

**Title:** Storage Cabinet Project

**Author:** Derek Tate

**Featured Externship Business:** [Diversified Woodcrafts](#)

**Overview / Description:**

This is a project-based lesson to introduce students to cabinet making. The project is designed to be a mid-level project for students who have already mastered basic carpentry skills such as safe machine use. Students will learn basic cabinetry terms and concepts and build a small cabinet.

**Subject(s):**

Technology Education - Wood Products Technology 2

**Grade Level(s):**

Grades 10-12

**Learning goals/objectives:**

*After completing this activity, students should be able to:*

- Identify and differentiate between European (frameless) and American (face frame) style cabinetry
- Identify cabinet parts
- Use basic cabinet terminology
- Understand basic cabinet construction
- Build a basic cabinet
- Safely use all machines and equipment needed to produce a cabinet

**Type of Activity:**

- X Individual
- X Small Group
- X Whole Class

**Teaching Strategies:**

- X Discussion
- X Partner work
- X Use of Technology
- X Performance Assessment
- X Demonstration

## **Content Standards:**

### Wisconsin Standards for Technology and Engineering

Content Area: MNF/Manufacturing

**Standard MNF1:** Students will be able to select and use manufacturing technologies.

- MNF1.a.7.h: Identify safety and health protections and procedures that are critical to worker well-being.
- MNF1.a.8.h: Use appropriate tools, materials, and machines to repair a manufacturing system.
- MNF1.e.8.h: Use a manufacturing system to produce a product.

Content Area: AC/Architecture and Construction

**Standard AC1:** Students will be able to select and use architecture and construction technologies.

- AC1.a.10.h: Analyze how structures are constructed using a variety of processes and procedures.
- AC1.a.11.h: The design of structures includes a number of requirements.
- AC1.a.13.h: Explain how structures can include prefabricated materials.
- AC1.b.14.h: Apply conventional construction measurement processes accurately.
- AC1.c.6.h: Maintain and care for hand tools used in residential and commercial construction.
- AC1.d.5.h: Demonstrate the use of portable power tools, such as circular saws, table saws, saber saws, drills, planers and sanders, safely and properly.
- AC1.d.6.h: Demonstrate the use of portable pneumatic tools safely and appropriately.
- AC1.d.7.h: Maintain and care for portable power tools and portable pneumatic tools.
- AC1.f.6.h: Demonstrate the safety procedures and practices in various work environment setting pertaining to residential and commercial construction.

## **Length of Time and length of class periods:**

This will vary greatly from school to school and class to class. In my current facilities, the goal is to complete this project in 45-50 class periods that are 45 minutes long.

## **Materials List:**

- You will need a well-equipped wood manufacturing facility to complete this project
- See [Project plans](#) for material list
- [Cabinet Parts and Terminology Powerpoint](#)
- [Cabinet Project Procedure Review](#)
- [Cabinet Project Evaluation Sheet](#)
- [Cabinet Project Parts and Terminology Quiz](#)

## **Directions (Step-by-Step):**

1. Complete safety demos, assignments, and tests for all necessary equipment.
2. Complete Cabinet Parts & Terminology presentation with [Powerpoint](#).

3. Hand out and review project plans with the students.
4. Use the [Project plans](#) to assess student competencies as the cabinet project proceeds.

### **Wrap-Up:**

At the end of the quarter, students will be ready to showcase their cabinet projects.

### **Formative/Summative Assessment:**

- Formative assessment will be ongoing observation and conferring with students as they complete their [Project plan](#) checklist. Students will also be completing a [Cabinet Project Procedure Review](#) to provide feedback on their project.
- Summative assessment will include a [Cabinet Project Parts and Terminology Quiz](#) as well as a final grade on their cabinets using the [Cabinet Project Evaluation Sheet](#).

### **Extension Activity for differentiation:**

- Students who complete early may work as mentors to those students still completing their projects.
- A representative from a cabinet manufacturer could be invited to class during the construction phase to offer feedback or at the completion of the project to review cabinets.

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## Cabinet Project Procedure Review

DIRECTIONS- In AT LEAST **2 or 3 full sentences**, answer the following questions. 2 points for each question.

1. What were the woodworking competencies learned in this projects? (What processes, tools, etc did you learn?)

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2. What things went well on this project?

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3. What things did not go well / what would you do differently?

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# Cabinet Project Evaluation Sheet

Name \_\_\_\_\_ Period \_\_\_\_\_

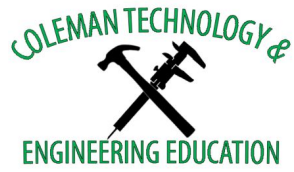
Project Name: Woods I – Presentation Case

