projects and quiz them on it. |
| | P | Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate. | Use the CNC machine for routing images onto their projects. Also, use calculators to calculate board feet and shop bills. |
| 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. | The CNC machine is used to communicate their ideas on wood. Could be an icon or could be words. |

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| 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 blades need to be changed and sanding belts and discs need to be cleaned and changed. |
| | M | Materials have different qualities and may be classified as natural, synthetic, or mixed. | Talk about the different kinds of wood, and different kinds of glues, wood fillers, varnishes, and lacquers. |