

# ROCKWOOD

## ENGINEERING & Technology

### Materials Processing

### Lesson Plans Mr. Kush

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**August 29**

#### **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to comply with the set expectations and procedures for this class.  
Students will contemplate future job occupations and future education opportunities.

**ACTIVITIES:** Introduction & discussion of course  
Procedure / Policy Handout  
Distribute folder & Engineering Design Journal  
Complete the occupation questionnaire

**EVALUATION:** Procedure / Policy / Student Expectation signature form is due by Friday 31st

**ENRICHMENT:** Independent exploration of Rockwood's "Student Expectations"  
Be Respectful  
Be Prepared  
Be On Time  
  
Hundo

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present

**PA STANDARDS for Science and Technology:** N/A

**August 30**

#### **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to explain the role of a materials engineer.  
Students will be able to examine how materials scientists have improved our daily lives.

**ACTIVITIES:** "Materials Engineer" – handout  
Students will watch the video on Materials Engineer Profile

<http://www.youtube.com/watch?v=DtosXFgP7C4>

Discussion Activity

**EVALUATION:** Formal 10 point assessment of the “Materials Engineer” essay activity 5 points per response  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration and application of materials engineers

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.10D, 3.2.10B, 3.7.12

**August 31**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to identify and develop categories for materials from visual observation and personal experiences.

**ACTIVITIES:** In groups of two, students will identify and categorize manufactured materials that are present in the classroom to complete the “Manufactured Goods and Materials” activity handout.

**EVALUATION:** Informal assessment of completion of the handout (effort)  
Formal assessment on the completion of the handout  
Procedure / Policy / Student Expectation signature form is due Friday  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration of materials found in a classroom

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10

## September 1

### MATERIALS PROCESSING

- OBJECTIVES:** Students will be able to examine the growth, importance, and ecosystems, of Coastal Redwoods and observe their harvesting process methods.  
Students will discuss the impacts of proper natural resource management and create an informed opinion.
- ACTIVITIES:** Students will watch the video segments: National Geographic “Tallest tree found in Redwood National Park”, TED (Technology, Entertainment, Design) “Richard Preston – Climbing the World’s Biggest Trees”, “The General Sherman Tree - Sequoia National Park”, “Falling Old Growth Redwood”, “Crying Over Trees”, West Coast Falling- Canadian Style”
- EVALUATION:** Informal observation of the discussion on the impacts of proper natural resource management.  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
- ENRICHMENT:** Independent exploration of materials found in a classroom
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.5.7B, 3.5.10B, 3.5.712B, 3.8.7B, 3.8.7C, 3.8.10A, 3.8.10C

## September 5

### MATERIALS PROCESSING

- OBJECTIVES:** Students will be able to describe the two classifications of wood and list examples of each type, list the six ways to identify types of wood, identify the two major parts of wood’s structure, describe the moisture content of wood for different purposes, and list and describe four different ways to remove moisture.
- ACTIVITIES:** Students will take notes from the PowerPoint presentation on Wood as a material and participate in the discussion from personal experiences.  
Examine samples of wood
- EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
- ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.4.7A, 3.5.7B, 3.5.10B, 3.5.12B, 3.6.12A, 3.8.10A

## September 6

### MATERIALS PROCESSING

**OBJECTIVES:** Students will be sketch and label a cross section of a microscope tree slide.  
Students will be able to explain the role of natural resource conservation, capitalism, and job growth.

**ACTIVITIES:** In groups of two, students will use a microscope to observe and then sketch and label the main parts of a tree.  
Students who are waiting to use the microscopes will read the Dr. Seuss book, "The Lorax".

**EVALUATION:** Formal 10 point assessment on the completion of the sketching activity 5 points per sketch.  
Formal assessment on the completion of "The Lorax" response guide.  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration of wood at the microscopic level.  
Independent exploration of conservation vs. capitalism.

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.4.7A, 3.5.7B, 3.5.10B, 3.5.12B, 3.6.12A, 3.8.10A

## September 7

### MATERIALS PROCESSING

<b>OBJECTIVES:</b>	Students will be able to describe the growing seasons of a tree and the reason for growth rings on a tree
<b>ACTIVITIES:</b>	Review from yesterday's content. Students will take notes from the PowerPoint presentation on Wood as a material and participate in the discussion from personal experiences. Examine samples of wood
<b>EVALUATION:</b>	Informal assessment of completion of the fill in the blank notes handout (effort) Formal assessment at the end of this unit Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
<b>ENRICHMENT:</b>	Independent exploration of wood as a material
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room Option for preferential seating Option for individual guidance Verbal presentation of reading material by aid when present Additional time to complete assignments as necessary Modified Tests & Quizzes Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.4.7A, 3.5.7B, 3.5.10B, 3.5.12B, 3.6.12A, 3.8.10A

**September 8**

## **MATERIALS PROCESSING**

<b>OBJECTIVES:</b>	Students will be able to categorize three types of Industrial stock and identify by sight examples of them.
<b>ACTIVITIES:</b>	Review from yesterday's content. Students will take notes from the PowerPoint presentation on Wood as a material and participate in the discussion from personal experiences. Examine samples of wood
<b>EVALUATION:</b>	Informal assessment of completion of the fill in the blank notes handout (effort) Formal assessment at the end of this unit Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
<b>ENRICHMENT:</b>	Independent exploration of wood as a material
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room Option for preferential seating Option for individual guidance

Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.4.7A, 3.5.7B, 3.5.10B, 3.5.12B, 3.6.12A, 3.8.10A

## September 11

### MATERIALS PROCESSING

- OBJECTIVES:** Students will be able to categorize grades of lumber.
- ACTIVITIES:** Review from yesterday's content.  
Students will take notes from the PowerPoint presentation on Wood as a material and participate in the discussion from personal experiences.
- EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
- ENRICHMENT:** Independent exploration of wood as a material
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.4.7A, 3.5.7B, 3.5.10B, 3.5.12B, 3.6.12A, 3.8.10A

## September 12

### MATERIALS PROCESSING

- OBJECTIVES:** Students will be able to identify visually and describe with sketches the six types of wood defects.
- ACTIVITIES:** Review from yesterday's content.  
Students will take notes from the PowerPoint presentation on Wood as a material and participate in the discussion from personal experiences.  
Students will sketch the defects samples from the PPT.
- EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)

Formal assessment at the end of this unit

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.4.7A, 3.5.7B, 3.5.10B, 3.5.12B, 3.6.12A, 3.8.10A

**September 13**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to identify and sketch the six planes of any piece of wood. Students will be able to properly identify the dimensioning labels of any piece of wood.

**ACTIVITIES:** Review from yesterday's content.  
Students will take notes from the PowerPoint presentation on Wood as a material and participate in the discussion from personal experiences.  
Students will sketch the sample diagrams.  
**In groups of two students will measure and identify the thickness x width x length to the nearest ¼" on five different samples of stock.**

**EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.4.7A, 3.5.7B, 3.5.10B, 3.5.12B, 3.6.12A, 3.8.10A

## September 14

### MATERIALS PROCESSING

- OBJECTIVES:** Students will be able to square any piece of stock following the squaring of stock procedures.
- ACTIVITIES:** Review from yesterday's content.  
Students will take notes from the PowerPoint presentation on the squaring of stock procedures and participate in the discussion from personal experiences.  
Students will observe the process of squaring of stock by the machines in the correct order and job.  
Reminder of quiz tomorrow on the squaring of stock procedures.
- EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points  
Quiz on the squaring of stock procedures 12 points – students list the proper order of machines to use and what their function does to the stock.
- ENRICHMENT:** Independent exploration of wood as a material
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A

## September 15

### MATERIALS PROCESSING

- OBJECTIVES:** Students will be able to successfully complete the Squaring of Stock quiz for 12 points.  
Students will be able to examine the process of harvesting lumber, the processing of lumber products, to the production of consumer lumber products.
- ACTIVITIES:** Complete the squaring of stock quiz  
Watch the video, "The Manufacture of Pine and Hardwood Lumber".  
While watching the video, students will complete a corresponding fill in the blanks handout.
- EVALUATION:** Quiz on the squaring of stock procedures 12 points – students list the proper order of machines to use and what their function does to the stock.  
Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit



Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points  
Quiz on the squaring of stock procedures 12 points – students list the proper order of machines to use and what their function does to the stock.  
Formal assessment on the completion of the “The Manufacture of Pine and Hardwood Lumber” fill in the blanks handout.

**ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A

**September 18**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to identify the two basic types of cuts.  
Students will be able to identify the four factors to determine the best wood joint for an application.  
Students will be able to identify, describe, and sketch nine basic wood joints.  
Students will be able to identify, describe, and sketch 6 methods to improve basic wood joint strength.

**ACTIVITIES:** Students will take notes from the PowerPoint presentation on the nine basic wood joints and participate in the discussion from personal experiences.  
Students will sketch the sample diagrams.

**EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points  
Formal assessment on the completion of the “The Manufacture of Reconstituted Wood Products” fill in the blanks handout

**ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance

Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A

**September 19**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to identify and describe eight ways to improve joint strength.  
Students will be able to identify and describe the five defects the must be removed before finishing and the methods used to remove the defects.
- ACTIVITIES:** Students will take notes from the PowerPoint presentation on the eight ways to improve joint strength, removing five defects and removal methods, and participate in the discussion from personal experiences.  
Students will sketch the sample diagrams.
- EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points  
Formal assessment on the completion of the “The Manufacture of Reconstituted Wood Products” fill in the blanks handout
- ENRICHMENT:** Independent exploration of wood as a material
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A

**September 20**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to identify and describe different types of abrasive paper, their constituents, and methods for proper use.  
Students will be able to explain the difference between stain and finish.  
Students will be able to explain five reasons for using stain.  
Students will be able to describe the pros and cons of various application methods.
- ACTIVITIES:** Students will take notes from the PowerPoint presentation and participate in the discussion from personal experiences.
- EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points  
Formal assessment on the completion of the “The Manufacture of Reconstituted Wood Products” fill in the blanks handout
- ENRICHMENT:** Independent exploration of wood as a material
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A

**September 21**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to identify, describe four different types of stain.  
Students will be able to determine the pro and cons of each type of stain.  
Students will be able to identify and describe the three different lusters of stain.  
Students will be able to describe the chronological steps for stain and finish application.
- ACTIVITIES:** Students will take notes from the PowerPoint presentation and participate in the discussion from personal experiences.
- EVALUATION:** Informal assessment of completion of the fill in the blank notes handout (effort)  
Formal assessment at the end of this unit  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points  
Formal assessment on the completion of the “The Manufacture of Reconstituted Wood Products” fill in the blanks handout

**ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A

**September 22**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to locate and identify picture samples of industrial stock, wood joints, wood defects, and wood working machines.

**ACTIVITIES:** Students will use the Internet to complete the handout, "Industrial Stock, Wood Joint, Defects, & Machine Webquest".  
Students will locate the document on Mr. Kush's school webpage and save it to their student network drive.  
Students will print the paper and submit it when they are completed with the activity.

**EVALUATION:** Formal assessment 100 points (two points for each sample artifact) on the completion of the handout  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A – **3.7.7D**

**September 25**

## **MATERIALS PROCESSING**

- OBJECTIVES:** **CONTINUED:** Students will be able to locate and identify picture samples of industrial stock, wood joints, wood defects, and wood working machines.
- ACTIVITIES:** Students will use the Internet to complete the handout, "Industrial Stock, Wood Joint, Defects, & Machine Webquest".  
Students will locate the document on Mr. Kush's school webpage and save it to their student network drive.  
Students will print the paper and submit it when they are completed with the activity.
- EVALUATION:** Formal assessment 100 points (two points for each sample artifact) on the completion of the handout  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
- ENRICHMENT:** Independent exploration of wood as a material
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A – **3.7.7D**

**September 26**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to locate and identify picture samples of industrial stock, wood joints, wood defects, and wood working machines.
- ACTIVITIES:** Students will use the Internet to complete the handout, "Industrial Stock, Wood Joint, Defects, & Machine Webquest".  
Students will locate the document on Mr. Kush's school webpage and save it to their student network drive.  
Students will print the paper and submit it when they are completed with the activity.
- EVALUATION:** Formal assessment 100 points (two points for each sample artifact) on the completion of the handout  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
- ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A – **3.7.7D**

**September 27**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **CONTINUED:** Students will be able to locate and identify picture samples of industrial stock, wood joints, wood defects, and wood working machines.

**ACTIVITIES:** Students will use the Internet to complete the handout, “Industrial Stock, Wood Joint, Defects, & Machine Webquest”.  
Students will locate the document on Mr. Kush’s school webpage and save it to their student network drive.  
Students will print the paper and submit it when they are completed with the activity.

**EVALUATION:** Formal assessment 100 points (two points for each sample artifact) on the completion of the handout  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration of wood as a material

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A – **3.7.7D**

**September 28**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to calculate linear feet and square feet.  
Students will be able to solve for linear and square feet given a word problem with distracters.

<b>ACTIVITIES:</b>	Handout: Using Math in Woodworking Students will take notes and complete practice problems for solving for linear feet for dimensional lumber. Students will take notes and complete practice problems for solving for square feet .
<b>EVALUATION:</b>	Formal assessment on the completion of the homework problems Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
<b>ENRICHMENT:</b>	Independent exploration of solving for linear and square feet for practical uses.
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room Option for preferential seating Option for individual guidance Verbal presentation of reading material by aid when present Additional time to complete assignments as necessary Modified Tests & Quizzes Breaking up larger assignments into smaller manageable pieces
<b>PA STANDARDS for Science, Engineering, and Technology:</b> 3.1.10D, 3.1.10E	

**September 29**

## **MATERIALS PROCESSING**

<b>OBJECTIVES:</b>	Students will be able to recall terminology and content from memory to answer review questions from Unit 1 Wood Materials.
<b>ACTIVITIES:</b>	Students will participate in the “Jeopardy” review game
<b>EVALUATION:</b>	Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points. Formal assessment on the Unit 1 test on wood as a material
<b>ENRICHMENT:</b>	Independent exploration of wood as a material
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room Option for preferential seating Option for individual guidance Verbal presentation of reading material by aid when present Additional time to complete assignments as necessary Modified Tests & Quizzes Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1, 3.4, 3.5, 3.6, 3.8

## October 2

### MATERIALS PROCESSING

- OBJECTIVES:** Students will be able to complete the Wood as a Material test. 143 points
- ACTIVITIES:** Complete the Wood as a Material Test 143 points
- EVALUATION:** Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points.  
Formal assessment on the Unit 1 test on wood as a material
- ENRICHMENT:** Independent exploration of wood as a material
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1, 3.4, 3.5, 3.6, 3.8

## October 3

### MATERIALS PROCESSING

- OBJECTIVES:** Students will be able to identify and describe the function of hand tools and hand power tools.
- ACTIVITIES:** Students will label and sketch hand tools and hand power tools.
- EVALUATION:** Formal test evaluation at the completion of this mini unit. 98 points  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points.
- ENRICHMENT:** Independent exploration of hand and power tools
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces



**October 4**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to identify and describe the function of machine tools.
- ACTIVITIES:** Students will label and identify the function of machine tools.
- EVALUATION:** Formal test evaluation at the completion of this mini unit. 98 points  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points.
- ENRICHMENT:** Independent exploration of hand and power tools
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**October 5**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to complete the Hand and Power Tool Identification and Function test.
- ACTIVITIES:** Test: Hand and Power Tool Identification and Function 98 points
- EVALUATION:** Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points.  
Formal assessment on the Unit 1 test on wood as a material
- ENRICHMENT:** Independent exploration of wood as a material
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes

Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.2.7B, 3.4.7A, 3.7.10A

**October 6**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to understand and follow basic laboratory safety rules.  
Students will be aware and know the appropriate behaviors and expectations for laboratory activities.
- ACTIVITIES:** Students will take a tour of the lab facilities to review locations of safety equipment  
“Basic Safety Rules”- Handout  
Students will read and discuss the handout.  
Quiz 28 points “Engineering & Technology Basic Safety Rules Test”
- EVALUATION:** Formal assessment on the completion of the 28 point quiz “Engineering & Technology Basic Safety Rules Test”  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
- ENRICHMENT:** Independent exploration and application of laboratory safety practices
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10A, 3.7.10B

**October 10**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to comply with the set expectations and procedures for this class.  
Students will be able to use a ruler and measure to the nearest 1/16” inch.
- ACTIVITIES:** “Giant Inch” measuring review activity  
Completion of the following measuring activities:  
“Measuring Practice” handout  
“Measuring Practice 1” handout  
Measuring Test tomorrow

**EVALUATION:** Informal assessment of completion of the measuring practice guides  
Procedure / Policy / Student Expectation signature form is due Friday  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration and application of measuring  
Measuring game activity at <http://www.rsinnovative.com/rulergame/>

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.10A, 3.1.7E, 3.2.7A, 3.6.10B, 3.7.10A

**October 11**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will nominate and then vote for members of the class to fill the Engineering & Technology Club officers positions for President and Treasurer.  
Students will be able to comply with the set expectations and procedures for this class.  
Students will be able to use a ruler and measure to the nearest 1/16" inch.

