Audubon Public School District

Woodshop II

Curriculum Guide

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Course Description

Woodshop II

This course allows students to explore advanced techniques in woodworking related to the cabinet making industry. Proper SAFETY procedures, the correct use of advanced power equipment, line production techniques and career opportunities are discussed throughout the course. Students will construct individual projects that are in line with the Woodworking II curriculum and skill level. Students are required to purchase their own materials. Cost depends on size of project and material choice.

Overview / Progressions

Overview	Focus Indicator #
Unit 1: Shop and Machine Safety Review	• 8.2.8.NT.1 • 9.3.12.AC.3 • 9.3.12.AC.6
Unit 2: Project Planning	• 8.2.12.ED.1 • 8.2.12.ED.2 • 8.2.12.ED.3 • 8.2.12.ED.5 • 8.2.12.ED.6
Unit 3: Classic Craftsman Style End Table	• 8.2.12.ED.1 • 8.2.12.NT.2 • 8.2.12.ED.3 • 8.2.12.ED.5 • 8.2.12.ED.6
Unit 4: Mass Production Project	• 8.2.12.ED.1 • 8.2.12.ED.3 • 8.2.12.ED.5 • 8.2.12.ITH.2 • 8.2.12.NT.1

Woodshop II	Grades 10-12	Unit 1: Shop and Machine Safety Review	Two Weeks

Performance Expectations		Critical Knowledge and Skills
8.2.12.NT.1	Explain how different groups can contribute to the overall design of a product.	Students understand how to safely use hand and power tools.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.	Students will understand how to safely work in a shop.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.	Student will understand how to use technical drawing to plan a project

Formative Assessments	Summative Assessments
● Project benchmarks ● Class Participation ● Journal ● Cleanup Job ● Group Work	● Projects ● Power tools exam ● Cleanup of Shop ● Working in groups ● Observation of working in the shop
Suggested Primary Resources	**Suggested Supplemental Resources**
● Wood Smith ● Woodworkers Handbook	● Woodworkers Journal ● Google Classroom Videos

• Hand tools • Power tools	

Cross-Curricular Connections
• Language arts- writing, logging, oral communication • Math-measurements, angles, radius • History- history of american furniture making • Science- environmental factors • Art- sketching and drawing

Enduring Understanding	Essential Questions
• Engineers use science, mathematics, and other disciplines to improve technology. Increased collaboration among engineers, scientists, and mathematicians can improve their work and designs.	• How do I conduct myself in a shop setting? • How do you use shop tools in a safe manner? • Where are the dangers when using shop machines? • What are the dangers of using shop machines? • How do I set up a router table safely? • How to set up and tear down a setup?

Differentiation

504	• preferential seating • extended time on tests and assignments • reduced homework or classwork • verbal, visual, or technology aids	• modified textbooks or audio-video materials • behavior management support • adjusted class schedules or grading • verbal testing
Enrichment	• Utilize collaborative media tools • Provide differentiated feedback • Opportunities for reflection •	• Encourage student voice and input • Model close reading • Distinguish long term and short term goals

IEP	• Utilize “skeleton notes” where some required information is already filled in for the student • Provide access to a variety of tools for responses • Provide opportunities to build familiarity and to practice with multiple media tools • Graphic organizers	• Leveled text and activities that adapt as students build skills • Provide multiple means of action and expression • Consider learning styles and interests • Provide differentiated mentors
ELLs	• Pre-teach new vocabulary and meaning of symbols • Embed glossaries or definitions • Provide translations • Connect new vocabulary to background knowledge	• Provide flash cards • Incorporate as many learning senses as possible • Portray structure, relationships, and associations through concept webs • Graphic organizers
At-risk	• Purposeful seating • Counselor involvement • Parent involvement	• Contracts • Alternate assessments • Hands-on learning
21st Century Skills		
• Creativity • Innovation • Critical Thinking		• Problem Solving • Communication • Collaboration
Integrating Technology		

• Chromebooks • Internet research • Online programs	• Virtual collaboration and projects • Presentations using presentation hardware and software

Woodshop II	**Grades 10-12**	**Unit 3: Project Planning**	**Two Weeks**

Performance Expectations		Critical Knowledge and Skills
8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.	Students research a design.
8.2.12.ED.2	Create scaled engineering drawings for a new product or system and make modification to increase optimization based on feedback.	Students draft plans for a product.
8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.	Students evaluate differing models.
8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).	Students evaluate the projects as they are built.
8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).	Students use different materials and tools.

