

HILLSBOROUGH TOWNSHIP SCHOOL DISTRICT

HILLSBOROUGH HIGH SCHOOL

APPLIED TECHNOLOGY CURRICULUM

WOOD TECHNOLOGY I

AUGUST 2020

This curriculum was approved by the Hillsborough Township
Public Schools Board of Education on September 21, 2020.

Wood Technology I

Grades 9-12

Course Overview

In Wood Technology I, the students learn about woodworking hand tools, measuring/layout tools, and are introduced to stationary woodworking machines and portable power tools. Students will be instructed on how to use these tools and machines safely to create solid wood projects they can be proud of. Areas of study will include safety, machines, measuring, fasteners, methods of joinery, and finishing. The purpose of these projects will be to develop problem-solving skills and instill patience and pride in the student.

Some of the woodworking machines that will be explored are the miter saw, band saw, radial arm saw, surface sander, drill press, table saw, router table, and jointer/planer. Hand tools such as mallets, chisels, marking gauge, and rulers will be widely used. Popular projects include decorative boxes, cutting boards, joiners mallet, marking gauge, and various other antique reproductions. Throughout the course, safety procedures and demonstrations will be constantly reinforced and evaluated.

2020 HTPS Applied Technology Curriculum Map – Wood Technology I

Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Wood: The Raw Materials, An Introduction	2-4 days After initial instruction, the subject matter will be incorporated into the daily lessons/work.	8.2.2.ETW.2: Identify the natural resources needed to create a product. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the raw material I am working with (wood)?	The diversity of the material and its physical properties offers both a challenge and a source of inspiration to the emerging woodworker	How trees grow, structure, photosynthesis, heartwood and sap wood, growth rings. Converting wood milling, drying, moisture content and stability. Grading natural characteristics, defects, grain, figure, texture, durability	Formative: Several tree log cross sections will be shown to illustrate growth rings, sapwood, heartwood, and demonstrate how to determine age and growth cycles. Summative: Students will watch a video on the milling of lumber. A moisture meter will be used on various boards exposed to different environmental conditions to show the effects of moisture on lumber. Students will be able to predict moisture content of lumber.	8.2.2.ETW.2: Identify the natural resources needed to create a product. Geometric Measurement and Dimension G-GMD A. Explain volume formulas and use them to solve problems	9.2.8.CAP.10: Evaluate how careers have evolved regionally, nationally, and globally. 8.2.5.ITH.4: Describe a technology/tool that has made the way people live easier or has led to a new business or career

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Wood: The Raw materials. Pt. 1	2- 4 days After Initial instruction the subject matter will be incorporated into the daily lessons/ work.	8.2.2.ETW.2: Identify the natural resources needed to create a product. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the raw material I am working with, wood.	The diversity of the material and its physical properties offers both a challenge and a source of inspiration to the emerging woodworker	Gain familiarity with these softwoods and their prime uses: Coniferous Gymnospermae Needle-shaped leaves Waney edge Color changes Cedar Fir Pine Redwood Spruce Gain familiarity with these hardwoods and their prime uses: Deciduous Angiospermae Broadleaf Color changes Ash Beech Birch Boxwood Cherry Mahogany Maple	Formative: Students will be given samples of wood boards as well as thin cross section cuts of tree sections to identify various colors, textures and imperfections. A brief description will be written by students' observations and preferences describing the type of wood and its unique features. Students will bring in three leaves/needles from trees in their area with their identification labels. Using some web sites cited by the instructor students will search for other similar and related sites which will aid them in writing a short description of their finding to share	PS2: M K-2-ETS1-Motion and Stability: Forces and Interactions	9.2.8.CAP.10: Evaluate how careers have evolved regionally, nationally, and globally. 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option

