

Unit: Book 1 Projects

Title: Tool box

Skill(s) and Knowledge: Students will be able to: identify the tools and materials and processes needed to complete the tool box project, while maintaining a safe working environment.

Tasks: Fabricate the parts and assemble a tool box according to the working drawings and instructions.

Performance objective: Create a cut list, identify materials and fasteners, follow directions, read working drawings, use and maintain hand and power tools.

Tools, supplies and reference materials:

Materials: 1 ¼" x 3' dowel or closet pole, ¾" x 12" x 4' plywood, ½" x 2' x 4' plywood, 1 x 10 x 3' pine, 1 x 4 x 3' pine, 1 ¼" construction screws, wood glue, framing square, circular saw, wood rasp, saber saw, block plane, ⅜" drill, sandpaper, screw gun, compass, combination square, random orbit sander, 1 ¼" spade bit, drill index, tape measure, pencil, rag and bucket of water, claw hammer, and clamps, Career Connections Book 1 Chapter 11 pages: 286-295.

Methods of instruction: Provide each student with the materials to and tools to complete the project and allow students to work at their own pace referencing the Career Connections Book 1 Chapter 11 and following the instructions, and asking questions of the instructor as needed.

Estimated time: 8-10hrs. **Number of students:** 10-15

Task analysis or activities: Students will work in small groups at shop tables, with all the previously mentioned power tools, working together to complete all activities 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. Tool box project evaluation on page 317.

Performance Notes:

Vocational Frameworks References

- 2.E.01.01 Demonstrate use and maintenance of layout, marking and measuring tools.
- 2.E.01.02 Demonstrate use and maintenance of fastening and clamping tools.
- 2.F.01.01 Demonstrate use and maintenance of circular saw.
- 2.F.02.01 Demonstrate use and maintenance of portable drills.

English/Strand 3 Frameworks References:

RST Grades 9-10 #4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases in a technical context.

Frameworks References: Math

N-Q3 Identify significant figures in recorded measures and computed values based on the context given and the precision of the tools used.

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 1

Lesson Plan: Chapter 11, Tool Box

Time Required: Ten 50-minute class periods (to construct the tool box; instructions to construct a kids' BBQ table and storage chest are provided as alternative or additional projects, as needed)

- Allow time to check out students on safety and operation of tools to be used in the project if they have not already demonstrated safety and operation competency.
- Allow time, depending on the complexity of the project, for students to make up the cut list (1-2 hours).
- Allow time before the shop period ends for cleaning up the shop.

Goal:

Build on cutting and shaping skills to construct a tool box.

Objectives:

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

- Demonstrate use of a saber saw to make tight radius cuts
- Work with more detailed templates
- Preassemble parts

Cooperative Learning:

For more complex projects, students can work in pairs or in teams. In this case, both students in the pair or all members of the team will receive the same grade in evaluations. Working in pairs or in teams will shorten the time required to complete the projects if time in the shop is an issue. This method of building projects will also cut down on the amount of material used.

Procedures:

The following provides a summary of instructional and assessment procedures.

Teach

Minutes	Activity
Class Period 1	
10	<i>Chapter 11 Introduction</i> Review the lesson goal and objectives with students. Discuss expectations and how the project will be evaluated.
40	<i>Section 1</i> Review with students the illustrations shown of the tool box. Direct students in the development of a cut list for this project.
Class Period 2	
50	Review project illustrations with students. Allow time for students to finalize the cut list.
Class Period 3	

Carpentry Frameworks Based Lesson Plan

Framework: 2.E, 2.F

50	Have students begin laying out, cutting, and drilling the end pieces.
Class Period 4	
50	Guide students as they complete the end pieces.
Class Period 5	
50	Have students lay out and cut the side, bottom, and bracket pieces.
Class Period 6	
50	Have students begin assembling the tool box.
Class Period 7	
50	Guide students as they complete assembly of the tool box.
Class Period 8	
50	Have students install the level rack.
Class Period 9	
50	Have students install the saw holder.
Class Period 10	
40	Guide students through completion of the tool box, including sanding and finishing.
10	<i>Project Review</i> Review completed results. Assign alternative projects as needed.

Assess

Assessment Activity	Assessment Method and Criteria
Tool Box, Kids' BBQ Table, Storage Chest	See rubrics and evaluation sheets. Additionally, a skills matrix will be provided.