**ACTIVITIES:** "Measuring Practice 2" handout  
Measuring Test tomorrow

**EVALUATION:** Informal assessment of completion of the measuring practice guides  
Procedure / Policy / Student Expectation signature form is due Friday  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

**ENRICHMENT:** Independent exploration and application of measuring  
Measuring game activity at <http://www.rsinnovative.com/rulergame/>

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.10A, 3.1.7E, 3.2.7A, 3.6.10B, 3.7.10A

**October 12**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to operate and accurately measure with digital calipers.  
Students will be able to complete the measuring test.
- ACTIVITIES:** Digital calipers demonstration  
Digital calipers measuring activity  
Measuring Test
- EVALUATION:** Informal assessment of completion of the measuring practice guides  
Procedure / Policy / Student Expectation signature form is due Friday  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
- ENRICHMENT:** Independent exploration and application of measuring using digital calipers
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.10D, 3.2.10B, 3.7.12

**October 13**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to operate and accurately measure with dial calipers.  
Students will be able to complete the digital caliper test
- ACTIVITIES:** "Measuring with Digital Calipers" – handout / test  
Dial calipers zeroing out demonstration  
Dial calipers procedure activity  
<http://www.wisc-online.com/objects/ViewObject.aspx?ID=MSR4303>  
Begin "Measuring with Dial Calipers" – handout / test
- EVALUATION:** "Measuring with Digital Calipers" – handout / test  
"Measuring with Dial Calipers" – handout / test  
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points
- ENRICHMENT:** Independent exploration and application of measuring using digital calipers

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.10D, 3.2.10B, 3.7.12

**October 16**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to know standard safety and operating procedures for the power hand tools and stationary equipment.

**ACTIVITIES:** Students will read and discuss in detail the PA Safety Guide for Engineering, Science, and Technology guide for lab equipment. Students will participate in safety features discussion. Students will analyze sample stock examples for case studies.

**EVALUATION:** Informal evaluation of handout, note completion, and participation  
Formal evaluation of standard PA safety test for each machine.

**ENRICHMENT:** Independent exploration of safety practices when using power equipment.

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 17**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to know standard safety and operating procedures for the power hand tools and stationary equipment.  
Students will be able to complete the tests for the PA Safety Guide for Engineering, Science, and Technology guide for lab equipment with 100% proficiency.

<b>ACTIVITIES:</b>	Students will read and discuss in detail the PA Safety Guide for Engineering, Science and Technology guide for lab equipment. Students will participate in safety features discussion. Students will analyze sample stock examples for case studies. Students will discuss the correct answers with reasoning for all incorrect items on the safety tests. Complete safety tests. Review answers for the safety tests.
<b>EVALUATION:</b>	Formal evaluation of standard PA safety test for each machine.
<b>ENRICHMENT:</b>	Independent exploration of safety practices when using power equipment.
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room Option for preferential seating Option for individual guidance Verbal presentation of reading material by aid when present Additional time to complete assignments as necessary Modified Tests & Quizzes Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 18**

## **MATERIALS PROCESSING**

<b>OBJECTIVES:</b>	Students will be able to safely and accurately operate various types of power equipment.
<b>ACTIVITIES:</b>	Students will select a “teacher” to present the selected power tool. The “teacher” will lead the reading of the PA Power Tools Safety Guide. The “teacher” will lead the discussion of safety practices for the various types of power equipment with guidance from Mr. Kush. The “teacher” will demonstrate the power tool to the class while noting the safety features, proper tool use, and set-up with guidance from Mr. Kush. Students will participate in safety features discussion and then demonstrate the machine Completion of PA safety test for the machine
<b>EVALUATION:</b>	Informal assessment of cutting accuracy and safety practices of machine set-up and use Informal evaluation of handout, note completion, and participation Formal evaluation of safety test
<b>ENRICHMENT:</b>	Independent exploration of safety and use practices for the various types power equipment.
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room Option for preferential seating Option for individual guidance Verbal presentation of reading material by aid when present Additional time to complete assignments as necessary Modified Tests & Quizzes

Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 19**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to safely and accurately operate various types of power equipment.
- ACTIVITIES:** Students will select a “teacher” to present the selected power tool.  
The “teacher” will lead the reading of the PA Power Tools Safety Guide.  
The “teacher” will lead the discussion of safety practices for the various types of power equipment with guidance from Mr. Kush.  
The “teacher” will demonstrate the power tool to the class while noting the safety features, proper tool use, and set-up with guidance from Mr. Kush.  
Students will participate in safety features discussion and then demonstrate the machine  
Completion of PA safety test for the machine
- EVALUATION:** Informal assessment of cutting accuracy and safety practices of machine set-up and use  
Informal evaluation of handout, note completion, and participation  
Formal evaluation of safety test
- ENRICHMENT:** Independent exploration of safety and use practices for the various types power equipment.
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 20**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to safely and accurately operate various types of power equipment.
- ACTIVITIES:** Students will select a “teacher” to present the selected power tool.  
The “teacher” will lead the reading of the PA Power Tools Safety Guide.  
The “teacher” will lead the discussion of safety practices for the various types of power equipment with guidance from Mr. Kush.  
The “teacher” will demonstrate the power tool to the class while noting the safety features, proper tool use, and set-up with guidance from Mr. Kush.  
Students will participate in safety features discussion and then demonstrate the machine

Completion of PA safety test for the machine

**EVALUATION:** Informal assessment of cutting accuracy and safety practices of machine set-up and use  
Informal evaluation of handout, note completion, and participation  
Formal evaluation of safety test

**ENRICHMENT:** Independent exploration of safety and use practices for the various types power equipment.

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 23**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Students will be able to safely and accurately operate various types of power equipment.

**ACTIVITIES:** Students will select a “teacher” to present the selected power tool.  
The “teacher” will lead the reading of the PA Power Tools Safety Guide.  
The “teacher” will lead the discussion of safety practices for the various types of power equipment with guidance from Mr. Kush.  
The “teacher” will demonstrate the power tool to the class while noting the safety features, proper tool use, and set-up with guidance from Mr. Kush.  
Students will participate in safety features discussion and then demonstrate the machine  
Completion of PA safety test for the machine

**EVALUATION:** Informal assessment of cutting accuracy and safety practices of machine set-up and use  
Informal evaluation of handout, note completion, and participation  
Formal evaluation of safety test

**ENRICHMENT:** Independent exploration of safety and use practices for the various types power equipment.

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
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Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B



**October 24**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to safely and accurately operate various types of power equipment.
- ACTIVITIES:** Students will select a “teacher” to present the selected power tool.  
The “teacher” will lead the reading of the PA Power Tools Safety Guide.  
The “teacher” will lead the discussion of safety practices for the various types of power equipment with guidance from Mr. Kush.  
The “teacher” will demonstrate the power tool to the class while noting the safety features, proper tool use, and set-up with guidance from Mr. Kush.  
Students will participate in safety features discussion and then demonstrate the machine  
Completion of PA safety test for the machine
- EVALUATION:** Informal assessment of cutting accuracy and safety practices of machine set-up and use  
Informal evaluation of handout, note completion, and participation  
Formal evaluation of safety test
- ENRICHMENT:** Independent exploration of safety and use practices for the various types power equipment.
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
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Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

# **Begin Storage Chest Project**

**October 25**

## **MATERIALS PROCESSING**

- OBJECTIVES:** Students will be able to process a piece of rough stock to  $\frac{3}{4}$ " x 6" x 25" by using the order of operations process.
- ACTIVITIES:** Order of operations review – process rough stock to required dimensions.

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of squaring of stock
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
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**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 26**

## **MATERIALS PROCESSING**

- OBJECTIVES:** **Day 1** Students will be able to process C Center Panel from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Start the process below:

**C Center Panel – select stock 1" x 5 ½" x 16" minimum QTY 6**

### **PROCESS MATERIALS**

**C Center Panel** finished size: ¾" x 15" x 15 ½" qty 2

**NOTE: Panel is made from 3 boards (¾" x 5" x 16") glued together**

- A. Radial Arm Saw / Miter Saw** – if stock length is >16" cut it to 16"
- B. Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is > 7 ¾", carefully rip it to 6" using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is < 7 ¾", go to step C.**

**C. Jointer** – Fixes flat face - Makes a flat face \*cupped side down (arrow pointing down) on the jointer table

- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to wood's final width of 5"  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planer** (small planer) – Thickness – reduce to the exact thickness of  $\frac{3}{4}$ " <See Mr. Kush for a planer tip!!>
- G. **Miter Saw** – Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 16"  
\*\*Remember to check what side of the line you need to cut on\*\*
- H. **Mark** – Lightly write your name and the letter "C" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
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**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 27**

## MATERIALS PROCESSING

**OBJECTIVES:** **Day 2** Students will be able to process C Center Panel from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Continue the process below:

**C Center Panel** – select stock 1" x 5  $\frac{1}{2}$ " x 16" minimum **QTY 6**

### PROCESS MATERIALS

**C Center Panel** finished size:  $\frac{3}{4}$ " x 15" x 15  $\frac{1}{2}$ " qty 2

**NOTE: Panel is made from 3 boards ( $\frac{3}{4}$ " x 5" x 16") glued together**

- A. **Radial Arm Saw / Miter Saw** – if stock length is >16" cut it to 16"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is  $> 7 \frac{3}{4}$ ", carefully rip it to 6" using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is  $< 7 \frac{3}{4}$ ", go to step C.**

- C. Jointer** – Fixes flat face - Makes a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. Table Saw** – Cut to wood's final width of 5"  
[Put the jointed edge against the fence and the flat face on the table]
- F. Planner** (small planer) – Thickness – reduce to the exact thickness of  $\frac{3}{4}$ " **<See Mr. Kush for a planer tip!!>**
- G. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 16"  
\*\*Remember to check what side of the line you need to cut on\*\*
- H. Mark** – Lightly write your name and the letter "**C**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 30**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 3** Students will be able to process C Center Panel from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Continue the process below:

**C Center Panel** – select stock 1" x 5  $\frac{1}{2}$ " x 16" minimum QTY 6

### **PROCESS MATERIALS**

**C Center Panel** finished size:  $\frac{3}{4}$ " x 15" x 15  $\frac{1}{2}$ " qty 2

**NOTE: Panel is made from 3 boards ( $\frac{3}{4}$ " x 5" x 16") glued together**

**A. Radial Arm Saw / Miter Saw** – if stock length is  $> 16$ " cut it to 16"

**B. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is  $> 7 \frac{3}{4}$ ", carefully rip it to 6" using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is  $< 7 \frac{3}{4}$ ", go to step C.**

**C. Jointer** – Fixes flat face - Makes a flat face \*cupped side down (arrow pointing down) on the jointer table

**D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

**E. Table Saw** – Cut to wood's final width of 5"

[Put the jointed edge against the fence and the flat face on the table]

**F. Planner** (small planer) – Thickness – reduce to the exact thickness of  $\frac{3}{4}$ " **<See Mr. Kush for a planer tip!!>**

**G. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 16"

**\*\*Remember to check what side of the line you need to cut on\*\***

**H. Mark** – Lightly write your name and the letter "**C**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**October 31**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 4** Students will be able to process C Center Panel from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**C Center Panel** – select stock 1" x 5  $\frac{1}{2}$ " x 16" minimum QTY 6

## PROCESS MATERIALS

**C Center Panel** finished size:  $\frac{3}{4}$ " x 15" x 15  $\frac{1}{2}$ " qty 2

**NOTE: Panel is made from 3 boards ( $\frac{3}{4}$ " x 5" x 16") glued together**

**A. Radial Arm Saw / Miter Saw** – if stock length is >16" cut it to 16"

**B. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is > 7  $\frac{3}{4}$ ", carefully rip it to 6" using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is < 7  $\frac{3}{4}$ ", go to step C.**

**C. Jointer** – Fixes flat face - Makes a flat face \*cupped side down (arrow pointing down) on the jointer table

**D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

**E. Table Saw** – Cut to wood's final width of 5"

[Put the jointed edge against the fence and the flat face on the table]

**F. Planner** (small planer) – Thickness – reduce to the exact thickness of  $\frac{3}{4}$ " <See Mr. Kush for a planer tip!!>

**G. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 16"

**\*\*Remember to check what side of the line you need to cut on\*\***

**H. Mark** – Lightly write your name and the letter "C" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 1**

## MATERIALS PROCESSING

**OBJECTIVES:** **Day 5** Students will be able to process C Center Panel from rough stock.  
Students will be able to follow specific directions

Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**C Center Panel** – select stock 1" x 5 ½" x 16" minimum QTY 6

**PROCESS MATERIALS**

**C Center Panel** finished size: ¾" x 15" x 15 ½" qty 2

**NOTE: Panel is made from 3 boards (¾" x 5" x 16") glued together**

**A. Radial Arm Saw / Miter Saw** – if stock length is >16" cut it to 16"

**B. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 ¾", carefully rip it to 6" using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 ¾", **go to step C.**

**C. Jointer** – Fixes flat face - Makes a flat face \*cupped side down (arrow pointing down) on the jointer table

**D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

**E. Table Saw** – Cut to wood's final width of 5"

[Put the jointed edge against the fence and the flat face on the table]

**F. Planner** (small planer) – Thickness – reduce to the exact thickness of ¾" <See Mr. Kush for a planer tip!!>

**G. Miter Saw** - Cut off ¼" off of one end, then cut to exact length of 16"

\*\*Remember to check what side of the line you need to cut on\*\*

**H. Mark** – Lightly write your name and the letter "C" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 2**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 1** Students will be able to process T Top from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Start the process below:

### **PROCESS MATERIALS**

**T Top – select stock 1" x 5" x 32" minimum QTY 4**

### **PROCESS MATERIALS**

T Top finished size:  $\frac{3}{4}$ " x 19" x 31  $\frac{1}{2}$ "

**NOTE: T TOP Panel is made from 4 boards ( $\frac{3}{4}$ " x 4  $\frac{3}{4}$ " x 32") glued together**

- A. **Radial Arm Saw / Miter Saw** – if stock length is >32" cut it to 32"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is > 7  $\frac{3}{4}$ ", carefully rip it to 5" using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is < 7  $\frac{3}{4}$ ", go to step C.**

- C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to T Top's final width of 4  $\frac{3}{4}$ "  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{4}$ " <Use the planer technique!>
- G. **Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 32"  
\*\*Remember to check what side of the line you need to cut on
- H. **Mark** – Lightly write your name and letter "T" on the bottom or top of this piece in **PENCIL**

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating



Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 6**

**MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 2** Students will be able to process T Top from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Continue the process below:

**PROCESS MATERIALS**

**T Top – select stock 1" x 5" x 32" minimum QTY 4**

**PROCESS MATERIALS**

T Top finished size:  $\frac{3}{4}$ " x 19" x 31  $\frac{1}{2}$ "

**NOTE: T TOP Panel is made from 4 boards ( $\frac{3}{4}$ " x 4  $\frac{3}{4}$ " x 32") glued together**

- A. **Radial Arm Saw / Miter Saw** – if stock length is >32" cut it to 32"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is > 7  $\frac{3}{4}$ ", carefully rip it to 5" using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is < 7  $\frac{3}{4}$ ", go to step C.**

- C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to T Top's final width of 4  $\frac{3}{4}$ "  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{4}$ " <Use the planer technique!>
- G. **Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 32"  
\*\*Remember to check what side of the line you need to cut on
- H. **Mark** – Lightly write your name and letter "T" on the bottom or top of this piece in **PENCIL**

**EVALUATION:**      Informal evaluation of class participation and cleanup duties

Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 7**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 3** Students will be able to process T Top from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

**T Top – select stock 1" x 5" x 32" minimum QTY 4**

### **PROCESS MATERIALS**

T Top finished size:  $\frac{3}{4}$ " x 19" x 31  $\frac{1}{2}$ "

**NOTE: T TOP Panel is made from 4 boards ( $\frac{3}{4}$ " x 4  $\frac{3}{4}$ " x 32") glued together**

- A. **Radial Arm Saw / Miter Saw** – if stock length is >32" cut it to 32"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is > 7  $\frac{3}{4}$ ", carefully rip it to 5" using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is < 7  $\frac{3}{4}$ ", go to step C.**

- C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to T Top's final width of 4  $\frac{3}{4}$ "

[Put the jointed edge against the fence and the flat face on the table]

- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{4}$ " <Use the planer technique!>
- G. **Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 32"  
\*\*Remember to check what side of the line you need to cut on
- H. **Mark** – Lightly write your name and letter "T" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:**

3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 8**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 4** Students will be able to process T Top from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

**T Top** – select stock 1" x 5" x 32" minimum QTY 4

### **PROCESS MATERIALS**

T Top finished size:  $\frac{3}{4}$ " x 19" x 31  $\frac{1}{2}$ "

**NOTE: T TOP Panel is made from 4 boards ( $\frac{3}{4}$ " x 4  $\frac{3}{4}$ " x 32") glued together**

- A. **Radial Arm Saw / Miter Saw** – if stock length is >32" cut it to 32"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7  $\frac{3}{4}$ ", carefully rip it to 5" using the table saw then go to step C.