					<p>Oak Walnut Poplar</p> <p>Understand how conservation needs to be considered by woodworkers.</p>	<p>with the class.</p> <p>Summative: Students will research online two websites dealing with tree conservation and be prepared to explain the area in which this is to be done and how it relates to woodworkers. A written/verbal quiz will follow the end of the Raw Material unit.</p>	
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<p>Wood: The Raw Materials. Pt.2</p>	<p>1-3 days</p> <p>After Initial instruction, the subject matter will be incorporated into the daily lessons/work</p>	<p>8.2.2.ETW.2: Identify the natural resources needed to create a product.</p> <p>8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process</p>	<p>What do I need to know about the raw material I am working with: wood?</p>	<p>The diversity of the material and its physical properties offers both a challenge and a source of inspiration to the emerging woodworker</p>	<p>Work with color to better understand color variation of wood types, staining for color, and expected color change with grain types.</p> <p>Gain familiarity with these man-made boards: Plywood-appearance, grading, interior, exterior, marine, structural characteristics of:</p> <p>Particleboards Chipboards Layers Fiberboards Hardboards Density</p>	<p>Formative: Sections of different species (colors) of wood sections will be handed out to students to analyze their characteristics.</p> <p>Images of projects using variations in color will be shown.</p> <p>Summative: Students will demonstrate recognition of wood color treatment by writing a descriptive critique of images of two sample projects handed out by the instructor.</p> <p>Small pieces of plywood, particleboard and fiberboard will be handed out to students to</p>	<p>PS2: M K-2-ETS1-Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects</p>	<p>9.2.8.CAP.10: Evaluate how careers have evolved regionally, nationally, and globally.</p>

						<p>identify type, use, and anticipated color implications.</p> <p>Students will have a week to virtually or personally visit a local lumber yard to locate, identify, price and record dimensions of the various man-made boards studied. Cell phone photos will be taken of the lumber and shared with the class.</p>		
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Designing in Wood	3-5 days After initial instruction, the subject matter will be incorporated into the daily lessons/work	9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.	What does a designer need to consider in order to create an item with sound construction, while keeping in mind aesthetes and function	Designing in 3D requires the ability to visualize how an object will eventually look before you make it.	Understanding of the design process Functional/Structural Requirements, stability, wood appearance and movement, sketching methods orthographic project dimensioning, scale drawings, and cut lists	Formative: Students will be presented with a verbal description of a wooden object and be asked to sketch what they imagine the object to look like. A wooden object will be shown to the class and they will sketch the object in the three dimensions of an orthographic representation. Summative: Students will sketch and label an orthographic drawing. Students will be able to create an orthographic project of their choice from sample woodworking projects.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects ETS1: Engineering Design ETS1.A: Defining and Delimiting an Engineering Problem	9.2.12.CAP.6: Identify transferable skills in career choices and design alternative career plans based on those skills

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Math and the Golden Ratio in Wood-working	2 days After Initial instruction, the subject matter will be incorporated into the daily lessons/work	8.2.5.ITH.4: Describe a technology/tool that has made the way people live easier or has led to a new business or career	What does the historical reference to The Golden Ratio mean and how can it apply to woodworking design?	Throughout history mathematicians as well as artists have pondered the mysterious relationship between numbers and the nature of the golden ratio. At the heart of that is phi (1.6180339887).	Prelude to a number: Pythagoras Euclid Everyday examples of: Pi and Phi Fruit Art Aesthetics Architecture Nature How to construct a Golden Rectangle: Effectively use these tools: Compass Protractor Straight edge Ruler dividers	Formative: Photos of art and architecture utilizing the Golden Ratio will be shown. Students will be given construction tools and will construct Golden Rectangles of various sizes. Summative: Students, working in teams, with the task of researching on the internet and printing out three additional examples of art and architecture, which use the Golden Rectangle.	ETS1.C: Optimizing the Design Solution G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects	9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option

