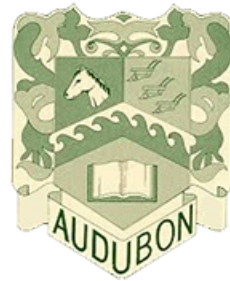


# Audubon Public School District



APSD Woodworking III

Curriculum Guide

Developed by:

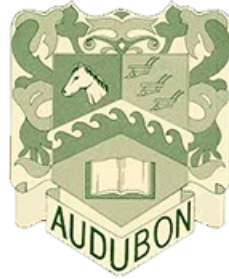
Mr. Dustin Stiles

Mr. Michael Stubbs

August 1, 2022

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## **Course Description**

Wood III is open to 11th and 12th grade students who have successfully completed Wood II with a C average or better and have been recommended by the Wood II instructor. This course is designed for those serious minded students who wish to continue to develop their cabinet making skills. The class will be devoted to the design and construction of one or more advanced level cabinet type projects. Students will also complete a shop improvement project, and do several problem solving assignments. Students are required to purchase their own materials for the cabinet project. Cost depends on size of project and material choice.

The current New Jersey standards do not include the topics involved with this class. It has been decided to include the International Technology and Engineering Educators Association (ITTEA) standards. This set of international standards has a better fit for the Audubon technology classes.

## Overview / Progressions

Overview	Standards / Performance Expectations	Unit Focus
<p style="text-align: center;"><b>Unit 1</b> Shop Review</p>	<ul style="list-style-type: none"> <li>● ITEEA 12.M-O</li> <li>● ITEEA 19.L-Q</li> <li>● ITEEA 20.K-N</li> </ul>	<ul style="list-style-type: none"> <li>● Safety Review</li> <li>● Machine Review</li> </ul>
<p style="text-align: center;"><b>Unit 2</b> Machine Maintenance</p>	<ul style="list-style-type: none"> <li>● ITEEA 12.M-O</li> <li>● ITEEA 19.L-Q</li> <li>● ITEEA 20.K-N</li> </ul>	<ul style="list-style-type: none"> <li>● Checking all parts of the machine</li> </ul>
<p style="text-align: center;"><b>Unit 3</b> Project Design</p>	<ul style="list-style-type: none"> <li>● ITEEA 12.M-O</li> <li>● ITEEA 19.L-Q</li> <li>● ITEEA 20.K-N</li> </ul>	<ul style="list-style-type: none"> <li>● Choosing a project</li> <li>● Choosing appropriate materials</li> </ul>
<p style="text-align: center;"><b>Unit 4</b> Project Work</p>	<ul style="list-style-type: none"> <li>● ITEEA 12.M-O</li> <li>● ITEEA 19.L-Q</li> <li>● ITEEA 20.K-N</li> </ul>	<ul style="list-style-type: none"> <li>● Design Process</li> <li>● Student Project</li> </ul>

<b>Subject: Wood III</b>	<b>Grade: 11-12</b>	<b>Unit: 1 Shop Review</b>	<b>4 Weeks</b>
<b>Standard / Performance Expectation</b>	<b>Critical Knowledge &amp; Skills &amp; Associated Activity</b>		
<p>ITEEA 12.L - Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques.</p> <p>ITEEA 12.M - Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it.</p> <p>ITEEA 12.N - Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision.</p> <p>ITEEA 12.O - Operate systems so that they function in the way they were designed.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>● Safety Review</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>● Remember how to safely use all the shop equipment</li> <li>● Remember how to clean the shop</li> </ul> <p>Learning Goal 1: Safely use the shop</p> <p>Concept(s):</p> <ul style="list-style-type: none"> <li>● Machine Review</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>● Remember how to use the machines</li> <li>● Responsibly use the machines</li> </ul> <p>Learning Goal 2: Safely and correctly use the machines</p>		