**\*\*If your stock is cupped and its width is < 7 ¾", go to step C.**

- C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to T Top's final width of 4 ¾"  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of 3/4" <Use the planer technique!>
- G. **Miter Saw** - Cut off ¼" off of one end, then cut to exact length of 32"  
\*\*Remember to check what side of the line you need to cut on
- H. **Mark** – Lightly write your name and letter "T" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 9**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 5** Students will be able to process T Top from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

**T Top** – select stock 1" x 5" x 32" minimum QTY 4

### **PROCESS MATERIALS**

T Top finished size: ¾" x 19" x 31 ½"

**NOTE: T TOP Panel is made from 4 boards (¾" x 4 ¾" x 32") glued together**

- A. **Radial Arm Saw / Miter Saw** – if stock length is >32" cut it to 32"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 ¾", carefully rip it to 5" using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 ¾", **go to step C.**

- C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to T Top's final width of 4 ¾"  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of ¾" <Use the planer technique!>
- G. **Miter Saw** - Cut off ¼" off of one end, then cut to exact length of 32"  
\*\*Remember to check what side of the line you need to cut on
- H. **Mark** – Lightly write your name and letter "T" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 10**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **DAY 1** Students will be able to prepare stock, setup and use the biscuit jointer  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Start the process below:

1. Use the diagram to mark the location for the biscuit joints

### Biscuit Joints

- A. Set the biscuit jointer to the No. 10 setting
- B. Set the biscuit jointer height of cut to  $\frac{3}{8}$ "
- C. Get two scrap pieces of wood that are exactly  $\frac{3}{4}$ " thick
- D. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
- E. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
- F. **Use the diagram below** to layout the biscuit joint locations

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joining

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 14**

## MATERIALS PROCESSING

**OBJECTIVES:** **DAY 2** Students will be able to prepare stock, setup and use the biscuit jointer  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Continue the process below:

2. Use the diagram to mark the location for the biscuit joints

### Biscuit Joints

- G. Set the biscuit jointer to the No. 10 setting
- H. Set the biscuit jointer height of cut to  $\frac{3}{8}$ "
- I. Get two scrap pieces of wood that are exactly  $\frac{3}{4}$ " thick
- J. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
- K. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
- L. **Use the diagram below** to layout the biscuit joint locations

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joining

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments

T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 15**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **DAY 3** Students will be able to prepare stock, setup and use the biscuit jointer  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

3. Use the diagram to mark the location for the biscuit joints

### **Biscuit Joints**

- M.** Set the biscuit jointer to the No. 10 setting
- N.** Set the biscuit jointer height of cut to  $\frac{3}{8}$ "
- O.** Get two scrap pieces of wood that are exactly  $\frac{3}{4}$ " thick
- P.** Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
- Q.** Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
- R.** **Use the diagram below** to layout the biscuit joint locations

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joining

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 16**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **DAY 4** Students will be able to prepare stock, setup and use the biscuit jointer  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

4. Use the diagram to mark the location for the biscuit joints

### **Biscuit Joints**

- S. Set the biscuit jointer to the No. 10 setting
- T. Set the biscuit jointer height of cut to 3/8"
- U. Get two scrap pieces of wood that are exactly 3/4" thick
- V. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
- W. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
- X. Use the **diagram below** to layout the biscuit joint locations

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of biscuit joining

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 17**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **DAY 5** Students will be able to prepare stock, setup and use the biscuit jointer  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

5. Use the diagram to mark the location for the biscuit joints

### **Biscuit Joints**

- Y. Set the biscuit jointer to the No. 10 setting
- Z. Set the biscuit jointer height of cut to 3/8"



- AA.** Get two scrap pieces of wood that are exactly  $\frac{3}{4}$ " thick
- BB.** Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
- CC.** Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
- DD.** Use the **diagram below** to layout the biscuit joint locations

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joining

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

## November 20

### MATERIALS PROCESSING

**OBJECTIVES:** **DAY 1** Students will be able to prepare stock to glue up T – Top  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Start the process below:

1. Use the diagram to set up for gluing procedure

#### Glue-Up

- A. Arrange the 4 boards with alternating growth ring orientation on top of 3 clamps with strips of paper  
*SEE DIAGRAM*
- B. Apply a small amount of Tight Bond wood glue to each of the edges to be glued
- C. Prepare a damp sponge
- D. Place a third clamp in the center of the boards in the opposite direction of the clamps on the bottom
- E. Slowly tighten each of the clamps and use the sponge to clean any of the glue squeeze out

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of adhesive applications

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments

T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 21**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **DAY 2** Students will be able to prepare stock to glue up T – Top  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

2. Use the diagram to set up for gluing procedure

### **Glue-Up**

- F. Arrange the 4 boards with alternating growth ring orientation on top of 3 clamps with strips of paper  
*SEE DIAGRAM*
- G. Apply a small amount of Tight Bond wood glue to each of the edges to be glued
- H. Prepare a damp sponge
- I. Place a third clamp in the center of the boards in the opposite direction of the clamps on the bottom
- J. Slowly tighten each of the clamps and use the sponge to clean any of the glue squeeze out

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of adhesive applications

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 22**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **DAY 3** Students will be able to prepare stock to glue up T – Top  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

3.    Use the diagram to set up for gluing procedure

### **Glue-Up**

- K.   Arrange the 4 boards with alternating growth ring orientation on top of 3 clamps with strips of paper  
      *SEE DIAGRAM*
- L.   Apply a small amount of Tight Bond wood glue to each of the edges to be glued
- M.   Prepare a damp sponge
- N.   Place a third clamp in the center of the boards in the opposite direction of the clamps on the bottom
- O.   Slowly tighten each of the clamps and use the sponge to clean any of the glue squeeze out

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of adhesive applications

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 29**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **DAY 4** Students will be able to prepare stock to glue up T – Top  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

4.    Use the diagram to set up for gluing procedure

### **Glue-Up**

- P. Arrange the 4 boards with alternating growth ring orientation on top of 3 clamps with strips of paper  
*SEE DIAGRAM*
- Q. Apply a small amount of Tight Bond wood glue to each of the edges to be glued
- R. Prepare a damp sponge
- S. Place a third clamp in the center of the boards in the opposite direction of the clamps on the bottom
- T. Slowly tighten each of the clamps and use the sponge to clean any of the glue squeeze out

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of adhesive applications

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**November 30**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 1** Students will be able to process A Side Panel Stiles from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Start the process below:

### **PROCESS MATERIALS**

**1. A Side Panel Stiles** – select stock 1" x 2 ¾" x 21" minimum **QTY 4**

### **PROCESS MATERIALS**

**A Side Panel Stiles** Top finished size: ¾" x 2 ¼" x 20"

**A. Radial Arm Saw / Miter Saw** – if stock length is >21" cut it to 21"

**B. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is > 7 ¾", carefully rip it to 2 ¾" using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is  $< 7 \frac{3}{4}$ ", go to step C.**

- C. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. Table Saw** – Cut to **A Side Panel Stile's** final width of  $2 \frac{1}{4}$  "  
[Put the jointed edge against the fence and the flat face on the table]
- F. Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{4}$ " <Use the planer technique!>
- G. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 20"  
\*\*Remember to check what side of the line you need to cut on
- H. Mark** – Lightly write your name and letter "**A**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 1**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 2** Students will be able to process A Side Panel Stiles from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

**2. A Side Panel Stiles** – select stock  $1" \times 2 \frac{3}{4}" \times 21"$  minimum **QTY 4**

### **PROCESS MATERIALS**

**A Side Panel Stiles** Top finished size:  $\frac{3}{4}" \times 2 \frac{1}{4}" \times 20"$

- C. Radial Arm Saw / Miter Saw** – if stock length is  $> 21"$  cut it to 21"
- D. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**\*\*If your stock is cupped like the diagram and its width is  $> 7 \frac{3}{4}$ ", carefully rip it to  $2 \frac{3}{4}$ " using the table saw then go to step C.**

**\*\*If your stock is cupped and its width is  $< 7 \frac{3}{4}$ ", go to step C.**

- I. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- J. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- K. **Table Saw** – Cut to **A Side Panel Stile's** final width of  $2 \frac{1}{4}$  "  
[Put the jointed edge against the fence and the flat face on the table]
- L. **Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{4}$ " <Use the planer technique!>
- M. **Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 20"  
\*\*Remember to check what side of the line you need to cut on
- N. **Mark** – Lightly write your name and letter "**A**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

## December 4

### MATERIALS PROCESSING

**OBJECTIVES:** **Day 3** Students will be able to process A Side Panel Stiles from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

#### PROCESS MATERIALS

**3. A Side Panel Stiles** – select stock  $1" \times 2 \frac{3}{4}" \times 21"$  minimum **QTY 4**

## PROCESS MATERIALS

**A Side Panel Stiles** Top finished size:  $\frac{3}{4}$ " x  $2\frac{1}{4}$ " x 20"

**E. Radial Arm Saw / Miter Saw** – if stock length is >21" cut it to 21"

**F. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is >  $7\frac{3}{4}$ ", carefully rip it to  $2\frac{3}{4}$ " using the table saw then go to step C.

\*\*If your stock is cupped and its width is <  $7\frac{3}{4}$ ", **go to step C.**

**O. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table

**P. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

**Q. Table Saw** – Cut to **A Side Panel Stile's** final width of  $2\frac{1}{4}$ "

[Put the jointed edge against the fence and the flat face on the table]

**R. Planer** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{4}$ " <Use the planer technique!>

**S. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 20"

\*\*Remember to check what side of the line you need to cut on

**T. Mark** – Lightly write your name and letter "**A**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 5**

## MATERIALS PROCESSING

**OBJECTIVES:** **Day 4** Students will be able to process A Side Panel Stiles from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**PROCESS MATERIALS**

**4. A Side Panel Stiles – select stock 1" x 2 ¾" x 21" minimum QTY 4**

**PROCESS MATERIALS**

**A Side Panel Stiles** Top finished size: ¾" x 2 ¼" x 20"

**G. Radial Arm Saw / Miter Saw** – if stock length is >21" cut it to 21"

**H. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 ¾", carefully rip it to 2 ¾" using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 ¾", **go to step C.**

**U. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table

**V. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

**W. Table Saw** – Cut to **A Side Panel Stile's** final width of 2 ¼"

[Put the jointed edge against the fence and the flat face on the table]

**X. Planer** (small planer) – thickness – Reduce to the exact thickness of 3/4" <Use the planer technique!>

**Y. Miter Saw** - Cut off ¼" off of one end, then cut to exact length of 20"

\*\*Remember to check what side of the line you need to cut on

**Z. Mark** – Lightly write your name and letter "**A**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
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**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B



**December 6**

## **MATERIALS PROCESSING**

**OBJECTIVES:**

- Day 1** Students will be able to process C Center Panels contour cuts on the table saw.
- Students will be able to follow specific directions
- Students will be able to explain why raised panels are used.
- Students will be able to identify the parts of a raised panel.
- Students will be able to demonstrate safe machine setup
- Students will be able to use the processing machines safely, correctly, and efficiently
- UNIT** – Students will be able to construct a raised panel
- Students will be able to critique the completed panel

### **ACTIVITIES:**

**PPT Presentation: Processing Raised Panels – with diagrams**

**Handout – “Demonstration Survey”**

**Get Safe**

Start the process below:

### **PROCESS MATERIALS**

#### **7. C Center Panel – 15” x 15 ½” QTY 2**

1. **Radial Arm Saw** – cut both of the C Center Panels to the finished size of 15” x 15 ½”
2. **Table Saw**
  - A. Carefully remove the blade guard.
  - B. Change the blade to a thick kerf rip blade.
  - C. Lower the blade below the table surface and clamp a strong, long, and perfectly straight MDF board across its top dead center at 90° to the blade face. Use the miter gauge to align the board and then clamp the board to the table at both ends.
  - D. **Raise the table saw blade 1/16” above the table surface.**
  - E. **Use a push pad in the center of each panel to push all four sides of both center panels along the guide board and across the blade. Slow, steady passes across the blade will yield the best cuts and reduce sanding after the cuts have been completed. The push pad in the center of each panel will help the panel from tipping as the edges get thinner.**
  - F. **Repeat the process, raising the blade 1/16” after each series of passes until the edges of the panels fit loosely into the stile and rail grooves.**
  - G. **Be sure the panels can move freely inside the grooves to allow for expansion and contraction of the wood.**

### **EVALUATION:**

Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives  
Formal assessment of “Demonstration Survey” 5 points  
**Unit** – Rubric assessment of completed raised panel assembly  
**Unit** – Student critique of completed raised panel assembly

### **ENRICHMENT:**

Independent exploration of raised panel processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 7**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 1** Students will be able to process B Side Panel Rails from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Start the process below:

### **PROCESS MATERIALS**

#### **5. B Side Panel Rails – select stock 1" x 3 ½" x 16" minimum QTY 4**

### **PROCESS MATERIALS**

**B Side Panel Rails** finished size: ¾" x 3" x 15"

- A. Radial Arm Saw / Miter Saw** – if stock length is >16" cut it to 16"
- B. Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 ¾", carefully rip it to 3 ½" using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 ¾", **go to step C.**

- C. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. Table Saw** – Cut to **A Side Panel Stile's** final width of 3"  
[Put the jointed edge against the fence and the flat face on the table]
- F. Planner** (small planer) – thickness – Reduce to the exact thickness of 3/4" <Use the planer technique!>
- G. Miter Saw** - Cut off ¼" off of one end, then cut to exact length of 15"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.

H. **Mark** – Lightly write your name and letter “B” on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

## December 8

### MATERIALS PROCESSING

**OBJECTIVES:** **Day 2** Students will be able to process B Side Panel Rails from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

#### PROCESS MATERIALS

**6. B Side Panel Rails** – select stock 1” x 3 ½” x 16” minimum **QTY 4**

#### PROCESS MATERIALS

**B Side Panel Rails** finished size: ¾” x 3” x 15”

I. **Radial Arm Saw / Miter Saw** – if stock length is >16” cut it to 16”

J. **Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 ¾”, carefully rip it to 3 ½” using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 ¾”, **go to step C.**

K. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table

L. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

**M. Table Saw** – Cut to **A Side Panel Stile's** final width of 3"

[Put the jointed edge against the fence and the flat face on the table]

**N. Planner** (small planer) – thickness – Reduce to the exact thickness of  $3/4$ " <Use the planer technique!>

**O. Miter Saw** - Cut off  $1/4$ " off of one end, then cut to exact length of 15"

\*\*Remember to check what side of the line you need to cut on

Keep the larger cutoff piece.