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Shop Safety	3-4 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.5.ITH.2: Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have. 8.2.2.ITH.2: Explain the purpose of a product and its value. 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.	What safe practices are needed within the woodshop environment to do accurate work and to avoid injury?	Safety education begins in the schools but is carried on throughout life in the workplace and at home.	Students will become familiar with these areas and appropriate safety tips for each within the shop: Lighting Workspace Ventilation Storage Shop Discipline Work zones Kill switches Protective equipment Safety Glasses Ear Plugs Face Shield Goggles Guards Push Sticks Aprons Attire	Formative: Students will be taken on a tour of the various woodshop stations and identify machines, marking tape, work zones, panic switches and guards will be identified. Summative: Students will go to the eye station and put on safety eyewear immediately upon entering the room. Students will be presented with Safety regulations form to be signed and initialed. Students will be given a practicum test regarding safety measures.	8.2.5.NT.4: Identify how improvement in the understanding of materials science impacts technologies. 8.2.2.ITH.3: Identify how technology impacts or improves life. 8.2.2.ITH.4: Identify how various tools reduce work and improve daily tasks	9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential 9.2.12.CAP.5: Assess and modify a personal plan to support current interests

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Hand Tools. Pt.1	3-4 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the safe use of woodworking hand tools to build various wood projects?	At a time when more and more woodworkers are turning to machine tools for convenience or greater accuracy, someone coming fresh to woodwork might assume hand tools were relics left over from the antique past. On the contrary, a competent woodworker can often finish a project by hand in the time it takes to set up a machine for the same purpose. In addition, working by hand gives a feel for materials that cannot be derived from operating a machine.	Use the following measuring and marking tools accurately: Try square Ruler Marking gauge Winding boards Miter square Marking knife Tape measure	Formative: Through instructor observation students will show proficiency in using a ruler to measure a series of lines to an accuracy of 1/16 of an inch. A quiz testing and enforcing the skills learned in measuring with a ruler. Students will use a marking gauge for the layout of various woodworking joints Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income.

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Hand Tools. Pt.2	2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the safe use of woodworking hand tools to build various wood projects?	At a time when more and more woodworkers are turning to machine tools for convenience or greater accuracy, someone coming fresh to woodwork might assume hand tools were relics left over from the antique past. On the contrary, a competent woodworker can often finish a project by hand in the time it takes to set up a machine for the same purpose. In addition, working by hand gives a feel for materials that cannot be derived from operating a machine.	Students will show how to use these hand tools safely and accurately at a novice level: Ripsaw Crosscut saw Cabinet saw Coping saw Bucksaw Dovetail saw Compass saw Japanese saws	Formative: Students will be able to make a series of straight cuts in a practice board to show proficiency in saw control. Students will demonstrate their ability to choose the correct saw for various cutting operations. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income.

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Hand Tools. Pt 3	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the safe use of woodworking hand tools to build various wood projects?	At a time when more and more woodworkers are turning to machine tools for convenience or greater accuracy, someone coming fresh to woodwork might assume hand tools were relics left over from the antique past. On the contrary, a competent woodworker can often finish a project by hand in the time it takes to set up a machine for the same purpose. In addition, working by hand gives a feel for materials that cannot be derived from operating a machine.	Students will show how to use these hand planes safely and accurately at a novice level: Block plane Bench plane Smoothing plane Jointer plane Rabbit plane Shoulder plane Router plane Molding plane	Formative: Students will successfully plane the rough edge of a board with a plane until the edge is smooth, straight, and at a ninety-degree angle to the board face. Summative: Students will watch a demonstration on using hand planes and be able to correctly answer the questions on a quiz. Students will be able to select the correct plane for various woodworking situations and explain the reason for their choice of plane. Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income.