<p>ITEEA 12.P - Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.</p> <p>ITEEA 19.L - Servicing keeps products in good operating condition.</p> <p>ITEEA 19.M - Materials have different qualities and may be classified as natural, synthetic, or mixed.</p> <p>ITEEA 19.N - Durable goods are designed to operate for a long period of time, while nondurable goods are designed to operate for a short period of time.</p> <p>ITEEA 19.O - Manufacturing systems may be classified into types, such as</p>	
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<p>customized production, batch production, and continuous production.</p> <p>ITEEA 19.P - The interchangeability of parts increases the effectiveness of manufacturing processes.</p> <p>ITEEA 19.Q - Chemical technologies provide a means for humans to alter or modify materials and to produce chemical products.</p> <p>ITEEA 19.R - Marketing involves establishing a product's identity, conducting research on its potential, advertising it, distributing it, and selling it.</p> <p>ITEEA 20.J - Infrastructure is the underlying base or basic framework of a system.</p>	
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<p>ITEEA 20.K - Structures are constructed using a variety of processes and procedures.</p> <p>ITEEA 20.L - The design of structures includes a number of requirements.</p> <p>ITEEA 20.M - Structures require maintenance, alteration, or renovation periodically to improve them or to alter their intended use.</p> <p>ITEEA 20.N - Structures can include prefabricated materials.</p>	
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**Cross-Curricular Connections & 21<sup>st</sup> Century Skills**

- Measuring (some machines have a wood thickness or length to be able to use the machine correctly and safely)

<b>Formative Assessments</b>	<b>Summative Assessments</b>
<ul style="list-style-type: none"> <li>• Class time check-ins</li> </ul>	<ul style="list-style-type: none"> <li>• Safety Quiz</li> </ul>



Essential Questions	Enduring Understanding
<ul style="list-style-type: none"> <li>● What are the classroom procedures?</li> <li>● What is Grit/Effort?</li> <li>● What machines a I using?</li> <li>● What can we use it for?</li> </ul>	<ul style="list-style-type: none"> <li>● Safety</li> <li>● Properly using the machines</li> </ul>

Differentiation		
504	<ul style="list-style-type: none"> <li>● preferential seating</li> <li>● extended time on tests and assignments</li> <li>● reduced homework or classwork</li> <li>● verbal, visual, or technology aids</li> </ul>	<ul style="list-style-type: none"> <li>● modified textbooks or audio-video materials</li> <li>● behavior management support</li> <li>● adjusted class schedules or grading</li> <li>● verbal testing</li> </ul>
Enrichment	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> </ul>	<ul style="list-style-type: none"> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>
IEP	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> </ul>

<b>ELLs</b>	<ul style="list-style-type: none"> <li>● Pre-teach new vocabulary and meaning of symbols</li> <li>● Embed glossaries or definitions</li> <li>● Provide translations</li> <li>● Connect new vocabulary to background knowledge</li> </ul>	<ul style="list-style-type: none"> <li>● Provide flash cards</li> <li>● Incorporate as many learning senses as possible</li> <li>● Portray structure, relationships, and associations through concept webs</li> <li>● Graphic organizers</li> </ul>
<b>At-risk</b>	<ul style="list-style-type: none"> <li>● Purposeful seating</li> <li>● Counselor involvement</li> <li>● Parent involvement</li> </ul>	<ul style="list-style-type: none"> <li>● Contracts</li> <li>● Alternate assessments</li> <li>● Hands-on learning</li> </ul>
<b>21st Century Skills</b>		
<ul style="list-style-type: none"> <li>● Creativity</li> <li>● Innovation</li> <li>● Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>● Problem Solving</li> <li>● Communication</li> <li>● Collaboration</li> </ul>	
<b>Integrating Technology</b>		
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Internet research</li> <li>● Online programs</li> </ul>	<ul style="list-style-type: none"> <li>● Virtual collaboration and projects</li> <li>● Presentations using presentation hardware and software</li> </ul>	

<b>Subject: Wood III</b>	<b>Grade: 11-12</b>	<b>Unit: 2 Machine Maintenance</b>	<b>3 Weeks</b>
<b>Content Standards</b>	<b>Critical Knowledge &amp; Skills</b>		
<p>ITEEA 12.L - Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques. ITEEA 12.M - Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it. ITEEA 12.N - Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>● Checking machine parts</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>● Identify if parts of a machine need to be replaced</li> <li>● Identify if parts of a machine are being used improperly</li> </ul> <p>Learning Goal 1: Keeping the machines clean, safe, and properly used</p>		

ITEEA 12.O - Operate systems so that they function in the way they were designed. ITEEA 12.P - Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.