**P. Mark** – Lightly write your name and letter "**B**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

## December 11

### MATERIALS PROCESSING

**OBJECTIVES:** **Day 3** Students will be able to process B Side Panel Rails from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

#### PROCESS MATERIALS

**7. B Side Panel Rails** – select stock 1" x  $3\frac{1}{2}$ " x 16" minimum **QTY 4**

#### PROCESS MATERIALS

**B Side Panel Rails** finished size:  $\frac{3}{4}$ " x 3" x 15"

**Q. Radial Arm Saw / Miter Saw** – if stock length is >16" cut it to 16"

**R. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is >  $7\frac{3}{4}$ ", carefully rip it to  $3\frac{1}{2}$ " using the table saw then go to step C.

**\*\*If your stock is cupped and its width is < 7 ¾", go to step C.**

- S. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- T. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- U. Table Saw** – Cut to **A Side Panel Stile's** final width of 3"  
[Put the jointed edge against the fence and the flat face on the table]
- V. Planner** (small planer) – thickness – Reduce to the exact thickness of ¾" <Use the planer technique!>
- W. Miter Saw** - Cut off ¼" off of one end, then cut to exact length of 15"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- X. Mark** – Lightly write your name and letter "**B**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 12**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 4** Students will be able to process B Side Panel Rails from rough stock.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the squaring of stock procedures  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

**8. B Side Panel Rails** – select stock 1" x 3 ½" x 16" minimum **QTY 4**

### **PROCESS MATERIALS**

**B Side Panel Rails** finished size: ¾" x 3" x 15"

**Y. Radial Arm Saw / Miter Saw** – if stock length is >16" cut it to 16"

**Z. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is  $> 7 \frac{3}{4}$ ", carefully rip it to  $3 \frac{1}{2}$ " using the table saw then go to step C.

\*\*If your stock is cupped and its width is  $< 7 \frac{3}{4}$ ", **go to step C.**

**AA. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table

**BB. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

**CC. Table Saw** – Cut to **A Side Panel Stile's** final width of 3"

[Put the jointed edge against the fence and the flat face on the table]

**DD. Planer** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{4}$ " <Use the planer technique!>

**EE. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 15"

\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.

**FF. Mark** – Lightly write your name and letter "**B**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of squaring of stock

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 13**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 1** Students will be able to install the dado blade and dado brake in the table saw.  
Students will be able to adjust the dado blade for the groove operation.  
Students will be able to follow specific directions.  
Students will be able to use problem solving skills.  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Start the process below:

## PROCESS MATERIALS

### 5. GROOVE - A Side Panel Stiles & B Side Panel Rails – $\frac{1}{4}$ " x $\frac{13}{16}$ " Groove

- A. **Table Saw** - Set the inside face of the table saw blade  $\frac{1}{4}$ " away from the fence
- B. Set the height of the blade to  $\frac{13}{16}$ "
- C. Run a test  $\frac{3}{4}$ " board through the table saw – check the blade height and adjust as necessary
- D. Push all of the 8 boards through the blade
- E. Reverse the boards and run them through the blade again
- F. This process will center the groove – a small strip of material may be left in the center of the groove
- G. Adjust the fence and run a cleaning pass in the center of each groove

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of dado blade operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 14**

## MATERIALS PROCESSING

**OBJECTIVES:** **Day 2** Students will be able to install the dado blade and dado brake in the table saw.  
Students will be able to adjust the dado blade for the groove operation.  
Students will be able to follow specific directions.  
Students will be able to use problem solving skills.  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Continue the process below:

## PROCESS MATERIALS

### 5. GROOVE - A Side Panel Stiles & B Side Panel Rails – $\frac{1}{4}$ " x $\frac{13}{16}$ " Groove

- A. **Table Saw** - Set the inside face of the table saw blade  $\frac{1}{4}$ " away from the fence
- B. Set the height of the blade to  $\frac{13}{16}$ "
- C. Run a test  $\frac{3}{4}$ " board through the table saw – check the blade height and adjust as necessary
- D. Push all of the 8 boards through the blade
- E. Reverse the boards and run them through the blade again
- F. This process will center the groove – a small strip of material may be left in the center of the groove
- G. Adjust the fence and run a cleaning pass in the center of each groove

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of dado blade operations
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces
- PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 15**

## **MATERIALS PROCESSING**

- OBJECTIVES:** **Day 3** Students will be able to install the dado blade and dado brake in the table saw.  
Students will be able to adjust the dado blade for the groove operation.  
Students will be able to follow specific directions.  
Students will be able to use problem solving skills.  
Students will be able to use the processing machines safely, correctly, and efficiently
- ACTIVITIES:** Continue the process below:

### **PROCESS MATERIALS**

#### **5. GROOVE - A Side Panel Stiles & B Side Panel Rails – $\frac{1}{4}$ " x $\frac{13}{16}$ " Groove**

- Table Saw** - Set the inside face of the table saw blade  $\frac{1}{4}$ " away from the fence
- Set the height of the blade to  $\frac{13}{16}$ "
- Run a test  $\frac{3}{4}$ " board through the table saw – check the blade height and adjust as necessary
- Push all of the 8 boards through the blade
- Reverse the boards and run them through the blade again
- This process will center the groove – a small strip of material may be left in the center of the groove
- Adjust the fence and run a cleaning pass in the center of each groove

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of dado blade operations
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance



Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 18**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 4** Students will be able to install the dado blade and dado brake in the table saw.  
Students will be able to adjust the dado blade for the groove operation.  
Students will be able to follow specific directions.  
Students will be able to use problem solving skills.  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

#### **5. GROOVE - A Side Panel Stiles & B Side Panel Rails – $\frac{1}{4}$ " x $\frac{13}{16}$ " Groove**

- A. **Table Saw** - Set the inside face of the table saw blade  $\frac{1}{4}$ " away from the fence
- B. Set the height of the blade to  $\frac{13}{16}$ "
- C. Run a test  $\frac{3}{4}$ " board through the table saw – check the blade height and adjust as necessary
- D. Push all of the 8 boards through the blade
- E. Reverse the boards and run them through the blade again
- F. This process will center the groove – a small strip of material may be left in the center of the groove
- G. Adjust the fence and run a cleaning pass in the center of each groove

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of dado blade operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 19**

## **MATERIALS PROCESSING**

**OBJECTIVES:**           **Day 5** Students will be able to install the dado blade and dado brake in the table saw.  
Students will be able to adjust the dado blade for the groove operation.  
Students will be able to follow specific directions.  
Students will be able to use problem solving skills.  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**           Complete the process below:

### **PROCESS MATERIALS**

#### **5. GROOVE - A Side Panel Stiles & B Side Panel Rails – $\frac{1}{4}$ " x $\frac{13}{16}$ " Groove**

- A. **Table Saw** - Set the inside face of the table saw blade  $\frac{1}{4}$ " away from the fence
- B. Set the height of the blade to  $\frac{13}{16}$ "
- C. Run a test  $\frac{3}{4}$ " board through the table saw – check the blade height and adjust as necessary
- D. Push all of the 8 boards through the blade
- E. Reverse the boards and run them through the blade again
- F. This process will center the groove – a small strip of material may be left in the center of the groove
- G. Adjust the fence and run a cleaning pass in the center of each groove

**EVALUATION:**           Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**           Independent exploration of dado blade operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 20**

## **MATERIALS PROCESSING**

**OBJECTIVES:**           **Day 1** Students will be able to process Tenon B Side Panel Rails  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**           Start the process below:

### **PROCESS MATERIALS**

## 6. TENON - B Side Panel Rails – ¼" thick x ¾" long Tenon QTY 4

- A. **Table Saw** – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
- B. Select the dado blade and set it up to cut ¾" with a height of ¼" above the table
- C. Attach a true board (perfectly straight MDF if preferred)-  
to the miter gauge to safely support the cutting of the tenon (see diagram below)
- D. Run a test ¾" thick board through the table saw – check the blade height and width and adjust as necessary
- E. Test that the tenon fights snugly in the grooves
- F. Push all of the 4 **B Side Panel Rail** boards through the blade

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of tenon processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 21**

## MATERIALS PROCESSING

**OBJECTIVES:** **Day 2** Students will be able to process Tenon B Side Panel Rails  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Continue the process below:

### PROCESS MATERIALS

## 6. TENON - B Side Panel Rails – ¼" thick x ¾" long Tenon QTY 4

- A. **Table Saw** – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
- B. Select the dado blade and set it up to cut ¾" with a height of ¼" above the table
- C. Attach a true board (perfectly straight MDF if preferred)-  
to the miter gauge to safely support the cutting of the tenon (see diagram below)
- D. Run a test ¾" thick board through the table saw – check the blade height and width and adjust as necessary
- E. Test that the tenon fights snugly in the grooves
- F. Push all of the 4 **B Side Panel Rail** boards through the blade

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of tenon processing
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces
- PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**December 22**

## **MATERIALS PROCESSING**

- OBJECTIVES:** **Day 3** Students will be able to process Tenon B Side Panel Rails  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently
- ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

#### **6. TENON - B Side Panel Rails – ¼" thick x ¾" long Tenon QTY 4**

- A. **Table Saw** – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
- B. Select the dado blade and set it up to cut ¾" with a height of ¼" above the table
- C. Attach a true board (perfectly straight MDF if preferred)-  
to the miter gauge to safely support the cutting of the tenon (see diagram below)
- D. Run a test ¾" thick board through the table saw – check the blade height and width and adjust as necessary
- E. Test that the tenon fights snugly in the grooves
- F. Push all of the 4 **B Side Panel Rail** boards through the blade

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of tenon processing
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room

Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 3**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 4** Students will be able to process Tenon B Side Panel Rails  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

#### **6. TENON - B Side Panel Rails – ¼" thick x ¾" long Tenon QTY 4**

- A. **Table Saw** – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
- B. Select the dado blade and set it up to cut ¾" with a height of ¼" above the table
- C. Attach a true board (perfectly straight MDF if preferred)-  
to the miter gauge to safely support the cutting of the tenon (see diagram below)
- D. Run a test ¾" thick board through the table saw – check the blade height and width and adjust as necessary
- E. Test that the tenon fights snugly in the grooves
- F. Push all of the 4 **B Side Panel Rail** boards through the blade

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of tenon processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 4**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 5** Students will be able to process Tenon B Side Panel Rails  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **PROCESS MATERIALS**

#### **6. TENON - B Side Panel Rails – ¼" thick x ¾" long Tenon QTY 4**

- A. **Table Saw** – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
- B. Select the dado blade and set it up to cut ¾" with a height of ¼" above the table
- C. Attach a true board (perfectly straight MDF if preferred)-  
to the miter gauge to safely support the cutting of the tenon (see diagram below)
- D. Run a test ¾" thick board through the table saw – check the blade height and width and adjust as necessary
- E. Test that the tenon fits snugly in the grooves
- F. Push all of the 4 **B Side Panel Rail** boards through the blade

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of tenon processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 5**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 1** Students will be able to process C Center Panels contour cuts on the table saw  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Start the process below:

## PROCESS MATERIALS

### 7. C Center Panel – 15" x 15 ½" QTY 2

3. **Radial Arm Saw** – cut both of the C Center Panels to the finished size of 15" x 15 ½"

#### 4. **Table Saw**

H. Carefully remove the blade guard.

I. Change the blade to a thick kerf rip blade.

J. Lower the blade below the table surface and clamp a strong, long, and perfectly straight MDF board across its top dead center at 90° to the blade face. Use the miter gauge to align the board and then clamp the board to the table at both ends.

K. Raise the table saw blade 1/32" above the table surface.

L. Use a push pad in the center of each panel to push all four sides of both center panels along the guide board and across the blade. Slow, steady passes across the blade will yield the best cuts and reduce sanding after the cuts have been completed. The push pad in the center of each panel will help the panel from tipping as the edges get thinner.

M. Repeat the process, raising the blade 1/32" after each series of passes until the edges of the panels fit loosely into the stile and rail grooves.

N. Be sure the panels can move freely inside the grooves to allow for expansion and contraction of the wood.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives


**ENRICHMENT:** Independent exploration of raised panel processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 8**

## MATERIALS PROCESSING

**OBJECTIVES:** Day 2 Students will be able to process C Center Panels contour cuts on   
Students will be able to follow specific directions  
Students will be able to use problem solving skills

Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Continue the process below:

**PROCESS MATERIALS**

**7. C Center Panel – 15" x 15 ½" QTY 2**

5. **Radial Arm Saw** – cut both of the C Center Panels to the finished size of 15" x 15 ½"

**6. Table Saw**

O. Carefully remove the blade guard.

P. Change the blade to a thick kerf rip blade.

Q. Lower the blade below the table surface and clamp a strong, long, and perfectly straight MDF board across its top dead center at 90° to the blade face. Use the miter gauge to align the board and then clamp the board to the table at both ends.

**R. Raise the table saw blade 1/32" above the table surface.**

**S. Use a push pad in the center of each panel to push all four sides of both center panels along the guide board and across the blade. Slow, steady passes across the blade will yield the best cuts and reduce sanding after the cuts have been completed. The push pad in the center of each panel will help the panel from tipping as the edges get thinner.**

**T. Repeat the process, raising the blade 1/32" after each series of passes until the edges of the panels fit loosely into the stile and rail grooves.**

**U. Be sure the panels can move freely inside the grooves to allow for expansion and contraction of the wood.**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of CNC operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 9**

**MATERIALS PROCESSING**

**OBJECTIVES:** Day 3 Students will be able to process C Center Panels contour cuts on



Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Continue the process below:

**PROCESS MATERIALS**

**7. C Center Panel – 15" x 15 ½" QTY 2**

7. Radial Arm Saw – cut both of the C Center Panels to the finished size of 15" x 15 ½"

8. Table Saw

V. Carefully remove the blade guard.

W. Change the blade to a thick kerf rip blade.

X. Lower the blade below the table surface and clamp a strong, long, and perfectly straight MDF board across its top dead center at 90° to the blade face. Use the miter gauge to align the board and then clamp the board to the table at both ends.

Y. Raise the table saw blade 1/32" above the table surface.

Z. Use a push pad in the center of each panel to push all four sides of both center panels along the guide board and across the blade. Slow, steady passes across the blade will yield the best cuts and reduce sanding after the cuts have been completed. The push pad in the center of each panel will help the panel from tipping as the edges get thinner.

AA. Repeat the process, raising the blade 1/32" after each series of passes until the edges of the panels fit loosely into the stile and rail grooves.

BB. Be sure the panels can move freely inside the grooves to allow for expansion and contraction of the wood.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of CNC operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 4** Students will be able to process C Center Panels contour cuts on [REDACTED]  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **PROCESS MATERIALS**

#### **7. C Center Panel – 15" x 15 ½"    QTY 2**

9. **Radial Arm Saw** – cut both of the C Center Panels to the finished size of 15" x 15 ½"

10. **Table Saw**

CC.      Carefully remove the blade guard.

DD.      Change the blade to a thick kerf rip blade.

EE.      Lower the blade below the table surface and clamp a strong, long, and perfectly straight MDF board across its top dead center at 90° to the blade face. Use the miter gauge to align the board and then clamp the board to the table at both ends.