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Hand Tools. Pt. 4	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the safe use of woodworking hand tools to build various wood projects?	At a time when more and more woodworkers are turning to machine tools for convenience or greater accuracy, someone coming fresh to woodwork might assume hand tools were relics left over from the antique past. On the contrary, a competent woodworker can often finish a project by hand in the time it takes to set up a machine for the same purpose. In addition, working by hand gives a feel for materials that cannot be derived from operating a machine.	Students will show how to use these chisels and gouges safely and accurately at a novice level: Firmer chisel Bevel-edged chisel Paring chisel Skew chisel Mortise chisel Chisel tang Storing and using chisels Hand and mallet work with chisels Gouge profiles Sharpening Types of steel blades Safety	Formative: Students will use a chisel to make a practice rabbet and dado on a small piece of wood supplied by the instructor. Students work will be observed. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income.

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Hand Tools. Pt. 5	1-2 days After the initial instruction , the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the safe use of woodworking hand tools to build various wood projects?	At a time when more and more woodworkers are turning to machine tools for convenience or greater accuracy, someone coming fresh to woodwork might assume hand tools were relics left over from the antique past. On the contrary, a competent woodworker can often finish a project by hand in the time it takes to set up a machine for the same purpose. In addition, working by hand gives a feel for materials that cannot be derived from operating a machine.	Students will show how to use these wood rasps and files safely and accurately at a novice level: File cuts File shapes File cards Needle files Riffler files Cleaning and maintaining files File tang Tightening file handles Safety	Formative: Many shop files will be utilized at some point during the woodworking course. Students will observe a demonstration on end grain, long grain filing and shaping. Student will then use scrap lumber to demonstrate skill and knowledge of end grain, long grain filing. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income.

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Hand Tools. Pt.6	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the safe use of woodworking hand tools to build various wood projects?	At a time when more and more woodworkers are turning to machine tools for convenience or greater accuracy, someone coming fresh to woodwork might assume hand tools were relics left over from the antique past. On the contrary, a competent woodworker can often finish a project by hand in the time it takes to set up a machine for the same purpose. In addition, working by hand gives a feel for materials that cannot be derived from operating a machine.	Students will show how to use these hammers and mallets safely and accurately at a novice level: Claw hammer Cross-peen hammer Pin hammer Wood mallet Rawhide mallet Nail set	Formative: Students will use a mallet to make a practice rabbet and dado on a small piece of wood supplied by the instructor. Students work will be observed. Students will have a small scrap piece of wood into which they will hammer a nail and then remove the nail. The instructor will observe and make suggestions as needed. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2otion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income.

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Hand Tools. Pt. 7	3-4 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the safe use of woodworking hand tools to build various wood projects?	At a time when more and more woodworkers are turning to machine tools for convenience or greater accuracy, someone coming fresh to woodwork might assume hand tools were relics left over from the antique past. On the contrary, a competent woodworker can often finish a project by hand in the time it takes to set up a machine for the same purpose. In addition, working by hand gives a feel for materials that cannot be derived from operating a machine.	Students will show how to use these clamps safely and accurately at a novice level: Bar clamp Fast-action bar clamp Parallel clamp Miter clamp Quick-grip clamp C—clamp Strap clamp	Formative: Students will be shown a demonstration by the instructor on clamping for various purposes and with various clamps. . They will in turn be able to repeat the procedure of setting up to clamp pieces of wood to be glued using the appropriate clamp. Summative: Students will be required to glue their projects and the instructor will observe that the operation is performed safely and accurately. The process will be observed and graded by the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2otion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income.

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Hand Tools. Pt. 8	3-4 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process	What do I need to know about the safe use of woodworking hand tools to build various wood projects?	At a time when more and more woodworkers are turning to machine tools for convenience or greater accuracy, someone coming fresh to woodwork might assume hand tools were relics left over from the antique past. On the contrary, a competent woodworker can often finish a project by hand in the time it takes to set up a machine for the same purpose. In addition, working by hand gives a feel for materials that cannot be derived from operating a machine.	Students will show how to use these screwdrivers accurately at a novice level: Cabinet screwdriver Fluted-handled screwdriver Crosshead screwdriver Ratchet screwdriver Slotted style Phillips head style Pilot hole Counter sink	Formative: The instructor will observe student’s ability to use a hand screwdriver to put a screw into a piece of wood without stripping the screw head, snapping the screw shank, or splitting the wood. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2otion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income.