ITEEA 19.L - Servicing keeps products in good operating condition.

ITEEA 19.M - Materials have different qualities and may be classified as natural, synthetic, or mixed.

ITEEA 19.N - Durable goods are designed to operate for a long period of time, while nondurable goods are designed to operate for a short period of time. ITEEA

19.O - Manufacturing systems may be classified into types, such as customized production, batch production, and continuous production. ITEEA 19.P -

The interchangeability of parts increases the effectiveness of manufacturing processes.

ITEEA 19.Q - Chemical technologies provide a means for humans to alter or modify materials and to produce chemical products.

ITEEA 19.R - Marketing involves establishing a product's identity, conducting research on its potential, advertising it, distributing it, and selling it.

ITEEA 20.J - Infrastructure is the underlying base or basic framework of a system.

ITEEA 20.K - Structures are constructed using a variety of processes and procedures.

ITEEA 20.L - The design of structures includes a number of requirements.

ITEEA 20.M - Structures require maintenance, alteration, or renovation periodically to improve them

<p>or to alter their intended use. ITEEA 20.N - Structures can include prefabricated materials.</p>	
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**Cross-Curricular Connections & 21<sup>st</sup> Century Skills**

- Fractions (The correct size tools must used to do proper machine maintenance) (Standard and Metric)

<b>Formative Assessments</b>	<b>Summative Assessments</b>
<ul style="list-style-type: none"> <li>● Class time check-ins</li> </ul>	<ul style="list-style-type: none"> <li>● Machine Checklists</li> </ul>
<b>Essential Questions</b>	<b>Enduring Understanding</b>
<ul style="list-style-type: none"> <li>● What are the machines in use?</li> <li>● How do I keep them clean?</li> <li>● Are they being used properly?</li> <li>● How do I change parts?</li> </ul>	<ul style="list-style-type: none"> <li>● Basic machine maintenance</li> <li>● Basic machine safety</li> </ul>

<b>504</b>	<ul style="list-style-type: none"> <li>● preferential seating</li> <li>● extended time on tests and assignments</li> <li>● reduced homework or classwork</li> <li>● verbal, visual, or technology aids</li> </ul>	<ul style="list-style-type: none"> <li>● modified textbooks or audio-video materials</li> <li>● behavior management support</li> <li>● adjusted class schedules or grading</li> <li>● verbal testing</li> </ul>
<b>Enrichment</b>	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> <li>● Opportunities for self-evaluation</li> </ul>	<ul style="list-style-type: none"> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>

<b>IEP</b>	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> </ul>
<b>ELLs</b>	<ul style="list-style-type: none"> <li>● Pre-teach new vocabulary and meaning of symbols</li> <li>● Embed glossaries or definitions</li> <li>● Provide translations</li> <li>● Connect new vocabulary to background knowledge</li> </ul>	<ul style="list-style-type: none"> <li>● Provide flash cards</li> <li>● Incorporate as many learning senses as possible</li> <li>● Portray structure, relationships, and associations through concept webs</li> <li>● Graphic organizers</li> </ul>
<b>At-risk</b>	<ul style="list-style-type: none"> <li>● Purposeful seating</li> <li>● Counselor involvement</li> <li>● Parent involvement</li> </ul>	<ul style="list-style-type: none"> <li>● Contracts</li> <li>● Alternate assessments</li> <li>● Hands-on learning</li> </ul>
<b>21st Century Skills</b>		
<ul style="list-style-type: none"> <li>● Creativity</li> <li>● Innovation</li> <li>● Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>● Problem Solving</li> <li>● Communication</li> <li>● Collaboration</li> </ul>	
<b>Integrating Technology</b>		
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Internet research</li> <li>● Online programs</li> </ul>	<ul style="list-style-type: none"> <li>● Virtual collaboration and projects</li> <li>● Presentations using presentation hardware and software</li> </ul>	

**Career education**

- Weekly Discussions: The value of mastering multiple languages in the workforce.