Formative Assessments	Summative Assessments
● Project benchmarks ● Class Participation ● Journal ● Cleanup Job	● Projects ● Power tools exam ● Observation of students working ● Observation of student using lab time
Suggested Primary Resources	**Suggested Supplemental Resources**
● Wood Smith ● Woodworkers Handbook ● Hand tools ● Power tools	● Woodworkers Journal
Cross-Curricular Connections	
● Language arts- writing, logging, oral communication ● Math-measurements, angles, radius ● Science- environmental factors ● Art- sketching and drawing	
Enduring Understanding (Core Idea)	**Essential Questions**
● Engineering design is a complex process in which creativity, content knowledge, research, and analysis are used to address local and global problems. ● Decisions on trade-offs involve systematic comparisons of all costs and benefits, and final steps that may involve redesigning for optimization. ● Engineering design evaluation, a process for determining how well a solution meets requirements, involves systematic comparisons between requirements, specifications, and constraints.	● How do I research in preparation for a project? ● How does creativity get executed in a plan? ● How do I determine what trade-offs need to be made when planning a project? ● How to fill out a bill of materials list? ● When to use different types of woods based on the hardness? ● What hardware needs to be used? ● How to design a project to meet the needs for which it was intended? ●

Differentiation

504	● preferential seating ● extended time on tests and assignments ● reduced homework or classwork ● verbal, visual, or technology aids	● modified textbooks or audio-video materials ● behavior management support ● adjusted class schedules or grading ● verbal testing
Enrichment	● Utilize collaborative media tools ● Provide differentiated feedback ● Opportunities for reflection ●	● Encourage student voice and input ● Model close reading ● Distinguish long term and short term goals
IEP	● Utilize “skeleton notes” where some required information is already filled in for the student ● Provide access to a variety of tools for responses ● Provide opportunities to build familiarity and to practice with multiple media tools ● Graphic organizers	● Leveled text and activities that adapt as students build skills ● Provide multiple means of action and expression ● Consider learning styles and interests ● Provide differentiated mentors
ELLs	● Pre-teach new vocabulary and meaning of symbols ● Embed glossaries or definitions ● Provide translations ● Connect new vocabulary to background knowledge	● Provide flash cards ● Incorporate as many learning senses as possible ● Portray structure, relationships, and associations through concept webs ● Graphic organizers
At-risk	● Purposeful seating ● Counselor involvement ● Parent involvement	● Contracts ● Alternate assessments ● Hands-on learning

21st Century Skills	
• Creativity • Innovation • Critical Thinking	• Problem Solving • Communication • Collaboration
Integrating Technology	
• Chromebooks • Internet research • Online programs	• Virtual collaboration and projects • Presentations using presentation hardware and software

Woodshop II	**Grades 10-12**	**Unit 3 Classic Craftsman Style End Table**	**24 Weeks**

Focus Indicator		Critical Knowledge and Skills
8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.	Students will follow plans to produce a craftsman style end table
8.2.12.NT.2	Redesign an existing product to improve form or function.	Students will make modifications to the end table as they follow the plans and complete the end table.

8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.	Students will evaluate other end tables as they are being constructed.
8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).	Students will evaluate their end tables as they are constructed and make changes to improve the product.
8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).	Students will use different machines and techniques to aid in the construction of their end tables.

Formative Assessments	**Summative Assessments**
● Project benchmarks ● Class Participation ● Journal ● Cleanup Job ●	● Projects ● Power tools exam
Suggested Primary Resources	**Suggested Supplemental Resources**
● Wood Smith ● Woodworkers Handbook ● Hand tools ● Power tools	● Woodworkers Journal
Cross-Curricular Connections	
● Language arts- writing, logging, oral communication ● Math-measurements, angles, radius ● Science- environmental factors ● Art- sketching and drawing	
Enduring Understanding	**Essential Questions**

• Engineering design is a complex process in which creativity, content knowledge, research, and analysis are used to address local and global problems. • Decisions on trade-offs involve systematic comparisons of all costs and benefits, and final steps that may involve redesigning for optimization. • Engineering design evaluation, a process for determining how well a solution meets requirements, involves systematic comparisons between requirements, specifications, and constraints. • Engineers use science, mathematics, and other disciplines to improve technology. Increased collaboration among engineers, scientists, and mathematicians can improve their work and designs. • Technology, product, or system redesign can be more difficult than the original design.	• How do I conduct myself in a shop setting? • How do you use shop tools in a safe manner? • Where are the dangers when using shop machines? • What are the dangers of using shop machines? • How do I set up a router table safely? • Safely use a surface planer • Safely use a power miter box • Safely use an oscillating spindle sander • Safely use a disc sander • Edge glue a panel together with the use of bar clamps • Safely use a dovetail jig • Safely use a button dowel jig • Setup a router table • Make a drawer. • How to use a biscuit jointer

Differentiation		
504	● preferential seating ● extended time on tests and assignments ● reduced homework or classwork ● verbal, visual, or technology aids	● modified textbooks or audio-video materials ● behavior management support ● adjusted class schedules or grading ● verbal testing
Enrichment	• Utilize collaborative media tools • Provide differentiated feedback • Opportunities for reflection •	• Encourage student voice and input • Model close reading • Distinguish long term and short term goals