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Power Tools. Pt. 1	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate personal protective equipment to guard	Students will show how to use these power tools safely and accurately at a novice level: Power Drills Handheld Cordless Dremmel Jigsaws making the following cuts: Reciprocal Plunge Curved	Formative: Students will be required to attach and remove a drill bit and a driver bit from a corded and cordless power drill. The instructor will observe and advise as needed. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

				against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.				
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Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Power Tools. Pt. 2	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate	Students will show how to use these power tools safely and accurately at a novice level: Routers: Fixed routers Plunge routers Students will be familiar with motor size and speed Collet capacity on each router type. Students will select router bits to perform the following cuts: Rabbeting cuts Dado cuts Grooves Circles Template Freehand Molding Edge- forming Fence Table inserts	Formative: Students will observe a router table demonstration and will be able to safely and successfully show the instructor they can attach and remove a router bit, turn on the router, adjust the fence and select the correct router table inserts. Students will successfully route a contour design in a strip of wood used in their class project. The instructor will observe and advise Summative: Students will use the tool in its appropriate manner to construct their wood working	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

				personal protective equipment to guard against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.		project under the evaluation of the instructor.		
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2020 HTPS Applied Technology Curriculum Map – Wood Technology I

Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Power Tools. Pt. 3	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate personal protective equipment to guard	Students will show how to use these power tools safely and accurately at a novice level: Belt sanders Orbital sanders Disc sanders Bench mount Sanding sheets Sanding pads Grit Selection	Formative: Students will observe a sanding demonstration and will be able to show the instructor safely and successfully they can attach and remove a sheet and sending disc on the sander. Students will explain the use of various grits in various applications. (IE. Hardwood vs. softwood) Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

				against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.				
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2020 HTPS Applied Technology Curriculum Map – Wood Technology I

Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Power Tools, Pt. 4	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate personal protective	Students will show how to use these Table Saw components safely and accurately at a novice level: Blade diameter Saw blade angle Table insert Riving knife or splitter Blade guard Rip fence Miter fence Rip cuts Crosscuts Blade selection	Formative: Students will be able to identify the principal parts of the table saw: guard, splitter, fence, on/off switch. The instructor will observe and advise. A table saw may be utilized in several operations during the woodworking course. The instructor, however, will perform these operations at this level of the student's woodworking skill and the student will observe the process Summative: Students will assist in the use of use tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

			<p>equipment to guard against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.</p>				
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2020 HTPS Applied Technology Curriculum Map – Wood Technology I

Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Power Tools, Pt. 5	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate personal protective	Students will show how to use these Radial Arm Miter Saw components safely and accurately at a novice level: Depth of cut Blade selection Anti- kickback assembly Crosscut capacity Rip capacity Blade guard Riving knife Cutting joints on the Radial- arm saw	Formative: Students will be shown a demonstration by the instructor. They will in turn be able to repeat the procedure of setting up a piece of wood to be cut, setting the angle of cut, utilize the locking system and safety identify features of the saw. The instructor will observe each individual student and advise. Students will be required to make a ninety degree cut at a specified length on a board safely and accurately. The cut will be observed and graded by the instructor	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

			<p>equipment to guard against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.</p>		<p>Summative:</p> <p>Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.</p>		
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2020 HTPS Applied Technology Curriculum Map – Wood Technology I

Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Power Tools, Pt. 6	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate	Students will show how to use these Band Saw components safely and accurately at a novice level: Wheels Guides Tensions Tracking Guards Depth of cut Width of Blade Guides Jigs	Formative: Students will observe a demonstration by the instructor of various cuts on the band saw. Students will be able to identify the guard, fence, guides, blade tensioner, locks and on/off switch. A quiz on saw parts and safety will follow. The band saw may be used by the student at the instructors discretion depending on the woodworking process, the student's project needs and skill. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

				personal protective equipment to guard against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.		evaluation of the instructor.		
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2020 HTPS Applied Technology Curriculum Map – Wood Technology I

Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Power Tools, Pt. 7	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate personal protective equipment to guard	Students will show how to use these Planer components safely and accurately at a novice level: Jointer and planer knives Feed rollers Maximum machining width Depth of cut Fence Guards Direction of feed Bevel Taper	Formative: Students observe a demonstration by the instructor of various uses of the planer. Students will be able to identify the infeed and outfeed tables, the thickness setting and the safe method of feeding the work. A quiz on planer parts and procedures and safety test will follow. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

				against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.				
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2020 HTPS Applied Technology Curriculum Map – Wood Technology I

Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Unit Power Tools, Pt. 8	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate personal protective equipment to guard	Students will show how to use these Drill Press components safely and accurately at a novice level: Electric motor Worktable Depth gauge Chuck holding the work securely Drill bits Drill speed	Formative: Students will be shown a demonstration by the instructor. They will in turn be able to repeat the procedure of setting up a piece of wood to be drilled, mounting the drill bit in the chuck, setting the depth stop, securing the work and safely drilling a hole of a specified diameter. The instructor will observe each individual student and provide immediate feedback Students will be required to drill a ninety-degree hole in their project at various locations. The instructor will observe that the operation is done	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

				against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.		safely and accurately Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.		
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Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Power Tools, Pt. 9	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate personal protective equipment to guard	Students will show how to use these Wood Lathe components safely and accurately at a novice level: Lathe size Headstock Tailstock Speed control Tool rest Turning between centers Faceplate turning	Formative: Students will observe a demonstration by the instructor of various uses and techniques on the wood lathe. Students will be able to identify the headstock, tailstock, tool rest and safety measures in operation of the machine. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

				against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.				
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Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Power Tools, Pt. 10	1-2 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions	What do I need to know about the safe and practical use of power woodworking tools to build various woodworking projects?	Power tools are a part of a modern workshop. They allow the woodworker to easily perform tasks that otherwise would be difficult and time consuming. However, these simple tools can be hazardous, and have the potential for causing severe injuries when used or maintained improperly. Special attention toward power tool safety is necessary in order to reduce or eliminate these hazards. Students using power tools are exposed to hazards of falling, flying, abrasive or splashing materials, as well as harmful dusts, fumes, mists, vapors or gases. Students must be wear appropriate personal protective	Students will show how to use these Scroll Saw components safely and accurately at a novice level: Saw table Throat Depth of cut Length of stroke Blade tension Blade guard Hold downs Types of cuts cut	Formative: Students will be shown a demonstration by the instructor. They will in turn be able to repeat the procedure of setting up a piece of wood to be sawed, mounting the blade in the machine, setting the guard and safely sawing a compound curved line in a piece of wood. The instructor will observe each individual student and advise. Summative: Students will be required to cut decorative parts for their project on the scroll saw. The instructor will observe that the operation is done safely and accurately Students will use the	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. I3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

				equipment to guard against injury. All electrical connections for tools must be suitable for the type of tool and the working conditions. The student will be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.		tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.		
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Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Joinery Pt. 1	2-3 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions 8.2.2.ETW.1: Classify products as resulting from nature or produced as a result of technology. 8.2.2.ETW.2: Identify the natural resources needed to create a product.	How do I join pieces of a project which will be strong, functional, and aesthetically pleasing	Regarded as the quintessential skill of every woodworker, joinery. A measure of a woodworker is the ability and the refined skill to determine the most steadfast joint, measure, cut and assemble pieces of timber in a fashion that will be timeless.	Students will show how to create these joints safely and accurately at a novice level: Butt joints: Square ended Mitered Reinforced Splined Loose Rabbit joints: Lap Joints: Corner mitered oblique Mortise and Tenon joints: Through Wedged Stubbed Haunched	Formative: Joint project 1: Students will assemble the tools needed to layout and cut a single piece of practice wood joined on each end with smaller pieces of wood using a butt joint and assembled with glue. The instructor will observe each team and advise. Joint project 2: Students will assemble the tools needed to layout and cut two rabbit joints (one each) on a single piece of practice wood. They will then join two smaller pieces of wood to each rabbit joint using white glue. Joint project 3:	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