- Equity Discussions: People who benefit from knowing multiple languages.

<b>Subject: Wood III</b>	<b>Grade: 11-12</b>	<b>Unit: 3 Project Design</b>	<b>3 Weeks</b>
<b>Content Standards</b>	<b>Critical Knowledge &amp; Skills</b>		
ITEEA 12.L - Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques. ITEEA 12.M - Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it. ITEEA 12.N - Troubleshoot, analyze, and maintain systems to	<p>Concept(s):</p> <ul style="list-style-type: none"> <li>• Choosing a project</li> </ul> <p>Students are able to:</p> <ul style="list-style-type: none"> <li>• Pick and design a project that is school appropriate</li> <li>• Pick and design a project that is time appropriate</li> <li>• Pick and design a project that is financially appropriate</li> </ul> <p>Learning Goal 1: Choosing a project that fits all the criteria but is still to their liking</p>		



ensure safe and proper function and precision. ITEEA 12.O - Operate systems so that they function in the way they were designed. ITEEA 12.P - Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.

ITEEA 19.L - Servicing keeps products in good operating condition.

ITEEA 19.M - Materials have different qualities and may be classified as natural, synthetic, or mixed.

ITEEA 19.N - Durable goods are designed to operate for a long period of time, while nondurable goods are designed to operate for a short period of time. ITEEA 19.O - Manufacturing systems

Concept(s):

- Choosing appropriate materials

Students are able to:

- Pick a material that best fits their project
- Pick a material that considers things like location, weather, price, hardware ect.

Learning Goal 2: Choose a material that fits all the criteria

may be classified into types, such as customized production, batch production, and continuous production.

ITEEA 19.P - The interchangeability of parts increases the effectiveness of manufacturing processes.

ITEEA 19.Q - Chemical technologies provide a means for humans to alter or modify materials and to produce chemical products.

ITEEA 19.R - Marketing involves establishing a product's identity, conducting research on its potential, advertising it, distributing it, and selling it.

ITEEA 20.J - Infrastructure is the underlying base or basic framework of a system.

ITEEA 20.K - Structures are constructed using a

<p>variety of processes and procedures.</p> <p>ITEEA 20.L - The design of structures includes a number of requirements.</p> <p>ITEEA 20.M - Structures require maintenance, alteration, or renovation periodically to improve them or to alter their intended use. ITEEA 20.N - Structures can include prefabricated materials.</p>	
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**Cross-Curricular Connections & 21<sup>st</sup> Century Skills**

- Math (Students will need to calculate the size shapes and angles of the project) How much wood do I need? Is it too big? Can I make all the cuts with the machinery we currently have?

<b>Formative Assessments</b>	<b>Summative Assessments</b>
<ul style="list-style-type: none"> <li>● Class time check-ins</li> </ul>	<ul style="list-style-type: none"> <li>● Finished design</li> </ul>
<b>Essential Questions</b>	<b>Enduring Understanding</b>
<ul style="list-style-type: none"> <li>● What is a good project?</li> <li>● What is a good material to use?</li> <li>● Is it going to be outside?</li> <li>● How long will this take?</li> </ul>	<ul style="list-style-type: none"> <li>● Fitting to criteria</li> <li>● Choosing projects and materials based off of prior teachings</li> </ul>