**FF. Raise the table saw blade 1/32" above the table surface.**

**GG.      Use a push pad in the center of each panel to push all four sides of both center panels along the guide board and across the blade. Slow, steady passes across the blade will yield the best cuts and reduce sanding after the cuts have been completed. The push pad in the center of each panel will help the panel from tipping as the edges get thinner.**

**HH.      Repeat the process, raising the blade 1/32" after each series of passes until the edges of the panels fit loosely into the stile and rail grooves.**

**II. Be sure the panels can move freely inside the grooves to allow for expansion and contraction of the wood.**

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives


**ENRICHMENT:**      Independent exploration of CNC operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 11**

## **MATERIALS PROCESSING**

**OBJECTIVES:** Day 5 Students will be able to process C Center Panels contour cuts on   
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **PROCESS MATERIALS**

#### **7. C Center Panel – 15" x 15 ½" QTY 2**

11. **Radial Arm Saw** – cut both of the C Center Panels to the finished size of 15" x 15 ½"
12. **Table Saw**
  - JJ. Carefully remove the blade guard.
  - KK. Change the blade to a thick kerf rip blade.
  - LL. Lower the blade below the table surface and clamp a strong, long, and perfectly straight MDF board across its top dead center at 90° to the blade face. Use the miter gauge to align the board and then clamp the board to the table at both ends.
  - MM. Raise the table saw blade 1/32" above the table surface.
  - NN. Use a push pad in the center of each panel to push all four sides of both center panels along the guide board and across the blade. Slow, steady passes across the blade will yield the best cuts and reduce sanding after the cuts have been completed. The push pad in the center of each panel will help the panel from tipping as the edges get thinner.
  - OO. Repeat the process, raising the blade 1/32" after each series of passes until the edges of the panels fit loosely into the stile and rail grooves.
  - PP. Be sure the panels can move freely inside the grooves to allow for expansion and contraction of the wood.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of CNC operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**January 12**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 6** Students will be able to process C Center Panels contour cuts on [REDACTED]  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **PROCESS MATERIALS**

#### **7. C Center Panel – 15" x 15 ½"    QTY 2**

13.    **Radial Arm Saw** – cut both of the C Center Panels to the finished size of 15" x 15 ½"

14.    **Table Saw**

QQ.      Carefully remove the blade guard.

RR.      Change the blade to a thick kerf rip blade.

SS. Lower the blade below the table surface and clamp a strong, long, and perfectly straight MDF board across its top dead center at 90° to the blade face. Use the miter gauge to align the board and then clamp the board to the table at both ends.

TT.      **Raise the table saw blade 1/32" above the table surface.**

UU.      **Use a push pad in the center of each panel to push all four sides of both center panels along the guide board and across the blade. Slow, steady passes across the blade will yield the best cuts and reduce sanding after the cuts have been completed. The push pad in the center of each panel will help the panel from tipping as the edges get thinner.**

VV.      **Repeat the process, raising the blade 1/32" after each series of passes until the edges of the panels fit loosely into the stile and rail grooves.**

WW.      **Be sure the panels can move freely inside the grooves to allow for expansion and contraction of the wood.**

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of CNC operations

**ACCOMMODATIONS:**    Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes

Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 16**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 1** Students will be able to assemble C Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Start the process below:

### **8. C Center Panel ASSEMBLY – 15” x 15 ½”    QTY 2 - Assembly**

1. ½ Sheet Sander & Random Orbit Sander – completely sand the entire panel until it is smooth like glass
2. Assemble - Assemble one panel – see the diagram THE CENTER PANEL SHOULD FLOAT IN THE GROOVES
3. Glue - Put Tight Bond wood glue on the tenons
4. Clamp - Use two clamp to secure the pieces – use a piece of foam or rubber on the clamp ends to keep from damaging the assembly’s edges
5. Measure - Use a metal yardstick and measure the diagonal measurement from corner to corner.
6. If the diagonal measurements are the same, the panel is square.

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of glue-up techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 17**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 2** Students will be able to assemble C Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Continue the process below:

### **8. C Center Panel ASSEMBLY – 15" x 15 ½"    QTY 2 - Assembly**

1. ½ Sheet Sander & Random Orbit Sander – completely sand the entire panel until it is smooth like glass
2. Assemble - Assemble one panel – see the diagram THE CENTER PANEL SHOULD FLOAT IN THE GROOVES
3. Glue - Put Tight Bond wood glue on the tenons
4. Clamp - Use two clamp to secure the pieces – use a piece of foam or rubber on the clamp ends to keep from damaging the assembly's edges
5. Measure - Use a metal yardstick and measure the diagonal measurement from corner to corner.
6. If the diagonal measurements are the same, the panel is square.

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of glue-up techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 18**

## **MATERIALS PROCESSING**

**OBJECTIVES:**      **Day 3** Students will be able to assemble C Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Continue the process below:

### **8. C Center Panel ASSEMBLY – 15" x 15 ½"    QTY 2 - Assembly**

1. **½ Sheet Sander & Random Orbit Sander** – completely sand the entire panel until it is smooth like glass
2. **Assemble** - Assemble one panel – see the diagram THE CENTER PANEL SHOULD FLOAT IN THE GROOVES
3. **Glue** - Put Tight Bond wood glue on the tenons
4. **Clamp** - Use two clamp to secure the pieces – use a piece of foam or rubber on the clamp ends to keep from damaging the assembly's edges
5. **Measure** - Use a metal yardstick and measure the diagonal measurement from corner to corner.
6. If the diagonal measurements are the same, the panel is square.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of glue-up techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 19**

## **MATERIALS PROCESSING**

**OBJECTIVES:** **Day 4** Students will be able to assemble C Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **8. C Center Panel ASSEMBLY – 15" x 15 ½" QTY 2 - Assembly**

1. **½ Sheet Sander & Random Orbit Sander** – completely sand the entire panel until it is smooth like glass
2. **Assemble** - Assemble one panel – see the diagram THE CENTER PANEL SHOULD FLOAT IN THE GROOVES
3. **Glue** - Put Tight Bond wood glue on the tenons
4. **Clamp** - Use two clamp to secure the pieces – use a piece of foam or rubber on the clamp ends to keep from damaging the assembly's edges
5. **Measure** - Use a metal yardstick and measure the diagonal measurement from corner to corner.
6. If the diagonal measurements are the same, the panel is square.

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of glue-up techniques
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces
- PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 22**

## **Manufacturing**

- OBJECTIVES:** **Day 5** Students will be able to assemble C Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently
- ACTIVITIES:** Complete the process below:

### **8. C Center Panel ASSEMBLY – 15" x 15 ½" QTY 2 - Assembly**

1. ½ Sheet Sander & Random Orbit Sander – completely sand the entire panel until it is smooth like glass
2. Assemble - Assemble one panel – see the diagram THE CENTER PANEL SHOULD FLOAT IN THE GROOVES
3. Glue - Put Tight Bond wood glue on the tenons
4. Clamp - Use two clamp to secure the pieces – use a piece of foam or rubber on the clamp ends to keep from damaging the assembly's edges
5. Measure - Use a metal yardstick and measure the diagonal measurement from corner to corner.
6. If the diagonal measurements are the same, the panel is square.

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of glue-up techniques
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance



Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 23**

## **Manufacturing**

**OBJECTIVES:** **Day 1** Students will be able to process the rabbet in both C Center Panel Assemblies  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **9. C Center Panel Assembly – 15" x 15 ½" QTY 2 - RABBET 3/4" x 3/8"**

1. **Table Saw** (or router) – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
2. Insert a dado blade and raise it to 3/8" above the table.
3. Set the fence at ¾" – double check this measurement with a square
4. **Cut ONLY the REAR INSIDE FACE of each side panel (STILE)**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of rabbet processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 24**

## **Manufacturing**

**OBJECTIVES:**      **Day 2** Students will be able to process the rabbet in both C Center Panel Assemblies  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **9. C Center Panel Assembly – 15" x 15 ½"    QTY 2 - RABBET 3/4" x 3/8"**

1. **Table Saw** (or router) – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
2. Insert a dado blade and raise it to 3/8" above the table.
3. Set the fence at ¾" – double check this measurement with a square
4. **Cut ONLY the REAR INSIDE FACE of each side panel (STILE)**

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of rabbet processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 25**

## **Manufacturing**

**OBJECTIVES:**      **Day 3** Students will be able to process the rabbet in both C Center Panel Assemblies  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **9. C Center Panel Assembly – 15" x 15 ½"    QTY 2 - RABBET 3/4" x 3/8"**

1. **Table Saw** (or router) – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
2. Insert a dado blade and raise it to 3/8" above the table.
3. Set the fence at 3/4" – double check this measurement with a square
4. **Cut ONLY the REAR INSIDE FACE of each side panel (STILE)**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of rabbet processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 26**

## **Manufacturing**

**OBJECTIVES:** **Day 4** Students will be able to process the rabbet in both C Center Panel Assemblies  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **9. C Center Panel Assembly – 15" x 15 1/2" QTY 2 - RABBET 3/4" x 3/8"**

1. **Table Saw** (or router) – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
2. Insert a dado blade and raise it to 3/8" above the table.
3. Set the fence at 3/4" – double check this measurement with a square
4. **Cut ONLY the REAR INSIDE FACE of each side panel (STILE)**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of rabbet processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**January 29**

## **Manufacturing**

**OBJECTIVES:** **Day 5** Students will be able to process the rabbet in both C Center Panel Assemblies  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **9. C Center Panel Assembly – 15" x 15 ½" QTY 2 - RABBET 3/4" x 3/8"**

1. **Table Saw** (or router) – Using clamps, attach a perfectly straight piece of MDF to the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
2. Insert a dado blade and raise it to 3/8" above the table.
3. Set the fence at ¾" – double check this measurement with a square
4. **Cut ONLY the REAR INSIDE FACE of each side panel (STILE)**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of rabbet processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**January 30**

## **Manufacturing**

**OBJECTIVES:**      **Day 1** Students will be able to process D Front Rails and biscuit joint them.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **10. Center Panel Assembly & D Front Rails QTY 2 – biscuit joint**

1. Mark the center on the end of both side of D Front Rails – **See Diagram A**
2. Align D Front rail flush with the side of the Center Panel assembly.
3. Transfer the center mark from D Front Rail to the side of the Center Panel assembly – **See Diagram B**
4. Do this same operation on the bottom of the Center Panel assembly
5. Set the biscuit jointer to the No. 10 setting
6. Set the biscuit jointer height of cut to  $\frac{3}{8}$ "
7. Get two scrap pieces of wood that are exactly  $\frac{3}{4}$ " thick
8. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
9. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
10. Make the cuts on the center panel and on the D Front Rails – **See Diagram C**
11. **DRY FIT THE PARTS – DO NOT GLUE THEM**

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**January 31**

## **Manufacturing**

**OBJECTIVES:**      **Day 2** Students will be able to process D Front Rails and biscuit joint them.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **10. Center Panel Assembly & D Front Rails   QTY 2 – biscuit joint**

1. Mark the center on the end of both side of D Front Rails – **See Diagram A**
2. Align D Front rail flush with the side of the Center Panel assembly.
3. Transfer the center mark from D Front Rail to the side of the Center Panel assembly – **See Diagram B**
4. Do this same operation on the bottom of the Center Panel assembly
5. Set the biscuit jointer to the No. 10 setting
6. Set the biscuit jointer height of cut to  $\frac{3}{8}$ "
7. Get two scrap pieces of wood that are exactly  $\frac{3}{4}$ " thick
8. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
9. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
10. Make the cuts on the center panel and on the D Front Rails – **See Diagram C**
11. **DRY FIT THE PARTS – DO NOT GLUE THEM**

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 1**

## **Manufacturing**

**OBJECTIVES:**      **Day 3** Students will be able to process D Front Rails and biscuit joint them.  
Students will be able to follow specific directions

Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

## **10. Center Panel Assembly & D Front Rails QTY 2 – biscuit joint**

1. Mark the center on the end of both side of D Front Rails – **See Diagram A**
2. Align D Front rail flush with the side of the Center Panel assembly.
3. Transfer the center mark from D Front Rail to the side of the Center Panel assembly – **See Diagram B**
4. Do this same operation on the bottom of the Center Panel assembly
5. Set the biscuit jointer to the No. 10 setting
6. Set the biscuit jointer height of cut to 3/8"
7. Get two scrap pieces of wood that are exactly 3/4" thick
8. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
9. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
10. Make the cuts on the center panel and on the D Front Rails – **See Diagram C**
11. **DRY FIT THE PARTS – DO NOT GLUE THEM**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 2**

## **Manufacturing**

**OBJECTIVES:** **Day 4** Students will be able to process D Front Rails and biscuit joint them.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

## 10. Center Panel Assembly & D Front Rails QTY 2 – biscuit joint

1. Mark the center on the end of both side of D Front Rails – **See Diagram A**
2. Align D Front rail flush with the side of the Center Panel assembly.
3. Transfer the center mark from D Front Rail to the side of the Center Panel assembly – **See Diagram B**
4. Do this same operation on the bottom of the Center Panel assembly
5. Set the biscuit jointer to the No. 10 setting
6. Set the biscuit jointer height of cut to  $\frac{3}{8}$ "
7. Get two scrap pieces of wood that are exactly  $\frac{3}{4}$ " thick
8. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
9. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
10. Make the cuts on the center panel and on the D Front Rails – **See Diagram C**
11. **DRY FIT THE PARTS – DO NOT GLUE THEM**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 5**

## Manufacturing

**OBJECTIVES:** **DAY 1** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

## 13. T Tray Glides– select stock 1" x 1" x 18" minimum QTY 8

### PROCESS MATERIALS

**T Tray Glides** finished size:  $\frac{3}{4}$ " x  $\frac{11}{16}$ " x 17"



A. **Radial Arm Saw / Miter Saw** – if stock length is >18” cut it to 18”

B. **Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 ¾”, carefully rip it to 2” using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 ¾”, **go to step C.**

C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table

D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

E. **Table Saw** – Cut to **T Side Panel Stile’s** final width of 11/16”

[Put the jointed edge against the fence and the flat face on the table]

F. **Planner** (small planer) – thickness – Reduce to the exact thickness of 3/8” <Use the planer technique!>

G. **Miter Saw** - Cut off ¼” off of one end, then cut to exact length of 17”

\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.

H. **Mark** – Lightly write your name and letter “T” on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 6**

## **Manufacturing**

**OBJECTIVES:** **DAY 2** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### 13. T Tray Glides— select stock 1" x 1" x 18" minimum **QTY 8**

#### PROCESS MATERIALS

**T Tray Glides** finished size:  $\frac{3}{4}$ " x  $\frac{11}{16}$ " x 17"

- A. **Radial Arm Saw / Miter Saw** – if stock length is >18" cut it to 18"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is >  $7\frac{3}{4}$ ", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is <  $7\frac{3}{4}$ ", **go to step C.**

- C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to **T Side Panel Stile's** final width of  $\frac{11}{16}$ "  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{8}$ " <Use the planer technique!>
- G. **Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 17"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- H. **Mark** – Lightly write your name and letter "T" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

## Manufacturing

**OBJECTIVES:** **DAY 3** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### 13. T Tray Glides– select stock 1" x 1" x 18" minimum **QTY 8**

#### PROCESS MATERIALS

**T Tray Glides** finished size:  $\frac{3}{4}$ " x  $\frac{11}{16}$ " x 17"

- A. Radial Arm Saw / Miter Saw** – if stock length is >18" cut it to 18"
- B. Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is >  $7\frac{3}{4}$ ", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is <  $7\frac{3}{4}$ ", **go to step C.**

- C. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. Table Saw** – Cut to **T Side Panel Stile's** final width of  $\frac{11}{16}$ "  
[Put the jointed edge against the fence and the flat face on the table]
- F. Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{8}$ " <Use the planer technique!>
- G. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 17"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- H. Mark** – Lightly write your name and letter "**T**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

## February 8

### Manufacturing

**OBJECTIVES:** **DAY 4** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### 13. T Tray Glides– select stock 1" x 1" x 18" minimum **QTY 8**

#### PROCESS MATERIALS

**T Tray Glides** finished size:  $\frac{3}{4}$ " x  $\frac{11}{16}$ " x 17"

- A. **Radial Arm Saw / Miter Saw** – if stock length is >18" cut it to 18"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is >  $7\frac{3}{4}$ ", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is <  $7\frac{3}{4}$ ", **go to step C.**

- C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to **T Side Panel Stile's** final width of  $\frac{11}{16}$ "  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{8}$ " <Use the planer technique!>
- G. **Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 17"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- H. **Mark** – Lightly write your name and letter "**T**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room

Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 9**

## **Manufacturing**

**OBJECTIVES:** **DAY 5** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **13. T Tray Glides– select stock 1" x 1" x 18" minimum QTY 8**