						<p>Students will assemble the tools needed to layout and cut two pieces of wood forming edge-to-edge joints, which will be joined together with white glue.</p> <p>Summative:</p> <p>Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.</p>		
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Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Joinery Pt. 2	2-3 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions 8.2.2.ETW.1: Classify products as resulting from nature or produced as a result of technology. 8.2.2.ETW.2: Identify the natural resources needed to create a product.	How do I join pieces of a project which will be strong, functional, and aesthetically pleasing	Regarded as the quintessential skill of every woodworker, joinery. A measure of a woodworker is the ability and the refined skill to determine the most steadfast joint, measure, cut and assemble pieces of timber in a fashion that will be timeless.	Students will show how to create these joints safely and accurately at a novice level: <i>Housing joints:</i> Through Stopped <i>Edge to Edge joints:</i> Butt Tongue and groove <i>Dovetail joint:</i> Through Blind	Formative: Joint project: Students will assemble the tools needed to layout and cut a single dovetail joint, then dry assemble. The instructor will observe each team and advise. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions Geometric Measurement and Dimension G-GMD 4.3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

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Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Joinery Pt. 3	2-3 days After the initial instruction, the subject matter will be incorporated into daily lessons.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions 8.2.2.ETW.1: Classify products as resulting from nature or produced as a result of technology. 8.2.2.ETW.2: Identify the natural resources needed to create a product.	How do I join pieces of a project which will be strong, functional, and aesthetically pleasing	Regarded as the quintessential skill of every woodworker, joinery. A measure of a woodworker is the ability and the refined skill to determine the most steadfast joint, measure, cut and assemble pieces of timber in a fashion that will be timeless.	Students will show how to create these joints safely and accurately at a novice level: <i>Mortise and Tenon Joints:</i> Through Wedged Stubbed Haunched	Formative: Joint project: Students will assemble the tools needed to layout and cut a through mortise and tenor joint, then dry assemble the joint. The instructor will observe each team and advise. Summative: Students will use the tool in its appropriate manner to construct their wood working project under the evaluation of the instructor.	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2otion and Stability: Forces and Interactions	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential

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Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Finishing	<p>2-3 days</p> <p>After the initial instruction, the subject matter will be incorporated into daily lessons.</p>	<p>8.2.2.ITH.1: Identify products that are designed to meet human wants or needs.</p> <p>8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.</p> <p>ETS1.B: Developing Possible Solutions</p> <p>8.2.2.ETW.1: Classify products as resulting from nature or produced as a result of technology.</p> <p>8.2.2.ETW.2: Identify the natural resources.</p>	<p>What do I need to know about the finishing process to make my project both durable and bring out the inherent beauty and figure of the wood.</p>	<p>Finishing is the process of applying a special kind of liquid or paste to the wood surfaces , which then dries into a protective layer. This coating transforms the appearance of the wood, making it look rich and elegant by highlighting its color and figure. Finishes al so protect the wood from dirt and moisture</p>	<p>Students will show how to use these finishing skills safely and accurately at a novice level:</p> <p>Stain: Bleaching Oil based Water based Lacquer Varnish Poly Fuming wood Wax Shellac</p> <p>Applying stain End Grain</p> <p>Hand sanding between coats</p> <p>Dry time</p>	<p>Formative:</p> <p>Joint project:</p> <p>Students will assemble the tools needed to layout and cut a through mortise and tenor joint, then dry assemble the joint. The instructor will observe each team and advise.</p> <p>Summative:</p> <p>Students will use stains and finishes in its appropriate manner to finish their wood working project under the evaluation of the instructor.</p>	<p>Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects</p> <p>PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions</p>	<p>9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving</p> <p>9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential</p>