504	<ul style="list-style-type: none"> <li>● preferential seating</li> <li>● extended time on tests and assignments</li> <li>● reduced homework or classwork</li> <li>● verbal, visual, or technology aids</li> </ul>	<ul style="list-style-type: none"> <li>● modified textbooks or audio-video materials</li> <li>● behavior management support</li> <li>● adjusted class schedules or grading</li> <li>● verbal testing</li> </ul>
Enrichment	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> <li>● Opportunities for self-evaluation</li> </ul>	<ul style="list-style-type: none"> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>
IEP	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> </ul>
ELLs	<ul style="list-style-type: none"> <li>● Pre-teach new vocabulary and meaning of symbols</li> <li>● Embed glossaries or definitions</li> <li>● Provide translations</li> <li>● Connect new vocabulary to background knowledge</li> </ul>	<ul style="list-style-type: none"> <li>● Provide flash cards</li> <li>● Incorporate as many learning senses as possible</li> <li>● Portray structure, relationships, and associations through concept webs</li> <li>● Graphic organizers</li> </ul>
At-risk	<ul style="list-style-type: none"> <li>● Purposeful seating</li> <li>● Counselor involvement</li> <li>● Parent involvement</li> </ul>	<ul style="list-style-type: none"> <li>● Contracts</li> <li>● Alternate assessments</li> <li>● Hands-on learning</li> </ul>
<b>21st Century Skills</b>		

<ul style="list-style-type: none"> <li>● Creativity</li> <li>● Innovation</li> <li>● Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>● Problem Solving</li> <li>● Communication</li> <li>● Collaboration</li> </ul>
<b>Integrating Technology</b>	
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Internet research</li> <li>● Online programs</li> </ul>	<ul style="list-style-type: none"> <li>● Virtual collaboration and projects</li> <li>● Presentations using presentation hardware and software</li> </ul>
<b>Career education</b>	
<ul style="list-style-type: none"> <li>● Weekly Discussions: The value of mastering multiple languages in the workforce.</li> </ul>	<ul style="list-style-type: none"> <li>● Equity Discussions: People who benefit from knowing multiple languages.</li> </ul>

<b>Subject: Wood III</b>	<b>Grade: 11-12</b>	<b>Unit: 4 Project Work</b>	<b>30 Weeks</b>
<b>Content Standards</b>	<b>Critical Knowledge &amp; Skills</b>		
ITEEA 12.L - Document processes and procedures and communicate them to different audiences using	Concept(s): <ul style="list-style-type: none"> <li>● Design Process</li> </ul>		

appropriate oral and written techniques. ITEEA 12.M - Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it. ITEEA 12.N - Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision. ITEEA 12.O - Operate systems so that they function in the way they were designed. ITEEA 12.P - Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate. ITEEA 19.L - Servicing keeps products in good operating condition. ITEEA 19.M - Materials have different qualities and may be classified as natural, synthetic, or mixed. ITEEA 19.N - Durable goods are designed to operate for a

Students are able to:

- Define the design process
- Plan and create a design

Learning Goal 1: Planning and organization is imperative to all aspects

Concept(s):

- Student Project

Students are able to:

- Design and create a project of their choice
- Problem solve and work through issues to complete the project

Learning Goal 2: Use the engineering design process to design and create anything. Basics of engineering. Working through manufacturing and construction objectives.

long period of time, while nondurable goods are designed to operate for a short period of time. ITEEA 19.O - Manufacturing systems may be classified into types, such as customized production, batch production, and continuous production. ITEEA 19.P - The interchangeability of parts increases the effectiveness of manufacturing processes. ITEEA 19.Q - Chemical technologies provide a means for humans to alter or modify materials and to produce chemical products. ITEEA 19.R - Marketing involves establishing a product's identity, conducting research on its potential, advertising it, distributing it, and selling it. ITEEA 20.J - Infrastructure is the underlying base or basic framework of a system.