IEP	• Utilize “skeleton notes” where some required information is already filled in for the student • Provide access to a variety of tools for responses • Provide opportunities to build familiarity and to practice with multiple media tools • Graphic organizers	• Leveled text and activities that adapt as students build skills • Provide multiple means of action and expression • Consider learning styles and interests • Provide differentiated mentors
ELLs	• Pre-teach new vocabulary and meaning of symbols • Embed glossaries or definitions • Provide translations • Connect new vocabulary to background knowledge	• Provide flash cards • Incorporate as many learning senses as possible • Portray structure, relationships, and associations through concept webs • Graphic organizers
At-risk	• Purposeful seating • Counselor involvement • Parent involvement	• Contracts • Alternate assessments • Hands-on learning
21st Century Skills		
• Creativity • Innovation • Critical Thinking		• Problem Solving • Communication • Collaboration
Integrating Technology		

• Chromebooks • Internet research • Online programs	• Virtual collaboration and projects • Presentations using presentation hardware and software

Woodshop II	**Grades 10-12**	**Unit 4 Mass Production Project**	**Eight Weeks**

Focus Indicator		Critical Knowledge and Skills
8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.	Students research a design for a mass production project.
8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.	Students draft plans for a product that will be made as a group to product between 5 to 10 identical projects.
8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).	Students will make a prototype of the project before mass product can began.
8.2.12.ITH.2	Propose an innovation to meet future demands supported by an analysis of the potential costs, benefits, trade-offs, and risks related to the use of the innovation.	Students will design and produce a project that meets the needs of the people who they are trying to sell to.
8.2.12.NT.1	Explain how different groups can contribute to the overall design of a product	Students will work as a group to mass product the product that they see how a company if run.

Formative Assessments	Summative Assessments
● Project benchmarks ● Class Participation ● Journal ● Cleanup Job ●	● Mass Production Project ● Group Work ● Observation of student work ● Observation of students working together
Suggested Primary Resources	**Suggested Supplemental Resources**
● Wood Smith ● Woodworkers Handbook ● Hand tools ● Power tools	● Woodworkers Journal
Cross-Curricular Connections	
● Language arts- writing, logging, oral communication ● Math-measurements, angles, radius ● Science- environmental factors ● Art- sketching and drawing	
Enduring Understanding	**Essential Questions**
● Engineering design is a complex process in which creativity, content knowledge, research, and analysis are used to address local and global problems. ● Decisions on trade-offs involve systematic comparisons of all costs and benefits, and final steps that may involve redesigning for optimization. ● Changes caused by the introduction and use of a new technology can range from gradual to rapid and from subtle to obvious, and can change over time. These changes may vary from society to society as a result of differences in a society's economy, politics, and culture. ● Engineers use science, mathematics, and other disciplines to improve technology. Increased collaboration among engineers, scientists, and mathematicians can improve their work and designs. ● Technology, product, or system redesign can be more difficult than the original design.	● How do I work as part of a group to produce a project? ● What needs to be redesigned to mass produce a project? ● What is mass Production? ● Design and product a product that can be sold ● What is the cost and price to sell a product for a profit ● How to set up machines to produce the same parts each and every time. ●

Differentiation		
504	● preferential seating ● extended time on tests and assignments ● reduced homework or classwork ● verbal, visual, or technology aids	● modified textbooks or audio-video materials ● behavior management support ● adjusted class schedules or grading ● verbal testing
Enrichment	● Utilize collaborative media tools ● Provide differentiated feedback ● Opportunities for reflection ●	● Encourage student voice and input ● Model close reading ● Distinguish long term and short term goals
IEP	● Utilize “skeleton notes” where some required information is already filled in for the student ● Provide access to a variety of tools for responses ● Provide opportunities to build familiarity and to practice with multiple media tools ● Graphic organizers	● Leveled text and activities that adapt as students build skills ● Provide multiple means of action and expression ● Consider learning styles and interests ● Provide differentiated mentors
ELLs	● Pre-teach new vocabulary and meaning of symbols ● Embed glossaries or definitions ● Provide translations ● Connect new vocabulary to background knowledge	● Provide flash cards ● Incorporate as many learning senses as possible ● Portray structure, relationships, and associations through concept webs ● Graphic organizers

At-risk	• Purposeful seating • Counselor involvement • Parent involvement	• Contracts • Alternate assessments • Hands-on learning
21st Century Skills		
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APPENDIX A

SOFTWARE NAMES:

- VCarve
- Google Classroom

APPENDIX B

ASSESSMENT:

LIST OF ASSESSMENT/TYPE:

Journal (10% of grade)
Projects (45% of grade)
Classroom Participation (25%of grade)
Machine Safety Test (10% of grade)
Clean up Job (10% of grade)