



7th Grade Industrial Technology Middle School Elective Wheel

Board Approved: March 21, 2024

Course Information

Course Description:

This course introduces students to fundamental knowledge and skills used in the construction and manufacturing industries. Students will learn how to apply introductory concepts in hand tools, power tools, design, measuring, and problem solving to safely and accurately complete woodworking projects.

Transfer Goal:

Safely and accurately design and create a woodworking project using both hand tools and specific power tools.

State Standards: [DESE Career Pathways for Construction Trades](#)

Curriculum Resource(s): *Exploring Woodworking, 8th Edition*

*Priority standards indicated in **bold***

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Patrons with questions about the course should contact curriculum@fhsdschools.org

Unit 1: Fundamentals of Industrial Technology

Timeframe: 2 weeks, ongoing throughout course

Unit Description: Students will learn measuring using a standard ruler, hand tool names and uses, power tool names and uses, and basic shop safety rules. Students will take and pass a safety test during this unit, which is a requirement to begin to use the shop tools and equipment.

Enduring Understandings:

- Measuring using a standard ruler is an important skill in accurately creating woodworking projects.
- Knowing the name of basic hand tools and the proper use of each is important when building projects.
- There are advantages and disadvantages of power tools compared to hand tools.
- Safety is the main priority in the shop, and there could be negative consequences to breaking safety rules.

Essential Questions:

- How could being able to measure accurately impact my finished project?
- What tools would be appropriate to use on my project?
- What tools could I use around my own home in the future?
- What are the advantages and disadvantages of using power tools instead of hand tools to build a project?
- Why is it important to know and understand safety procedures in the shop area?
- How can knowing and understanding safety procedures and techniques help me stay safe in other settings besides the woodshop?

Unit 1 Standards

STANDARD CODE	STUDENTS WILL KNOW, BE ABLE TO, AND UNDERSTAND:
BS 1	I can explain the idea of a safety culture and its importance in the construction crafts
Math 2	I can use a standard ruler and a measuring tape to measure
HT 1	I can recognize and identify some of the basic hand tools and their proper uses in the construction trade

Priority standards indicated in **bold**

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Comm 1	I can interpret information and instructions presented in both verbal and written form
BS 2	I can identify causes of accident and impact of accident costs
BS 10	I can demonstrate the use and care of appropriate personal protective equipment (PPE)
EMP 1	I can explain the role of an employee in the construction industry

Unit 2: Design and Development in Industrial Technology

Timeframe: 7 weeks

Unit Description: Students will apply skills in hand tool use, power tool use, measuring, and following directions to build an entry-level woodworking project while practicing safe hand tool techniques.

Enduring Understandings:

- Proper tool techniques result in high-quality projects made safely.
- Making mistakes and finding a solution to them is an essential part of the building process.
- Being able to follow multi-step directions in a project is important to proper completion.
- Utilizing a basic schematic can ensure that the project is assembled correctly.

Essential Questions:

- Why is using the correct tool for its intended purpose important?
- How can using the correct tool in the correct manner improve both your finished project and your overall safety?
- How can I overcome flaws in my lumber, project, or my own mistakes?
- How is my project affected if I skip a step or don't thoroughly complete it?
- How can I properly read a basic schematic?

Unit 2 Standards

STANDARD CODE	STUDENTS WILL KNOW, BE ABLE TO, AND UNDERSTAND:
BS 1	I can explain the idea of a safety culture and its importance in the construction crafts
Math 2	I can use a standard ruler and a measuring tape to measure
HT 1	I can recognize and identify some of the basic hand tools and their proper uses in the construction trade
HT 3	I can safely use hand tools
PT 2	I can use power tools safely

*Priority standards indicated in **bold***

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Comm 1	I can interpret information and instructions presented in both verbal and written form
BS 2	I can identify causes of accident and impact of accident costs
BS 10	I can demonstrate the use and care of appropriate personal protective equipment (PPE)
Comm 2	I can communicate effectively in on-the-job situations using verbal and written skills
BMFA 1	I can identify various types of building materials and their uses
EMP 1	I can explain the role of an employee in the construction industry
HT 2	I can visually inspect hand tools to determine if they are safe to use

*Priority standards indicated in **bold***

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