<p>ITEEA 20.K - Structures are constructed using a variety of processes and procedures.</p> <p>ITEEA 20.L - The design of structures includes a number of requirements.</p> <p>ITEEA 20.M - Structures require maintenance, alteration, or renovation periodically to improve them or to alter their intended use.</p> <p>ITEEA 20.N - Structures can include prefabricated materials.</p>	
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**Cross-Curricular Connections & 21<sup>st</sup> Century Skills**

- Math (Measuring, Angles, Distance)

<b>Formative Assessments</b>	<b>Summative Assessments</b>
<ul style="list-style-type: none"> <li>● Class time check-ins</li> </ul>	<ul style="list-style-type: none"> <li>● Finished project</li> </ul>
<b>Essential Questions</b>	<b>Enduring Understanding</b>
<ul style="list-style-type: none"> <li>● What should I do?</li> <li>● How do I fix this problem?</li> <li>● Why isn't this working?</li> </ul>	<ul style="list-style-type: none"> <li>● Design process to make anything</li> <li>● Its ok to fail if you keep improving</li> </ul>



<b>504</b>	<ul style="list-style-type: none"> <li>● preferential seating</li> <li>● extended time on tests and assignments</li> <li>● reduced homework or classwork</li> <li>● verbal, visual, or technology aids</li> </ul>	<ul style="list-style-type: none"> <li>● modified textbooks or audio-video materials</li> <li>● behavior management support</li> <li>● adjusted class schedules or grading</li> <li>● verbal testing</li> </ul>
<b>Enrichment</b>	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> <li>● Opportunities for self-evaluation</li> </ul>	<ul style="list-style-type: none"> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>
<b>IEP</b>	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> </ul>
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<b>At-risk</b>	<ul style="list-style-type: none"> <li>● Purposeful seating</li> <li>● Counselor involvement</li> <li>● Parent involvement</li> </ul>	<ul style="list-style-type: none"> <li>● Contracts</li> <li>● Alternate assessments</li> <li>● Hands-on learning</li> </ul>
<b>21st Century Skills</b>		

<ul style="list-style-type: none"> <li>● Creativity</li> <li>● Innovation</li> <li>● Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>● Problem Solving</li> <li>● Communication</li> <li>● Collaboration</li> </ul>
<b>Integrating Technology</b>	
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Internet research</li> <li>● Online programs</li> </ul>	<ul style="list-style-type: none"> <li>● Virtual collaboration and projects</li> <li>● Presentations using presentation hardware and software</li> </ul>
<b>Career education</b>	
<ul style="list-style-type: none"> <li>● Weekly Discussions: The value of mastering multiple languages in the workforce.</li> </ul>	<ul style="list-style-type: none"> <li>● Equity Discussions: People who benefit from knowing multiple languages.</li> </ul>

## Appendix A

**Audubon Public Schools**

**Engaging Students ~ Fostering Achievement ~ Cultivating 21st Century Global Skills**

**Written By: Mike Stubbs**

**Revised by Steve Laughlin**

**Approved June, 2017**

**Course Title: Woodworking 3**

**Grade Level: 11 and 12**

<b>Content Statements</b>	<b>NJSLS</b>
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<p>In this unit students will continue to build on their knowledge of woodworking and expand it into cabinet making with the use of raised panel doors.</p>	<p>9.4.12.M.15,16,17,19,29,30,31,32,33,35,64, 9.1.12.A.1,2,3,4,5 9.1.12.C.1,2,3,4,5 <b>Companion Standards:</b> 1, 2, 4, 8, 9, 10</p>
<p><b>Overarching Essential Questions</b> How do I safely make raised panel doors? What are raised panel doors? What are raised panel doors used for?</p>	<p><b>Overarching Enduring Understandings</b> Raised panel doors can add style and function to an otherwise plain cabinet.</p>
<p><b>Unit Essential Questions</b> What is a raised panel? What are the three parts to a raised panel door? How is a router table used to make a style and rail? What is a shaper? How do I use a shaper safely? What is a table saw? How can a table saw be used to cross cut? How can a table saw be used to rip a board? How do you change the blade on the table saw? What is the stack dado blade used for? What are the four steps in squaring a board to size? What are the five types of cutting you can do at the table saw? What is the surface planner used for? How do I use the surface planner safely? What is a power miter box? How do I use the power miter box safely? How do I change the bit in a router? What is a wood lathe? How do I use a wood lathe safely? What is a belt sander used for? What is a jig saw used to cut? What is the difference between hard wood and soft wood? What is the difference between cross cutting and ripping?</p>	<p><b>Unit Enduring Understandings</b> I understand that fine cabinet making requires me to follow and understand plans.  I am aware that working with power tools can be dangerous if the safety rules are not followed.</p>