#### **PROCESS MATERIALS**

**T Tray Glides** finished size:  $\frac{3}{4}$ " x  $\frac{11}{16}$ " x 17"

- A. Radial Arm Saw / Miter Saw** – if stock length is >18" cut it to 18"
- B. Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7  $\frac{3}{4}$ ", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7  $\frac{3}{4}$ ", **go to step C.**

- C. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. Table Saw** – Cut to **T Side Panel Stile's** final width of  $\frac{11}{16}$ "  
[Put the jointed edge against the fence and the flat face on the table]
- F. Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{8}$ " <Use the planer technique!>
- G. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 17"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- H. Mark** – Lightly write your name and letter "**T**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of biscuit joinery

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 12**

## **Manufacturing**

**OBJECTIVES:** **DAY 1** Students will be able to assemble T Tray Glides to the center panel assembly.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **14. T Tray Glides & Center Panel Assembly - QTY 2**

1. Layout the location for all of T Tray Glides ***both sides at the same time!***  
\*\*THE STRIPS ARE ATTACHED AT POINTS MEASURED FROM THE TOP EDGE\*\* See Diagram A
2. Layout the hole locations on T Tray Guides ***THE LEFT And RIGHT SIDE ARE DIFFERENT!*** – See Diagram B
3. Select an appropriate drill bit to pre-drill the wood screw holes
4. **DRILL PRESS** – place a piece of cardboard on the drill press table – this will help eliminate scratches from the table
5. **DRILL PRESS** – use the depth nuts to set the appropriate pre-drilling depth
6. **DRILL PRESS** – test the drill press depth with a scrap piece of wood  
that is 1 ½” thick (or two ¾” thick boards) – adjust the dept as necessary
7. **DRILL PRESS** – use a soft jaw clamp to secure the T Tray Guides one at a time and pre-drill the holes
8. **DRILL PRESS** – install the countersink bit into the drill press and use the depth nuts to set the dept
9. **DRILL PRESS** – counter sink the predrilled holes to the appropriate depth – the screw head should be flush or sunk slightly below the surface of the wood
10. Wet a paper towel or rag for cleaning glue squeeze out
11. Use a small amount of Tight Bond wood glue - apply it with a brush to the Center Panel ***only***
12. Select 16 flat head wood screws ¾” long – use a screwdriver (NOT A DRILL) to install the screws

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of counter sinking screws

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room

Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 13**

## **Manufacturing**

**OBJECTIVES:** **DAY 2** Students will be able to assemble T Tray Glides to the center panel assembly.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **14. T Tray Glides & Center Panel Assembly - QTY 2**

1. Layout the location for all of T Tray Glides ***both sides at the same time!***  
\*\*THE STRIPS ARE ATTACHED AT POINTS MEASURED FROM THE TOP EDGE\*\* **See Diagram A**
2. Layout the hole locations on T Tray Guides ***THE LEFT And RIGHT SIDE ARE DIFFERENT!*** – **See Diagram B**
3. Select an appropriate drill bit to pre-drill the wood screw holes
4. **DRILL PRESS** – place a piece of cardboard on the drill press table – this will help eliminate scratches from the table
5. **DRILL PRESS** – use the depth nuts to set the appropriate pre-drilling depth
6. **DRILL PRESS** – test the drill press depth with a scrap piece of wood  
that is 1 ½" thick (or two ¾" thick boards) – adjust the dept as necessary
7. **DRILL PRESS** – use a soft jaw clamp to secure the T Tray Guides one at a time and pre-drill the holes
8. **DRILL PRESS** – install the countersink bit into the drill press and use the depth nuts to set the dept
9. **DRILL PRESS** – counter sink the predrilled holes to the appropriate depth – the screw head should be flush or sunk slightly below the surface of the wood
10. Wet a paper towel or rag for cleaning glue squeeze out
11. Use a small amount of Tight Bond wood glue - apply it with a brush to the Center Panel ***only***
12. Select 16 flat head wood screws ¾" long – use a screwdriver (NOT A DRILL) to install the screws

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of counter sinking screws

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

## February 14

### Manufacturing

**OBJECTIVES:** **DAY 3** Students will be able to assemble T Tray Glides to the center panel assembly.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

#### 14. T Tray Glides & Center Panel Assembly - QTY 2

1. Layout the location for all of T Tray Glides ***both sides at the same time!***  
**\*\*THE STRIPS ARE ATTACHED AT POINTS MEASURED FROM THE TOP EDGE\*\* See Diagram A**
2. Layout the hole locations on T Tray Guides ***THE LEFT And RIGHT SIDE ARE DIFFERENT!*** – See Diagram B
3. Select an appropriate drill bit to pre-drill the wood screw holes
4. **DRILL PRESS** – place a piece of cardboard on the drill press table – this will help eliminate scratches from the table
5. **DRILL PRESS** – use the depth nuts to set the appropriate pre-drilling depth
6. **DRILL PRESS** – test the drill press depth with a scrap piece of wood  
that is 1 ½” thick (or two ¾” thick boards) – adjust the dept as necessary
7. **DRILL PRESS** – use a soft jaw clamp to secure the T Tray Guides one at a time and pre-drill the holes
8. **DRILL PRESS** – install the countersink bit into the drill press and use the depth nuts to set the dept
9. **DRILL PRESS** – counter sink the predrilled holes to the appropriate depth – the screw head should be flush or sunk slightly below the surface of the wood
10. Wet a paper towel or rag for cleaning glue squeeze out
11. Use a small amount of Tight Bond wood glue - apply it with a brush to the Center Panel ***only***
12. Select 16 flat head wood screws ¾” long – use a screwdriver (NOT A DRILL) to install the screws

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of counter sinking screws

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B



**February 15**

## **Manufacturing**

**OBJECTIVES:**      **DAY 4** Students will be able to assemble T Tray Glides to the center panel assembly.  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **14. T Tray Glides & Center Panel Assembly - QTY 2**

1. Layout the location for all of T Tray Glides ***both sides at the same time!***  
\*\*THE STRIPS ARE ATTACHED AT POINTS MEASURED FROM THE TOP EDGE\*\* See Diagram A
2. Layout the hole locations on T Tray Guides *THE LEFT And RIGHT SIDE ARE DIFFERENT!* – See Diagram B
3. Select an appropriate drill bit to pre-drill the wood screw holes
4. **DRILL PRESS** – place a piece of cardboard on the drill press table – this will help eliminate scratches from the table
5. **DRILL PRESS** – use the depth nuts to set the appropriate pre-drilling depth
6. **DRILL PRESS** – test the drill press depth with a scrap piece of wood  
that is 1 ½” thick (or two ¾” thick boards) – adjust the dept as necessary
7. **DRILL PRESS** – use a soft jaw clamp to secure the T Tray Guides one at a time and pre-drill the holes
8. **DRILL PRESS** – install the countersink bit into the drill press and use the depth nuts to set the dept
9. **DRILL PRESS** – counter sink the predrilled holes to the appropriate depth – the screw head should be flush or sunk slightly below the surface of the wood
10. Wet a paper towel or rag for cleaning glue squeeze out
11. Use a small amount of Tight Bond wood glue - apply it with a brush to the Center Panel ***only***
12. Select 16 flat head wood screws ¾” long – use a screwdriver (NOT A DRILL) to install the screws

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of counter sinking screws

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 16**

## Manufacturing

**OBJECTIVES:** **DAY 1** Students will be able to process E Top Shelf Panel  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:  
**E Top Shelf Panel** – select stock 3/4" X 17 1/2" x 29 minimum **QTY 1**

### PROCESS MATERIALS

**E Top Shelf** finished size: 3/4" X 16 7/8" x 28 **QTY 1**

**NOTE: Panel is veneer plywood**

- A. Inspect** – check if rough stock is cupped - **If it is cupped, DO NOT USE IT**
- B. Inspect** – check if stock has any defects on the edge - if there are defects cut them off and re-measure (Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)
- C. Radial Arm Saw / Miter Saw** – if stock length is >28" cut it to 28"
- D. Table Saw** – Cut to wood's final width of 16 7/8"
- E. Mark** – Lightly write your name and the letter "E" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of veneer plywood processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 20**

## Manufacturing

**OBJECTIVES:** **DAY 2** Students will be able to process E Top Shelf Panel

Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**E Top Shelf Panel** – select stock 3/4" X 17 1/2" x 29 minimum **QTY 1**

#### **PROCESS MATERIALS**

**E Top Shelf** finished size: 3/4" X 16 7/8" x 28 **QTY 1**

**NOTE: Panel is veneer plywood**

**A. Inspect** – check if rough stock is cupped - **If it is cupped, DO NOT USE IT**

**B. Inspect** – check if stock has any defects on the edge - if there are defects cut them off and re-measure  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

**C. Radial Arm Saw / Miter Saw** – if stock length is >28" cut it to 28"

**D. Table Saw** – Cut to wood's final width of 16 7/8"

**E. Mark** – Lightly write your name and the letter "E" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of veneer plywood processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 21**

## **Manufacturing**

**OBJECTIVES:** **DAY 3** Students will be able to process E Top Shelf Panel  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**E Top Shelf Panel** – select stock 3/4" X 17 1/2" x 29 minimum **QTY 1**

#### PROCESS MATERIALS

**E Top Shelf** finished size: 3/4" X 16 7/8" x 28 **QTY 1**

**NOTE: Panel is veneer plywood**

- A. **Inspect** – check if rough stock is cupped - **If it is cupped, DO NOT USE IT**
- B. **Inspect** – check if stock has any defects on the edge - if there are defects cut them off and re-measure (Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)
- C. **Radial Arm Saw / Miter Saw** – if stock length is >28" cut it to 28"
- D. **Table Saw** – Cut to wood's final width of 16 7/8"
- E. **Mark** – Lightly write your name and the letter "E" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of veneer plywood processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 22**

## Manufacturing

**OBJECTIVES:** **DAY 4** Students will be able to process E Top Shelf Panel  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**E Top Shelf Panel** – select stock 3/4" X 17 1/2" x 29 minimum **QTY 1**

## PROCESS MATERIALS

**E Top Shelf** finished size: 3/4" X 16 7/8" x 28 QTY 1

**NOTE: Panel is veneer plywood**

- A. **Inspect** – check if rough stock is cupped - **If it is cupped, DO NOT USE IT**
- B. **Inspect** – check if stock has any defects on the edge - if there are defects cut them off and re-measure  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)
- C. **Radial Arm Saw / Miter Saw** – if stock length is >28" cut it to 28"
- D. **Table Saw** – Cut to wood's final width of 16 7/8"
- E. **Mark** – Lightly write your name and the letter "E" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of veneer plywood processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 23**

## Manufacturing

**OBJECTIVES:** **DAY 1** Students will be able to process E Top Shelf Panel and D Top Rail with biscuit joints  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### 12. E Top Shelf Panel – biscuit joints

1. Dry fit the Center Panel Assembly and the **D Front Rails** using biscuits
2. Use a bar clamp to gently hold the complete assembly together
3. Slide **E Top Panel** into the assembly – this is the top compartments base
4. The bottom of **E Top Panel** should be flush with the bottom of **D Top Front Rail**
5. Turn the whole cabinet upside down

6. Measure 7" increments and mark 3 locations for biscuit joints. Place the marks on both D Top Rail and E Top Shelf Panel – **See Diagram**
7. Set the biscuit jointer to the No. 10 setting
8. Set the biscuit jointer height of cut to 3/8"
9. Get two scrap pieces of wood that are exactly 3/4" thick
10. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
11. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
12. Make the cuts on E Top Shelf and on D Front Rail – **See Diagram C**
13. **DRY FIT THE ALL OF THE PARTS – DO NOT GLUE THEM**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of veneer plywood processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 26**

## **Manufacturing**

**OBJECTIVES:** **DAY 2** Students will be able to process E Top Shelf Panel and D Top Rail with biscuit joints  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **12. E Top Shelf Panel – biscuit joints**

1. Dry fit the Center Panel Assembly and the **D Front Rails** using biscuits
2. Use a bar clamp to gently hold the complete assembly together
3. Slide **E Top Panel** into the assembly – this is the top compartments base
4. The bottom of **E Top Panel** should be flush with the bottom of **D Top Front Rail**
5. Turn the whole cabinet upside down
6. Measure 7" increments and mark 3 locations for biscuit joints. Place the marks on both D Top Rail and E Top Shelf Panel – **See Diagram**
7. Set the biscuit jointer to the No. 10 setting

8. Set the biscuit jointer height of cut to 3/8"
9. Get two scrap pieces of wood that are exactly 3/4" thick
10. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
11. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
12. Make the cuts on E Top Shelf and on D Front Rail – **See Diagram C**
13. **DRY FIT THE ALL OF THE PARTS – DO NOT GLUE THEM**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of veneer plywood processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 27**

## **Manufacturing**

**OBJECTIVES:** **DAY 3** Students will be able to process E Top Shelf Panel and D Top Rail with biscuit joints  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **12. E Top Shelf Panel – biscuit joints**

1. Dry fit the Center Panel Assembly and the **D Front Rails** using biscuits
2. Use a bar clamp to gently hold the complete assembly together
3. Slide **E Top Panel** into the assembly – this is the top compartments base
4. The bottom of **E Top Panel** should be flush with the bottom of **D Top Front Rail**
5. Turn the whole cabinet upside down
6. Measure 7" increments and mark 3 locations for biscuit joints. Place the marks on both D Top Rail and E Top Shelf Panel – **See Diagram**
7. Set the biscuit jointer to the No. 10 setting
8. Set the biscuit jointer height of cut to 3/8"
9. Get two scrap pieces of wood that are exactly 3/4" thick
10. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface

11. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.

12. Make the cuts on E Top Shelf and on D Front Rail – **See Diagram C**

13. **DRY FIT THE ALL OF THE PARTS – DO NOT GLUE THEM**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of veneer plywood processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 28**

## **Manufacturing**

**OBJECTIVES:** **DAY 4** Students will be able to process E Top Shelf Panel and D Top Rail with biscuit joints  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **12. E Top Shelf Panel – biscuit joints**

1. Dry fit the Center Panel Assembly and the **D Front Rails** using biscuits
2. Use a bar clamp to gently hold the complete assembly together
3. Slide **E Top Panel** into the assembly – this is the top compartments base
4. The bottom of **E Top Panel** should be flush with the bottom of **D Top Front Rail**
5. Turn the whole cabinet upside down
6. Measure 7" increments and mark 3 locations for biscuit joints. Place the marks on both D Top Rail and E Top Shelf Panel – **See Diagram**
7. Set the biscuit jointer to the No. 10 setting
8. Set the biscuit jointer height of cut to 3/8"
9. Get two scrap pieces of wood that are exactly 3/4" thick
10. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
11. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
12. Make the cuts on E Top Shelf and on D Front Rail – **See Diagram C**



### 13. DRY FIT THE ALL OF THE PARTS – DO NOT GLUE THEM

<b>EVALUATION:</b>	Informal evaluation of class participation and cleanup duties Informal assessment of completion of objectives
<b>ENRICHMENT:</b>	Independent exploration of veneer plywood processing
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room Option for preferential seating Option for individual guidance Verbal presentation of reading material by aid when present Additional time to complete assignments as necessary Modified Tests & Quizzes Breaking up larger assignments into smaller manageable pieces
<b>PA STANDARDS for Science, Engineering, and Technology:</b>	3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**February 29**

## Manufacturing

<b>OBJECTIVES:</b>	<b>DAY 5</b> Students will be able to process E Top Shelf Panel and D Top Rail with biscuit joints Students will be able to follow specific directions Students will be able to use problem solving skills Students will be able to use the processing machines safely, correctly, and efficiently
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<b>ACTIVITIES:</b>	Complete the process below:
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### 12. E Top Shelf Panel – biscuit joints

1. Dry fit the Center Panel Assembly and the **D Front Rails** using biscuits
2. Use a bar clamp to gently hold the complete assembly together
3. Slide **E Top Panel** into the assembly – this is the top compartments base
4. The bottom of **E Top Panel** should be flush with the bottom of **D Top Front Rail**
5. Turn the whole cabinet upside down
6. Measure 7" increments and mark 3 locations for biscuit joints. Place the marks on both D Top Rail and E Top Shelf Panel – **See Diagram**
7. Set the biscuit jointer to the No. 10 setting
8. Set the biscuit jointer height of cut to 3/8"
9. Get two scrap pieces of wood that are exactly 3/4" thick
10. Align and mark the scrap pieces of wood then use the biscuit jointer on a clean hard surface
11. Test a No. 10 biscuit in the joint. Make adjustments as necessary and retest the cut.
12. Make the cuts on E Top Shelf and on D Front Rail – **See Diagram C**

### 13. DRY FIT THE ALL OF THE PARTS – DO NOT GLUE THEM

<b>EVALUATION:</b>	Informal evaluation of class participation and cleanup duties
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Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of veneer plywood processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 1**

## Manufacturing

**OBJECTIVES:** **DAY 1** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**T Tray Glides**– select stock 1" x 1" x 18" minimum **QTY 8**

### PROCESS MATERIALS

**T Tray Glides** finished size:  $\frac{3}{4}$ " x  $\frac{11}{16}$ " x 17"

- A. Radial Arm Saw / Miter Saw** – if stock length is >18" cut it to 18"
- B. Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is >  $7\frac{3}{4}$ ", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is <  $7\frac{3}{4}$ ", go to step C.