2020 HTPS Applied Technology Curriculum Map – Wood Technology I

Unit of Study	Pacing	NJ Student Learning Standards	Essential Questions	Enduring Understandings	Learning Targets	Assessment: Formative & Summative	Interdisciplinary Connections	Career Readiness, Life Literacies, & Key Skills Standards
Wood-working Project	2-3 days After the initial instruction, the subject matter will be incorporated into daily lessons for the remainder of the design and build process.	8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. ETS1.B: Developing Possible Solutions 8.2.2.ETW.1: Classify products as resulting from nature or produced as a result of technology. 8.2.2.ETW.2: Identify the natural resources. 8.2.5.ITH.2: Evaluate how well a new tool has met its	What do I need to know about the safe use of woodworking, tools, hand held and stationary machinery, the physical properties of the materials I am working with and a variety of woodworking joints and processes in order to build various wood projects?	This project builds upon the skills learned in previous units and takes the student through the entire furniture-making process, from design to finishing.	The students will complete a woodworking project using these strategies: Safety The Design Process Measuring and Marking Hand cut joinery Refinement of joinery/design Structural integrity Longevity of materials Planes Chisels and gouges Power machinery Sanding	Formative: Students will be assigned or choose a woodworking project to build; they will be shown images of similar types of project. Students will be asked to interpret the examples and range of allowable dimensions and will create their own design, set of design drawings, cut list and calculation for material needed. Students will show their command of the design process by submitting a set of plans to the instructor for review and grading. Summative: Students will work independently to build their project Students will	Geometric Measurement and Dimension G-GMD B. Visualize relationships between two-dimensional and three-dimensional objects PS2: M K-2-ETS1-2 Motion and Stability: Forces and Interactions 8.2.5.NT.4: Identify how improvement in the understanding of materials science impacts technologies Geometric Measurement and Dimension G-GMD B. 3. Apply geometric methods to solve design problems	9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential 9.4.12.CT.3: Enlist input from a variety of stakeholders 9.2.12.CAP.14: Analyze and critique various sources of income and available resources and how they may substitute for earned income

		<p>intended purpose and identify any shortcomings it might have</p> <p>8.2.2.ITH.4: Identify how various tools reduce work and improve daily tasks</p> <p>8.2.8.ED.5: Explain the need for optimization in a design process.</p> <p>8.2.8.ED.6: Analyze how trade-offs can impact the design of a product</p>			<p>Adhesives</p> <p>Finishing</p>	<p>present finished project for critiques, refinement and grading.</p>		
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WEBLIOGRAPHY

None.

ASSOCIATED JOBS LIST BY UNIT

Safety Unit

PPE Sales Representatives and Sales
PPE Manufacturing
Service Technician in Safety Equipment
First Aid Specialist
Marketing Agent for Safety and First aid Equipment
Medical Sales Associate
Product Manager
Product Designer
Equipment Operator
Research and development of Safety Equipment and PPE

Hand Tool Unit

Apprentice Carpenter
Lead Carpenter
Carpenter Foreman
General Construction
Tool Manufacturing
Machinist
Product Developer/Tester
Sales and Marketing

Power Tool Unit

Apprentice Carpenter
Lead Carpenter
Carpenter Foreman
General Construction
Tool Manufacturing
Machinist
Product Developer/Tester
Sales and Marketing

Project Unit

Apprentice Carpenter	Deck Builder
Lead Carpenter	Fine Furniture Construction and Repair
Carpenter Foreman	Designer
General Construction	Millwright
Framing Installer	Shipwright
Rofer	Woodwright
Site Manager	Product Manager
Finish Trim Carpenter	Manufacturing
Cabinet Maker	Small Business Owner/Operator