<p>What is a backsaw used for?  When do you use a band saw?  What are the three parts of a board?  What is a wood joint?  What is the difference between 80, 100, and 120 grit sand paper?  How do I sand a board?  When sanding how do I know I am ready to move to the next grit?  How do I use a jointer?  What does square mean in wood working?  What is a button dowel joint?  What does stain do for a project?  How do I use a disc sander to square the end of a board?  What is a mortis used with?  What is a router used for?  What is the difference between a dado and a rabbit joint?  What are the steps in applying finish to a project?  What is stain?  What is wash coat?  What is depth?  Why do you wax a project after it is finished?  What is a planer used for in woodworking?</p>	
<p><b>Unit Rationale</b>  Students should understand how to read a set of plans and how to solve the problems that arise as they make the project.</p>	<p>Unit Overview  Students will have a better understand as to how high quality cabinets are made and how to add raised panel door to a cabinet.</p>
<p><b>Authentic Learning Experiences</b></p>	

Make a set of raised panel doors  
Produce a project of their choose that includes a raised panel door

### **21st Century Skills and Themes**

Global: communicate ideas through technical drawing  
Problem solving: solve problems with technical drawing  
Technology: use technical tools and Auto CAD 2005LT to draw  
Collaboration: some of the activities are collaborative in nature

### **Unit Learning Targets/Scaffolding to CPIs**

This unit builds on the knowledge and experience of power tools and raises the bar on quality of the finished project. It also introduces the raised panel technique which will enhance their woodworking skills.

### **Key Terms**

Anitkickback pawls- finger like protection devices behind the blade of a table saw that resist the tendency of the saw to throw the stock upward and toward the operator  
Backsaw- handsaw that has a very thin blade with fine teeth, used to make fine cuts across the grain  
Band saw- versatile machine with a blade that is a steel band which revolves around an upper and lower wheel, used mostly for cutting curves, circles, and irregular shapes  
Bar clamp- device used when gluing up large surfaces edge to edge and for clamping parts together during assembly  
Belt sander- portable power tool which has a replaceable abrasive belt that turns around two rollers, used to perform rough sanding tasks, such as removing waste wood, and fine finishing tasks  
Bill of materials- complete list of materials, fasteners, and accessories needed for the project  
Block plane- hand plane used for planning end grain  
But joint- type of joint in which the edge, end, or face of a piece of wood is joined with the edge, end, or face of another piece  
Chisel- a straight edge cutting tool used to shape and trim wood  
Chuck- device on a drill for holding twist drills and bits  
Combination square- versatile measuring tool that can be used as a square, marker, level, rule, or gauge  
Countersink- a bit or drill used to cut a recess in a surface for setting the head of a screw flush with or below the surface  
Crosscut- cut made across the grain of the wood to cut stock to length  
Dado joint- formed by cutting a dado across one of the boards to receive the end of another board  
Dado head- a blade assembly for the table saw used to cut a dado or rabbit

Drill press- machine used primarily for drilling holes of various diameters and depths and at various angles. With appropriate jigs or setup, it can also be used for mortising and sanding.

End grain- the closely packed tips of cut wood fibers revealed when stock is cut across the grain.

Feather board- A piece of lumber with a series of saw kerfs on one end, used to hold narrow stock against the rip fence when making a rip cut with the table saw.

Hand drill- tool used with a twist drills to drill small holes or drive screws.

Hardwood- wood cut from deciduous trees, such as maple and oak.

Jack plane- hand plane used for general planning.