- C. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. Table Saw** – Cut to **T Side Panel Stile's** final width of  $\frac{11}{16}$ "  
[Put the jointed edge against the fence and the flat face on the table]
- F. Planner** (small planer) – thickness – Reduce to the exact thickness of  $\frac{3}{8}$ " <Use the planer technique!>
- G. Miter Saw** - Cut off  $\frac{1}{4}$ " off of one end, then cut to exact length of 17"  
\*\*Remember to check what side of the line you need to cut on

Keep the larger cutoff piece.

H. **Mark** – Lightly write your name and letter “T” on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of narrow table saw ripping operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 4**

## **Manufacturing**

**OBJECTIVES:** **DAY 2** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**T Tray Glides**– select stock 1” x 1” x 18” minimum **QTY 8**

### **PROCESS MATERIALS**

**T Tray Glides** finished size:  $\frac{3}{4}$ ” x  $11\frac{1}{16}$ ” x 17”

**A. Radial Arm Saw / Miter Saw** – if stock length is >18” cut it to 18”

**B. Inspect** – check if rough stock is cupped

(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is >  $7\frac{3}{4}$ ”, carefully rip it to 2” using the table saw then go to step C.

\*\*If your stock is cupped and its width is <  $7\frac{3}{4}$ ”, **go to step C.**

**C. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table

**D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

- E. **Table Saw** – Cut to **T Side Panel Stile's** final width of 11/16"  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of 3/8" <Use the planer technique!>
- G. **Miter Saw** - Cut off 1/4" off of one end, then cut to exact length of 17"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- H. **Mark** – Lightly write your name and letter "**T**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of narrow table saw ripping operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 5**

## Manufacturing

**OBJECTIVES:** **DAY 3** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**T Tray Glides**– select stock 1" x 1" x 18" minimum **QTY 8**

### PROCESS MATERIALS

**T Tray Glides** finished size: 3/4" x 11/16" x 17"

- A. **Radial Arm Saw / Miter Saw** – if stock length is >18" cut it to 18"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 3/4", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 3/4", **go to step C.**

- C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. **Table Saw** – Cut to **T Side Panel Stile's** final width of 11/16"  
[Put the jointed edge against the fence and the flat face on the table]
- F. **Planner** (small planer) – thickness – Reduce to the exact thickness of 3/8" <Use the planer technique!>
- G. **Miter Saw** - Cut off ¼" off of one end, then cut to exact length of 17"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- H. **Mark** – Lightly write your name and letter "T" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of narrow table saw ripping operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 6**

## Manufacturing

**OBJECTIVES:** **DAY 4** Students will be able to process T Tray Glides  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**T Tray Glides**– select stock 1" x 1" x 18" minimum **QTY 8**

### PROCESS MATERIALS

**T Tray Glides** finished size: ¾" x 11/16" x 17"

- A. **Radial Arm Saw / Miter Saw** – if stock length is >18" cut it to 18"
- B. **Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peaks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is  $> 7 \frac{3}{4}$ ", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is  $< 7 \frac{3}{4}$ ", **go to step C.**

C. **Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table

D. **Jointer** – Edge – Fix the better edge [Put the flat face against the fence]

E. **Table Saw** – Cut to **T Side Panel Stile's** final width of 11/16"

[Put the jointed edge against the fence and the flat face on the table]

F. **Planner** (small planer) – thickness – Reduce to the exact thickness of 3/8" <Use the planer technique!>

G. **Miter Saw** - Cut off 1/4" off of one end, then cut to exact length of 17"

\*\*Remember to check what side of the line you need to cut on

Keep the larger cutoff piece.

H. **Mark** – Lightly write your name and letter "T" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of narrow table saw ripping operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 7**

## **Manufacturing**

**OBJECTIVES:** **DAY 1** Students will be able to assemble the T Tray Glides to the Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **14. T Tray Glides & Center Panel Assembly - QTY 2**

1. Layout the location for all of T Tray Glides ***both sides at the same time!***  
\*\*THE STRIPS ARE ATTACHED AT POINTS MEASURED FROM THE TOP EDGE\*\* **See Diagram A**
2. Layout the hole locations on T Tray Guides ***THE LEFT And RIGHT SIDE ARE DIFFERENT!*** – **See Diagram B**
3. Select an appropriate drill bit to pre-drill the wood screw holes

4. **DRILL PRESS** – place a piece of cardboard on the drill press table – this will help eliminate scratches from the table
5. **DRILL PRESS** – use the depth nuts to set the appropriate pre-drilling depth
6. **DRILL PRESS** – test the drill press depth with a scrap piece of wood that is 1 ½" thick (or two ¾" thick boards) – adjust the dept as necessary
7. **DRILL PRESS** – use a soft jaw clamp to secure the T Tray Guides one at a time and pre-drill the holes
8. **DRILL PRESS** – install the countersink bit into the drill press and use the depth nuts to set the dept
9. **DRILL PRESS** – counter sink the predrilled holes to the appropriate depth – the screw head should be flush or sunk slightly below the surface of the wood

10. Wet a paper towel or rag for cleaning glue squeeze out

11. Use a small amount of Tight Bond wood glue - apply it with a brush to the Center Panel **only**

12. Select 16 flat head wood screws ¾" long – use a screwdriver (NOT A DRILL) to install the screws

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of accurate drilling operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 8**

## Manufacturing

**OBJECTIVES:** **DAY 2** Students will be able to assemble the T Tray Glides to the Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### 14. T Tray Glides & Center Panel Assembly - QTY 2

1. Layout the location for all of T Tray Glides **both sides at the same time!**  
\*\*THE STRIPS ARE ATTACHED AT POINTS MEASURED FROM THE TOP EDGE\*\* See Diagram A
2. Layout the hole locations on T Tray Guides THE LEFT And RIGHT SIDE ARE DIFFERENT! – See Diagram B
3. Select an appropriate drill bit to pre-drill the wood screw holes
4. **DRILL PRESS** – place a piece of cardboard on the drill press table – this will help eliminate scratches from the table
5. **DRILL PRESS** – use the depth nuts to set the appropriate pre-drilling depth
6. **DRILL PRESS** – test the drill press depth with a scrap piece of wood

that is 1 ½" thick (or two ¾" thick boards) – adjust the dept as necessary

7. **DRILL PRESS** – use a soft jaw clamp to secure the T Tray Guides one at a time and pre-drill the holes
8. **DRILL PRESS** – install the countersink bit into the drill press and use the depth nuts to set the dept
9. **DRILL PRESS** – counter sink the predrilled holes to the appropriate depth – the screw head should be flush or sunk slightly below the surface of the wood
10. Wet a paper towel or rag for cleaning glue squeeze out
11. Use a small amount of Tight Bond wood glue - apply it with a brush to the Center Panel **only**
12. Select 16 flat head wood screws ¾" long – use a screwdriver (NOT A DRILL) to install the screws

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of accurate drilling operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 11**

## Manufacturing

**OBJECTIVES:** **DAY 3** Students will be able to assemble the T Tray Glides to the Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### 14. T Tray Glides & Center Panel Assembly - QTY 2

1. Layout the location for all of T Tray Glides **both sides at the same time!**  
\*\*THE STRIPS ARE ATTACHED AT POINTS MEASURED FROM THE TOP EDGE\*\* See Diagram A
2. Layout the hole locations on T Tray Guides THE LEFT And RIGHT SIDE ARE DIFFERENT! – See Diagram B
3. Select an appropriate drill bit to pre-drill the wood screw holes
4. **DRILL PRESS** – place a piece of cardboard on the drill press table – this will help eliminate scratches from the table
5. **DRILL PRESS** – use the depth nuts to set the appropriate pre-drilling depth
6. **DRILL PRESS** – test the drill press depth with a scrap piece of wood  
that is 1 ½" thick (or two ¾" thick boards) – adjust the dept as necessary
7. **DRILL PRESS** – use a soft jaw clamp to secure the T Tray Guides one at a time and pre-drill the holes
8. **DRILL PRESS** – install the countersink bit into the drill press and use the depth nuts to set the dept
9. **DRILL PRESS** – counter sink the predrilled holes to the appropriate depth – the screw head should be flush or sunk slightly below the surface of the wood
10. Wet a paper towel or rag for cleaning glue squeeze out



11. Use a small amount of Tight Bond wood glue - apply it with a brush to the Center Panel **only**
12. Select 16 flat head wood screws  $\frac{3}{4}$ " long – use a screwdriver (NOT A DRILL) to install the screws

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of accurate drilling operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 12**

## Manufacturing

**OBJECTIVES:** **DAY 4** Students will be able to assemble the T Tray Glides to the Center Panel Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### 14. T Tray Glides & Center Panel Assembly - QTY 2

1. Layout the location for all of T Tray Glides ***both sides at the same time!***  
\*\*THE STRIPS ARE ATTACHED AT POINTS MEASURED FROM THE TOP EDGE\*\* See Diagram A
2. Layout the hole locations on T Tray Guides ***THE LEFT And RIGHT SIDE ARE DIFFERENT!*** – See Diagram B
3. Select an appropriate drill bit to pre-drill the wood screw holes
4. **DRILL PRESS** – place a piece of cardboard on the drill press table – this will help eliminate scratches from the table
5. **DRILL PRESS** – use the depth nuts to set the appropriate pre-drilling depth
6. **DRILL PRESS** – test the drill press depth with a scrap piece of wood  
that is 1  $\frac{1}{2}$ " thick (or two  $\frac{3}{4}$ " thick boards) – adjust the dept as necessary
7. **DRILL PRESS** – use a soft jaw clamp to secure the T Tray Guides one at a time and pre-drill the holes
8. **DRILL PRESS** – install the countersink bit into the drill press and use the depth nuts to set the dept
9. **DRILL PRESS** – counter sink the predrilled holes to the appropriate depth – the screw head should be flush or sunk slightly below the surface of the wood
10. Wet a paper towel or rag for cleaning glue squeeze out
11. Use a small amount of Tight Bond wood glue - apply it with a brush to the Center Panel **only**
12. Select 16 flat head wood screws  $\frac{3}{4}$ " long – use a screwdriver (NOT A DRILL) to install the screws

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of accurate drilling operations
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces
- PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 13**

## **Manufacturing**

- OBJECTIVES:** **DAY 1** Students will be able to process G Backboard  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

- ACTIVITIES:** Complete the process below:

### **15. G Backboard** – select stock $\frac{3}{4}$ " x 19 $\frac{1}{2}$ " x 28 $\frac{3}{4}$ " minimum **QTY 1**

#### **PROCESS MATERIALS**

**G Backboard** finished size: 34" x 19  $\frac{1}{2}$ " x 28  $\frac{3}{4}$ "

- A. Table Saw** – Cut to G Backboard's final width of 19  $\frac{1}{2}$ "
- B. Radial Arm Saw** – Cut to G Backboard's final length of 28  $\frac{3}{4}$ "
- C. Mark** – Lightly write your name and letter "**G**" on the bottom or top of this piece in **PENCIL**

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of accurate drilling operations
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary

Modified Tests & Quizzes

Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 14**

## Manufacturing

**OBJECTIVES:** **DAY 2** Students will be able to process G Backboard  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**15. G Backboard** – select stock  $\frac{3}{4}$ " x 19  $\frac{1}{2}$ " x 28  $\frac{3}{4}$ " minimum **QTY 1**

### PROCESS MATERIALS

**G Backboard** finished size: 34" x 19  $\frac{1}{2}$ " x 28  $\frac{3}{4}$ "

- A. **Table Saw** – Cut to G Backboard's final width of 19  $\frac{1}{2}$ "
- B. **Radial Arm Saw** – Cut to G Backboard's final length of 28  $\frac{3}{4}$ "
- C. **Mark** – Lightly write your name and letter "G" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of accurate drilling operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 15**

## Manufacturing

**OBJECTIVES:** **DAY 1** Students will be able to process H Backboard Edge  
Students will be able to follow specific directions  
Students will be able to use problem solving skills

Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**16. H Backboard Edge** - select stock 1" x 1" x 29 3/4" minimum **QTY 1**

**PROCESS MATERIALS**

**H Backboard Edge** finished size: 3/4" x 1/2" x 28 3/4"

- A. Radial Arm Saw / Miter Saw** – if stock length is >29 3/4" cut it to 29 3/4"
- B. Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 3/4", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 3/4", **go to step C.**

- C. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. Table Saw** – Cut to **H Backboard Edge's** final width of 1/2"  
[Put the jointed edge against the fence and the flat face on the table]
- F. Planner** (small planer) – thickness – Reduce to the exact thickness of 3/4"
- G. Miter Saw** - Cut off 1/4" off of one end, then cut to exact length of 28 3/4"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- H. Mark** – Lightly write your name and letter "**H**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of thin strip processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 18**

## Manufacturing

**OBJECTIVES:** **DAY 2** Students will be able to process H Backboard Edge  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**16. H Backboard Edge** - select stock 1" x 1" x 29 3/4" minimum **QTY 1**

### PROCESS MATERIALS

**H Backboard Edge** finished size: 3/4" x 1/2" x 28 3/4"

- A. Radial Arm Saw / Miter Saw** – if stock length is >29 3/4" cut it to 29 3/4"
- B. Inspect** – check if rough stock is cupped  
(Put a straight edge such as a combination square across the grain. Hold the stock up to a light source. If light peeks beneath the straight edge in the center, this is the cupped side. Mark it with an arrow pointing up.)

\*\*If your stock is cupped like the diagram and its width is > 7 3/4", carefully rip it to 2" using the table saw then go to step C.

\*\*If your stock is cupped and its width is < 7 3/4", **go to step C.**

- C. Jointer** – Fixes flat face - gives a flat face \*cupped side down (arrow pointing down) on the jointer table
- D. Jointer** – Edge – Fix the better edge [Put the flat face against the fence]
- E. Table Saw** – Cut to **H Backboard Edge's** final width of 1/2"  
[Put the jointed edge against the fence and the flat face on the table]
- F. Planner** (small planer) – thickness – Reduce to the exact thickness of 3/4"
- G. Miter Saw** - Cut off 1/4" off of one end, then cut to exact length of 28 3/4"  
\*\*Remember to check what side of the line you need to cut on  
Keep the larger cutoff piece.
- H. Mark** – Lightly write your name and letter "**H**" on the bottom or top of this piece in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of thin strip processing

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**March 19**

## Manufacturing

**OBJECTIVES:** **DAY 1** Students will be able to perform the dado operation to G Backboard  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**17. G Backboard** – finished size: 34" x 19 ½" x 28 ¾" minimum **QTY 1** **DADO OPERATION**

### PROCESS MATERIALS

**G Backboard** dado: ¾" wide x 3/8" deep dado groove SEE DIAGRAM BELOW

- 1. Table Saw** – Place the MDF auxiliary fence on top of the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.
4. Insert the ¾" stacked dado blade and raise it to 3/8" above the table.
5. Set the fence 1 ¾" from the dado blade.

