Unit 1: Safety

Content Area: **Applied Technology**
Course(s):
Time Period: **Marking Period 1**
Length: **ongoing**
Status: **Published**

Brief Summary of Unit

Students will learn the importance of using appropriate personal protection devices such as safety glasses, dust masks, and gloves according to the regulations provided by OSHA and as specified on the MSDS (material safety data sheet) for finishing substances while working in the shop. They will learn about procedures to follow in the event of a personal injury or injury of a fellow student. Students will learn how to safely handle power machinery, hand tools, and finishing substances in the woodworking shop. They will understand that their safety and the safety of others depend on every individual being alert and safety conscious at all times. They will also learn that proper disposal of waste materials as specified by the EPA is essential to the safety of people and the environment. Students will learn that highly specialized techniques used in Advanced Woods will require more sophisticated safety procedures beyond what they have used in woodworking 1 and 2 levels.

Standards

LA.RST.11-12.2	Determine the central ideas, themes, or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
LA.RST.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
LA.RST.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
12.9.3.MN.4	Describe career opportunities and means to achieve those opportunities in each of the Manufacturing Career Pathways.
LA.11-12.CCSS.ELA-Literacy.CCRA.RL.1	Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
TECH.8.1.12	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.2.12	Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Transfer

- • Develop a safety conscious.
- • Develop safety habits for everyday life usage.
- • Safely use power tools and hand tools at home as well as in the shop environment.

Essential Questions

- • What can be done by an individual in the work place to reduce the chances of injury?
- • What is a MSDS (material safety data sheet) and why should I care about it?
- • What is OSHA, and why did they create those rules?
- • Why do we mainly use water based stains and finishes today?

Essential Understandings

- o safe handling procedures for glues, stains, solvents, and other finishing fluids (OSHA, MSDS, EPA)
- o safe handling procedures for hand and power tool operation.
- o safe handling procedures for lifting and carrying lumber.
- o safety rules and regulations for working in the Shop (OSHA)
- o Vocabulary of safety including but not limited to: personal protection, OSHA, MSDA,EPA, ergonomics, toxic, flammable, irritant, respirator, dust mask, safety guard, etc.

Students Will Know

- • a safe shop environment depends on each individual being safety conscious at all times.
- • being able to recognize potentially hazardous situations is the key to avoiding injury.
- • knowing and following proper procedures can reduce the risk of injury.
- • knowing and proceeding based on your individual limitations can greatly reduce your chance of injury.
- • OSHA and EPA regulations and MSDS information are in place to advise how to maintain a safe shop.

Students Will Be Skilled At

- • safe handling procedures for glues, stains, solvents, and other finishing fluids (OSHA, MSDS, EPA)
- • safe handling procedures for hand and power tool operation.
- • safe handling procedures for lifting and carrying lumber.
- • safety rules and regulations for working in the shop (OSHA).
- • vocabulary of safety including but not limited to; personal protection, OSHA, MSDS,EPA, ergonomics, toxic, flammable, irritant, respirator, dust mask, safety guard, etc.

Evidence/Performance Tasks

- • answer the essential questions.• answer the essential questions.• answer the essential questions.• answer the essential questions.• answer the essential questions.• answer the essential questions.• answer the essential questions.• answer the essential questions.• answer

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- • complete a quiz on safety in the woodshop.
- • complete a writing prompt related to safety issues.
- • demonstrate safe work habits.
- • describe a safety problem that may result from not following safety rules and explain how you
- • develop a list of 10 general safety rules for working in the woodshop.
- • develop a safety poster illustrating one of the safety rules discussed in class.
- • evaluate the shop and make recommendations for improving the overall safety of the room.
- • use the internet to chart the most common school accidents and present their findings to the class.
- • would correct this problem so it can be avoided in the future.

Learning Plan

- • Allow students to work independently to layout their parts on the stock.
- • Demonstrate laying out parts on a board emphasizing grain direction, multiple cut parts and same size parts.
- • Demonstrate the correct procedure for squaring a board using a framing square
- • Distribute various size boards and have students measure them with a tape measure to the nearest 1/16th of an inch.
- • Divide students into groups distribute sample project parts and have each group layout the parts. Have the students explain to the class why they chose that
- • Have students create a bill of materials and a plan of procedure for a project.
- • Have students read and discuss relevant material in woodworking textbook
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- • Introduce new vocabulary.
- • Present lesson on developing plans along with instruction for using a basic CADD program on the computer.
- • Present lesson on layout and using layout tools
- • Preview the essential questions and connect to learning throughout the unit.
- • Quizzes/Tests
- • Record the measurements and determine the board feet of each piece.
- • specific layout. Compare the decisions of all groups.
- • Writing prompts as homework.

Materials

- ,DVD
- dust masks

- EPA and OSHA regulations
- eye safety
- gloves
- internet .
- Material Data Sheets
- poster paper
- push sticks
- Textbook Modern Cabinet Making Goodheart-Wilcox

Suggested Strategies for Modifications

- • additional time on task
- • alternative outcome options
- • assessment based on individual development in the area of study
- • audio tape of instruction
- • cooperative learning groups
- • handouts of notes, procedures, processes, diagrams, etc.
- • images and visual aids
- • one-to-one instruction and assistance
- • preferential seating
- • reading material modified to student level
- • revised techniques, use of tools and media in hands-on activity
- • study partners
- • testing materials appropriate to student level