

Unit: Tool and Material Identification

Title: Review of Tools, Materials, and Fasteners

Skill(s) and Knowledge: Students will be able to: identify hand tools, power tools and materials, and describe the use and maintenance of each. Students will gain knowledge on why tools are important.

Tasks: Lead-up exercises for each tool, review of use and maintenance and safety of each tool. Review competency check list for each student.

Performance objective: To refamiliarize students with each tool by completing the lead up exercises and practicing using the tools and to develop safety competency.

Tools, supplies and reference materials:

Hand Tools: Tape measure, Combination square, speed square, Framing square, compass, protractor, sliding T-bevel, Framing square, straight edge, chalk line, block plane, chisel, C-clamp, Hand Screw Clamp, Bar/Pipe Clamps, Claw Hammer, Nail set, Adjustable, open ended and socket wrenches, Wood rasp, sanding block, utility knife.

Power Tools: Belt Sander, Circular Saw, Miter Saw, Electric Drill and twist/spade bits, Random Orbit Sander, Pneumatic stapler, and nailers, Router, Saber saw, Screw gun.

Materials: Gather the different species of wood commonly used in your shop. Include plywood and engineered materials and the corresponding fasteners for each.

Career Connections Project Book 2 pages: 26-64. (Enough for each student or small group)

Methods of instruction: Demonstration on how to identify and use and maintenance of each tool, lecture on safe work habits and respect for tools, reference to the Career Connections Book 1 and/or 2, and hands-on practice with each tool.

Estimated time: 4 hrs. **Number of students:** 10-15

Task analysis or activities: Students will work in small groups at shop tables, with all the previously mentioned hand or power tools, working together to complete all the lead-up exercises and helping each other as they progress at their own pace.

Evaluation: Students will be graded on their use of time, safety methods, quality of work, cleaning and organization of their work area, interaction with other students, and vocational employability skills grading rubric. Manipulative skills assessments and written evaluations.

Performance Notes:

Vocational Frameworks References

- 2.D.01 Recognize and describe the use of building materials.
- 2.D.06 Describe lumber storage techniques.
- 2.E.01 Describe and demonstrate the use and care of hand tools.
- 2.F.01 Demonstrate the use, storage, and maintenance of sawing tools.

English/Strand 3 Frameworks References:

RST Grades 9-10 #4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a technical context relevant to grades 9-10 texts and topics.

Frameworks References: Math

G-CO12 Make formal geometric constructions with a variety of tools.

Common Core References:

Read and listen critically for information understanding and enjoyment
Set goals and achieve them by organizing time, workspace, and resources effectively
Work both independently and in groups

SCANS references:**Foundation Skills:**

1. Basic skills— reading, writing, mathematics, speaking, and listening.
2. Thinking Skills-- thinking creatively, making decisions, solving problems, visualizing, knowing how to learn, and reasoning
3. Personal qualities--individual responsibility, self-esteem, sociability, self management, and integrity

Work Place Competencies

1. Resources--allocating time, money, material, space, and staff.
2. Interpersonal skills--working in teams, teaching others, serving customers, leading negotiating, and working well with culturally diverse populations.
3. Information--acquiring and evaluating data, organizing and maintaining files, interpreting & communicating, and using computer to process information
4. Systems--understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems.
5. Technology--selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies.

CAREER CONNECTIONS: PROJECT BOOK 2

Lesson Plan: Chapter 2, Review of Tools, Materials, and Fasteners

Time Required: One to two 50-minute class periods (two class periods are outlined below)

Goal:

To review key points about the hand tools, power tools, materials, and fasteners used in carpentry.

Objectives:

At the end of this chapter, students should be able to:

1. Recognize the need to handle hand tools and power tools with care.
2. Describe common types of hand tools and how to use them.
3. Describe common types of power tools and how to use them.
4. Describe the characteristics of commonly-used materials.
5. Describe the characteristics of commonly-used fasteners.

Instruction and Assessment:

The following provides a summary of steps for instruction and assessment.

Teach

Minutes	Activity
Class Period 1	
5	<i>Chapter 2 Introduction</i> Review the lesson goal and objectives with students.
10	<i>Section 1</i> Review the importance of taking good care of tools and handling them safely.
15	<i>Section 2</i> Review the hand tools commonly used in carpentry.
20	<i>Section 3</i> Review the power tools commonly used in carpentry. Discuss their features and how to use them properly.
Class Period 2	
15	<i>Section 4</i> Compare the types of materials commonly used in carpentry.
15	<i>Section 5</i> Review the types of fasteners commonly used in carpentry.
20	<i>Chapter Check</i> Allow students to complete answers to the questions. Ask students to review Chapter 3 for the next class.

Assess

Assessment	Assessment Method and Criteria
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Carpentry Frameworks Based Lesson Plan

Frameworks: 2.D, 2.E, 2.F

Activity	
Chapter Check questions	1 point for each correct answer