	Student	Teacher
Plans	_____	_____ / 4
<ul style="list-style-type: none"><li>● Didn't lose them</li><li>● Name</li><li>● In decent shape</li><li>● Used procedure sheet appropriately and checked off each step</li></ul>		
Procedure Review	_____	_____ / 6
<ul style="list-style-type: none"><li>● 2 points for each question</li><li>● -1 pt for each sentence short or incomplete sentence</li></ul>		
Joinery (dados, rabbets, glue joints, etc.)	_____	_____ / 15
<ul style="list-style-type: none"><li>● -2 pt per defect</li></ul>		
Structure (square, straight, sizes)	_____	_____ / 15
<ul style="list-style-type: none"><li>● -3 pts per 1/16"</li></ul>		
Appearance (routing, overall appeal)	_____	_____ / 15
<ul style="list-style-type: none"><li>● -3 pts per visible flaw/ burn</li></ul>		
Sanding (edges, faces, profiles)	_____	_____ / 15
<ul style="list-style-type: none"><li>● -2 pts per scratch/ flaw</li></ul>		
Finish (stain, varnish, etc.)	_____	_____ / 15
<ul style="list-style-type: none"><li>● -2 pts per flaw</li></ul>		
Trim (routs, fit, corners, nails, size)	_____	_____ / 15
<ul style="list-style-type: none"><li>● -2 pts per flaw less than industry standard</li></ul>		
Total	_____	_____ /100

**Woods Technology 2**

Safety

Machine Tests



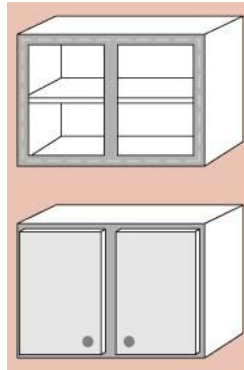
Name: \_\_\_\_\_

Date: \_\_\_\_\_

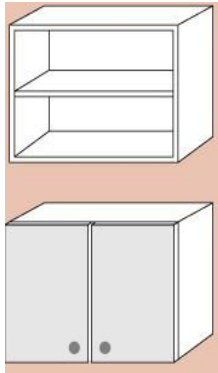
Label the two styles of cabinets below:



1. \_\_\_\_\_



2. \_\_\_\_\_

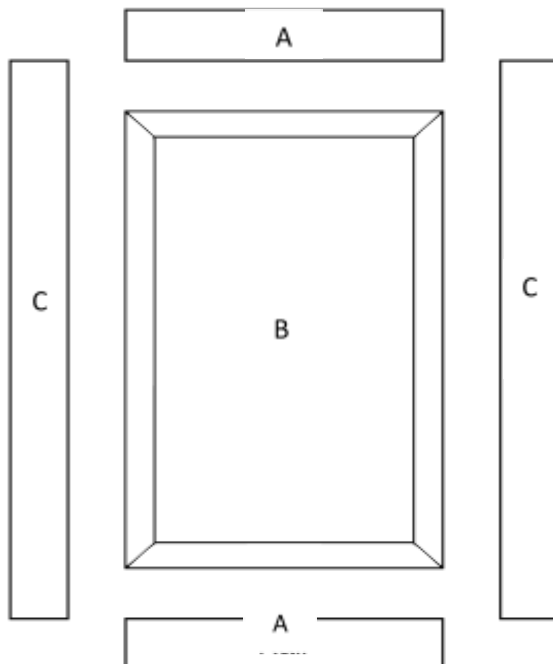


Match the cabinet door part with its name:

3. \_\_\_\_\_ Panel

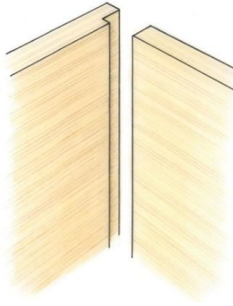
4. \_\_\_\_\_ Stile

5. \_\_\_\_\_ Rail



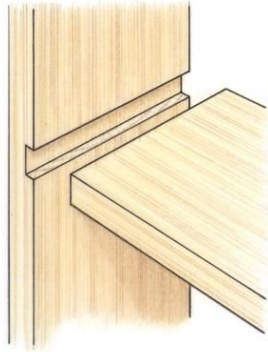
6. \_\_\_\_ What kind of cut is pictured?

- A. Dado
- B. Rabbet
- C. Rout
- D. Groove



7. \_\_\_\_ What kind of cut is pictured?

- A. Dado
- B. Rabbet
- C. Rout
- D. Groove



8. \_\_\_\_ What is called when you cut angles on pieces of trim to fit them tightly together?

- A. Angle
- B. Picture
- C. Frame
- D. Miter

9. \_\_\_\_ What machine is commonly used to make raised panels for cabinet doors?

- A. Table saw
- B. Miter saw
- C. Spindle sander
- D. Shaper

SQUARING A BOARD – Number the steps below to show the correct sequence of squaring a board.

10. \_\_\_\_ Plane to 1/16" over thickness
11. \_\_\_\_ Crosscut to exact length
12. \_\_\_\_ Joint better edge
13. \_\_\_\_ Rough rip 1/4" over width
14. \_\_\_\_ Joint better face
15. \_\_\_\_ Rip to 1/16" over width
16. \_\_\_\_ Joint to exact width
17. \_\_\_\_ Rough crosscut 1" oversize
18. \_\_\_\_ Crosscut better end

19. (2 points) Explain how to make a face frame fit flush with the sides of a cabinet:

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