Jigsaw- portable power saw used to cut both curved and straight cuts.

Kerf- cut made by a saw.

Kickback- sudden, violent thrust upward and back.

Materials list- complete listing of all materials needed for a construction project including sizes, amounts, and part names.

Mortise- a rectangular hole cut in wood to receive a tenon that is the same size and shape as the hole

Nail set- a short metal punch used to drive a nail below the woods surface

Oscillating spindle sander- a machine that moves a sanding drum up and down and spins it at the same time

Planer- designed to surface boards to thickness and smooth rough-cut lumber

Pocket hole jig- device used as an aid for drilling holes that will be used when fastening two wood parts together such as the rails to the underside of the table

Rabbit joint- type of joint formed by cutting the end or edge of one piece into a rabbit cut at the end or edge of another piece

Rip fence- part of the table saw used to guide a work piece straight through the saw blade

Staining- applying transparent or semitransparent liquid made from dyes, pigments, and chemicals to change the color of wood without changing its texture

Table saw- cutting machine with a fixed, horizontal table and an adjustable blade, used for ripping and cross cutting

Wash coat- sealer applied after stain and before a clear finish

### **Instructional Strategies**

Lecture

Monitor

Facilitate

Model and demonstrate

### **Customizing Learning/ Differentiation**

Special Needs

Students are engaged in small group work, where students of differing abilities and learning styles should be grouped together. Students act as peer coaches to support students with special needs.

#### ELL

Allow English Language Learners to play a very active role in selecting their hotspots to study. Many students' families may have immigrated from countries or regions that feature hotspots. The process of sharing their own perspective or cultural ties to their native region's biodiversity is invaluable to the group's work.

#### Gifted Learners

Offer scientific journal articles as sources for research to gifted students. The vocabulary and writing style is very advanced, but gifted students might be able to garner the needed information and data from these primary sources.

#### Mainstream Learners

Throughout the unit during class time, plan and hold small learning sessions/work groups where students can selectively attend to learn more about a specific topic. Hold these sessions often, changing the topic every week. Topics can include, but not be limited to using maps, planning an interview, interpreting scientific data, reading graphs and charts, etc. Allow students to select the sessions they would like to attend, based on their perceived need, and they should plan the sessions into their research schedule ahead of time.

#### **Formative Assessments**

Projects

Class Participation

Journal

Cleanup Job

Raised panel doors

#### **Interdisciplinary Connections**

Language arts- writing, logging, oral communication

Math-measurements, angles, radius

Science- environmental factors

Art- sketching and drawing

#### **Resources**

Wood Smith

Woodworkers Journal

Woodworkers Handbook

#### **Suggested Activities for Inclusion in Lesson Planning**

Keep daily log of progress that could include questions and notes on demonstrations

Read projects plan in order to complete steps and directions

<p>Measuring Activities  Bill of materials work sheet  Compare two different materials and explain their advantages and disadvantages  Set of raised panel doors  Project of their choosing  Assemble  Finishing steps- stain, wash coat, deft, and wax</p>
<p><b>Unit Timeline</b>  Year long class</p>

**Appendix**

<b>Differentiation</b>	
<b>Enrichment</b>	<ul style="list-style-type: none"> <li>● Utilize collaborative media tools</li> <li>● Provide differentiated feedback</li> <li>● Opportunities for reflection</li> <li>● Encourage student voice and input</li> <li>● Model close reading</li> <li>● Distinguish long term and short term goals</li> </ul>



<b>Intervention &amp; Modification</b>	<ul style="list-style-type: none"> <li>● Utilize “skeleton notes” where some required information is already filled in for the student</li> <li>● Provide access to a variety of tools for responses</li> <li>● Provide opportunities to build familiarity and to practice with multiple media tools</li> <li>● Leveled text and activities that adapt as students build skills</li> <li>● Provide multiple means of action and expression</li> <li>● Consider learning styles and interests</li> <li>● Provide differentiated mentors</li> <li>● Graphic organizers</li> </ul>
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