Carpentry Frameworks Based Lesson Plan

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

Unit: Book 2 Projects
Title: Skateboard Ramp

Skill(s) and Knowledge: Students will be able to: identify the tools and materials and processes needed to complete the skate board ramp project, while maintaining a safe working environment. New vocabulary: caulking gun, combination pilot-countersink bit, exterior wood glue, piano hinge, and poplar.

Tasks: Fabricate the parts and assemble a skateboard ramp.

Performance objective: Create a cut list, identify materials and fasteners, follow directions, read working drawings, use and maintain hand and power tools to complete the skateboard ramp project.

Tools, supplies and reference materials:
Materials: (1) ¼" 4'x 4' plywood, (1) ⅜" 4'x 4' plywood (1) ¾"4'x 4' plywood, (1) ½" 2'x 4' plywood, (6) 2 x 4 x 8 SPF, (1) 2" outside dia. steel pipe 4', (1) ⅛" x 10 ⅜" x 4' steel plate, (2) 11 oz.tubes of constuction adhesive, (2) 3" x 3" x ⅛" steel 90degree brackets, (24) 1" deck screws, (30) 3" deck screws, (64) 2" deck screws.
Tools: Caulking gun, center punch, Hammer, chalk box, circular saw, clamps, combination square, countersink bit for steel, electric drill, drill index, pencil, tape measure, saber saw, two sawhorses, screw gun.
Career Connection Book 2 Chapter 5 pages: 184-208.

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 2 Chapter 5 and following the instructions.

Estimated time: 18-20 hrs. **Number of students:** 15-20

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. Skateboard ramp project evaluation on page 235.

Performance Notes:

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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, clamping and dismantling tools.
2.F.01.01 Demonstrate use and maintenance of portable 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

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

CAREER CONNECTIONS: PROJECT BOOK 2

Lesson Plan: Chapter 5, Skateboard Ramp

Time Required: 12–22 class periods (22 periods are outlined below to construct the skateboard ramp)

- The chapter also includes instructions to construct an Adirondack chair and a portable folding workbench as alternative or additional projects, if 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 layout skills and learn how to use new materials and procedures to construct a skateboard ramp.

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

- Layout and cut two matching long arcs
- Build a frame sturdy enough to withstand use
- Manage working with several different types of materials in the same project
- Demonstrate how to apply adhesive with a caulking gun and how to work with a steel pipe and steel plate

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

Hours	**Activity**
Class Period 1	
1 hour	*Chapter 5 Introduction* Review the lesson goal and objectives with students. Discuss expectations and how the project will be evaluated. Review with students the illustrations shown of the skateboard ramp. Have students prepare the cut list for this project.
Class Periods 2–4	
3 hours	Show students how to cut the ends and center support.

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Class Periods 5–6	
2 hour	Guide students as they cut the blocking and wedges.
Class Periods 7–12	
6 hours	Lead students through assembling the sides and blocking.
Class Period 13	
1 hour	Show students how to cut and install the back supports.
Class Periods 14–15	
2 hours	Show students how to install the pipe.
Class Periods 16–19	
4 hours	Have students cut and install the ramp and top.
Class Periods 20–22	
3 hours	Have students complete construction of the ramp by installing the metal plate.

Assess

Assessment Activity	**Assessment Method and Criteria**
Skateboard Ramp, Adirondack Chair, Portable Folding Workbench	See rubrics and evaluation sheets. Additionally, a skills matrix will be provided.