DO NOT USE THE SCALE ON THE FENCE...USE A SQUARE TO CHECK THIS MEASUREMENT!!

6. Cut a test piece and check the depth and thickness of the cut. It should be ¾" wide x 3/8" deep.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of dado operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**March 20**

## Manufacturing

**OBJECTIVES:** **DAY 2** Students will be able to perform the dado operation to G Backboard  
Students will be able to follow specific directions

Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**17. G Backboard** – finished size: 34" x 19 ½" x 28 ¾" minimum **QTY 1** **DADO OPERATION**

**PROCESS MATERIALS**

**G Backboard** dado: ¾" wide x 3/8" deep dado groove SEE DIAGRAM BELOW

**2. Table Saw** – Place the MDF auxiliary fence on top of the table saw fence. This is a sacrificial fence. It will cut by the blade instead of the real fence.

7. Insert the ¾" stacked dado blade and raise it to 3/8" above the table.

8. Set the fence 1 ¾" from the dado blade.

DO NOT USE THE SCALE ON THE FENCE...USE A SQUARE TO CHECK THIS MEASUREMENT!!

9. Cut a test piece and check the depth and thickness of the cut. It should be ¾" wide x 3/8" deep.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of dado operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 21**

## **Manufacturing**

**OBJECTIVES:** **DAY 1** Students will be able assemble H Backboard Edge Strip to G Backboard  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**18. Attach H Backboard Edge Strip to G Backboard** **QTY 1**

**PROCESS MATERIALS**

**G Backboard** SEE DIAGRAM BELOW

1. **Dry fit** H Backboard Edge Strip to G Backboard's top edge.

2. Use a glue brush and put a **very small amount** of glue at the top center of G Backboard.
3. Use a cut brad nail and a drill to pre-drill the holes for the brad nails. See diagram below for spacing.
4. Use a tack hammer and a nail set to attach the edge strip to the backboard.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of using a nail set and tack hammer

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 22**

## **Manufacturing**

**OBJECTIVES:** **DAY 2** Students will be able assemble H Backboard Edge Strip to G Backboard  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **18. Attach H Backboard Edge Strip to G Backboard QTY 1**

#### **PROCESS MATERIALS**

**G Backboard** SEE DIAGRAM BELOW

5. **Dry fit** H Backboard Edge Strip to G Backboard's top edge.
6. Use a glue brush and put a **very small amount** of glue at the top center of G Backboard.
7. Use a cut brad nail and a drill to pre-drill the holes for the brad nails. See diagram below for spacing.
8. Use a tack hammer and a nail set to attach the edge strip to the backboard.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of using a nail set and tack hammer

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students



Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 25**

## **Manufacturing**

**OBJECTIVES:** **DAY 1** Students will be able assemble E Top Shelf and D Top Rail Assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **19. E Top Shelf & D Top Rail Assembly**

1. Align Top Shelf E and Top Rail D and dry fit the joints with biscuits.
2. The clamps will pull the joints together later.
3. If everything fits snug, remove the biscuits and use a sander to remove all of the pencil marks.
4. Apply glue to the biscuits and reinsert them into the joints.
4. Put a thin bead of glue on the edge of E Top Shelf.
5. Use three bar clamps and clamp the assembly together.
6. The next day after the joint is completely dry, sand the top edge of the joint so that it is flush.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of wood gluing techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**March 26**

## **Manufacturing**

**OBJECTIVES:** **DAY 2** Students will be able assemble E Top Shelf and D Top Rail Assembly

Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **19. E Top Shelf & D Top Rail Assembly**

1. Align Top Shelf E and Top Rail D and dry fit the joints with biscuits.
2. The clamps will pull the joints together later.
3. If everything fits snug, remove the biscuits and use a sander to remove all of the pencil marks.
4. Apply glue to the biscuits and reinsert them into the joints.
4. Put a thin bead of glue on the edge of E Top Shelf.
5. Use three bar clamps and clamp the assembly together.
6. The next day after the joint is completely dry, sand the top edge of the joint so that it is flush.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of wood gluing techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 3**

## **Manufacturing**

**OBJECTIVES:** **DAY 1** Students will be able to complete the carcass assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **20. Partial Case Assembly**

1. Get a wet paper towel ready for cleaning any excess glue squeeze-out.
2. The case can now be assembled using glue on the biscuits and along both side of the E Top Shelf
3. Put glue inside the dado of both side panels.
4. Put glue on the edges of the top shelf.
5. E Top Shelf will be held more securely once its back edge is placed in the backboard's groove

6. When all parts are aligned properly, clamp the case with four clamps. Align the clamps on top of the top and bottom rail.
7. BE SURE TO USE WOOD BLOCKS ON THE JAWS OF CLAMPS. IF YOU DO NOT USE BLOCKS, YOU WILL HAVE JAW MARKS ON YOUR PROJECT.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of clamping techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 4**

## **Manufacturing**

**OBJECTIVES:** **DAY 2** Students will be able to complete the carcass assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **20. Partial Case Assembly**

1. Get a wet paper towel ready for cleaning any excess glue squeeze-out.
2. The case can now be assembled using glue on the biscuits and along both side of the E Top Shelf
3. Put glue inside the dado of both side panels.
4. Put glue on the edges of the top shelf.
5. E Top Shelf will be held more securely once its back edge is placed in the backboard's groove
6. When all parts are aligned properly, clamp the case with four clamps. Align the clamps on top of the top and bottom rail.
7. BE SURE TO USE WOOD BLOCKS ON THE JAWS OF CLAMPS. IF YOU DO NOT USE BLOCKS, YOU WILL HAVE JAW MARKS ON YOUR PROJECT.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of clamping techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 5**

## **Manufacturing**

**OBJECTIVES:** **DAY 3** Students will be able to complete the carcass assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **20. Partial Case Assembly**

1. Get a wet paper towel ready for cleaning any excess glue squeeze-out.
2. The case can now be assembled using glue on the biscuits and along both side of the E Top Shelf
3. Put glue inside the dado of both side panels.
4. Put glue on the edges of the top shelf.
5. E Top Shelf will be held more securely once its back edge is placed in the backboard's groove
6. When all parts are aligned properly, clamp the case with four clamps. Align the clamps on top of the top and bottom rail.
7. BE SURE TO USE WOOD BLOCKS ON THE JAWS OF CLAMPS. IF YOU DO NOT USE BLOCKS, YOU WILL HAVE JAW MARKS ON YOUR PROJECT.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of clamping techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance

Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 8**

## **Manufacturing**

**OBJECTIVES:** **DAY 4** Students will be able to complete the carcass assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

### **20. Partial Case Assembly**

1. Get a wet paper towel ready for cleaning any excess glue squeeze-out.
2. The case can now be assembled using glue on the biscuits and along both side of the E Top Shelf
3. Put glue inside the dado of both side panels.
4. Put glue on the edges of the top shelf.
5. E Top Shelf will be held more securely once its back edge is placed in the backboard's groove
6. When all parts are aligned properly, clamp the case with four clamps. Align the clamps on top of the top and bottom rail.
7. BE SURE TO USE WOOD BLOCKS ON THE JAWS OF CLAMPS. IF YOU DO NOT USE BLOCKS, YOU WILL HAVE JAW MARKS ON YOUR PROJECT.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of clamping techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 9**

## **Manufacturing**

**OBJECTIVES:**      **DAY 5** Students will be able to complete the carcass assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **20. Partial Case Assembly**

1. Get a wet paper towel ready for cleaning any excess glue squeeze-out.
2. The case can now be assembled using glue on the biscuits and along both side of the E Top Shelf
3. Put glue inside the dado of both side panels.
4. Put glue on the edges of the top shelf.
5. E Top Shelf will be held more securely once its back edge is placed in the backboard's groove
6. When all parts are aligned properly, clamp the case with four clamps. Align the clamps on top of the top and bottom rail.
7. BE SURE TO USE WOOD BLOCKS ON THE JAWS OF CLAMPS. IF YOU DO NOT USE BLOCKS, YOU WILL HAVE JAW MARKS ON YOUR PROJECT.

**EVALUATION:**      Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:**      Independent exploration of clamping techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 10**

## **Manufacturing**

**OBJECTIVES:**      **DAY 6** Students will be able to complete the carcass assembly  
Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:**      Complete the process below:

### **20. Partial Case Assembly**

1. Get a wet paper towel ready for cleaning any excess glue squeeze-out.
2. The case can now be assembled using glue on the biscuits and along both side of the E Top Shelf
3. Put glue inside the dado of both side panels.
4. Put glue on the edges of the top shelf.
5. E Top Shelf will be held more securely once its back edge is placed in the backboard's groove
6. When all parts are aligned properly, clamp the case with four clamps. Align the clamps on top of the top and bottom rail.
7. BE SURE TO USE WOOD BLOCKS ON THE JAWS OF CLAMPS. IF YOU DO NOT USE BLOCKS, YOU WILL HAVE JAW MARKS ON YOUR PROJECT.

**EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of clamping techniques

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 11**

## Manufacturing

**OBJECTIVES:** Students will be able to calculate the layout for the P Drawer Bottoms in the most efficient manner on a sheet of 4' x 8' plywood.

**ACTIVITIES:** Students will get into pairs with a calculator to solve for the most efficient manner to process the plywood with the minimal amount of waste. Students will present their solutions to the class and draw the diagram on the white board. The winning group will receive 5 bonus points.

Process a 4'x8' sheet of plywood on the table saw to 17" x 27 15/16" qty 5

### PROCESS MATERIALS

**P Drawer Bottoms** finished size: 3/16" x 17" x 27 15/16"

- A. Table Saw – rip to width +1/8
- B. Table Saw – rip to length +1/8
- C. Table Saw – rip to final width
- D. Table Saw – rip to final length
- E. NOTE : Each student needs 4 pieces

F. **Mark** – Use a marker and write your name on the primed side of the board.

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration group cutting for efficiency
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 12**

## Manufacturing

- OBJECTIVES:** Students will be able to process:
- K Upper Drawer Sides** Finished size  $\frac{3}{4}$ " x 2" 15 3/8" QTY 4
  - L Lower Drawer Sides** Finished size  $\frac{3}{4}$ " x 3" 15 3/8" QTY 4
  - M Upper Backs and Fronts** Finished size  $\frac{3}{4}$ " x 2" 27 15/16" QTY 4
  - N Lower Backs and Fronts** Finished size  $\frac{3}{4}$ " x 3" 27 15/16" QTY
- Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

- ACTIVITIES:** Complete the process below:
- K & L**– select stock 1" x 3 1/4" x 17" minimum **QTY 8**
- M & N**– select stock 1" x 3 1/4" x 29" minimum **QTY 8**

### PROCESS MATERIALS

Use the standard operating procedure to process the rough stock into the final lengths and thickness.

**Mark** – Lightly write your name and letter "**K, L, M, or N**" on the bottoms of these pieces in **PENCIL**

- EVALUATION:** Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives
- ENRICHMENT:** Independent exploration of narrow table saw ripping operations
- ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T / F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present



Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 15**

## Manufacturing

### OBJECTIVES:

**DAY 2** Students will be able to process:

**K Upper Drawer Sides** Finished size  $\frac{3}{4}$ " x 2" 15 3/8" QTY 4

**L Lower Drawer Sides** Finished size  $\frac{3}{4}$ " x 3" 15 3/8" QTY 4

**M Upper Backs and Fronts** Finished size  $\frac{3}{4}$ " x 2" 27 15/16" QTY 4

**N Lower Backs and Fronts** Finished size  $\frac{3}{4}$ " x 3" 27 15/16" QTY

Students will be able to follow specific directions

Students will be able to use problem solving skills

Students will be able to use the processing machines safely, correctly, and efficiently

### ACTIVITIES:

Complete the process below:

**K & L**– select stock 1" x 3 1/4" x 17" minimum **QTY 8**

**M & N**– select stock 1" x 3 1/4" x 29" minimum **QTY 8**

### PROCESS MATERIALS

Use the standard operating procedure to process the rough stock into the final lengths and thickness.

**Mark** – Lightly write your name and letter "**K, L, M, or N**" on the bottoms of these pieces in **PENCIL**

### EVALUATION:

Informal evaluation of class participation and cleanup duties

Informal assessment of completion of objectives

### ENRICHMENT:

Independent exploration of narrow table saw ripping operations

### ACCOMMODATIONS:

Additional time to complete tasks / tests / quizzes / assignments

T /F Safety tests read to all students

Option for students to take formal assessments taken in the Learning Support room

Option for preferential seating

Option for individual guidance

Verbal presentation of reading material by aid when present

Additional time to complete assignments as necessary

Modified Tests & Quizzes

Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 16**

## Manufacturing

### OBJECTIVES:

**DAY 3** Students will be able to process:

**K Upper Drawer Sides** Finished size  $\frac{3}{4}$ " x 2" 15 3/8" QTY 4

**L Lower Drawer Sides** Finished size  $\frac{3}{4}$ " x 3" 15 3/8" QTY 4

**M Upper Backs and Fronts** Finished size  $\frac{3}{4}$ " x 2" 27 15/16" QTY 4

**N Lower Backs and Fronts** Finished size  $\frac{3}{4}$ " x 3" 27 15/16" QTY

Students will be able to follow specific directions

Students will be able to use problem solving skills

Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**K & L**– select stock 1" x 3 1/4" x 17" minimum **QTY 8**

**M & N**– select stock 1" x 3 1/4" x 29" minimum **QTY 8**

**PROCESS MATERIALS**

Use the standard operating procedure to process the rough stock into the final lengths and thickness.

**Mark** – Lightly write your name and letter "**K, L, M, or N**" on the bottoms of these pieces in **PENCIL**

**EVALUATION:** Informal evaluation of class participation and cleanup duties

Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of narrow table saw ripping operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments

T /F Safety tests read to all students

Option for students to take formal assessments taken in the Learning Support room

Option for preferential seating

Option for individual guidance

Verbal presentation of reading material by aid when present

Additional time to complete assignments as necessary

Modified Tests & Quizzes

Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 17**

## Manufacturing

**OBJECTIVES:** Students will be able to biscuit the drawer assembly components.

Students will be able to follow specific directions

Students will be able to use problem solving skills

Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

**K Upper Drawer Sides** and **M Upper Backs and Fronts** are mated with biscuits in the appropriate locations

**L Lower Drawer Sides** and **N Lower Backs and Fronts** are mated with biscuits in the appropriate location

**PROCESS MATERIALS**

Change the biscuit joiner depth setting to "O" for the smaller size O biscuits.

Use the standard operating procedure for using the biscuit joiner

Dry fit the part to check for proper alignment.

<b>EVALUATION:</b>	Informal evaluation of class participation and cleanup duties Informal assessment of completion of objectives
<b>ENRICHMENT:</b>	Independent exploration of narrow table saw ripping operations
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room Option for preferential seating Option for individual guidance Verbal presentation of reading material by aid when present Additional time to complete assignments as necessary Modified Tests & Quizzes Breaking up larger assignments into smaller manageable pieces
<b>PA STANDARDS for Science, Engineering, and Technology:</b> 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B	

**April 18**

## Manufacturing

<b>OBJECTIVES:</b>	Students will be able assemble the drawer subassembly. QTY 4  Students will be able to follow specific directions Students will be able to use problem solving skills Students will be able to use the processing machines safely, correctly, and efficiently
<b>ACTIVITIES:</b>	Complete the process below: <ol style="list-style-type: none"> <li>1. <b>K Upper Drawer Sides</b> and <b>M Upper Backs and Fronts</b> are mated with biscuits in the appropriate locations</li> <li>2. Put the primered side of the plywood down.</li> <li>3. K &amp; M are glued together on top of the drawer bottom and in the biscuit holes- two edges must be completely flush</li> <li>4. Use two bar clamps to secure the sides</li> <li>5. Use drywall screws to attach the drawer bottom to the side pieces.</li> </ol> <ol style="list-style-type: none"> <li>1. <b>L Lower Drawer Sides</b> and <b>N Lower Backs and Fronts</b> are mated with biscuits in the appropriate location</li> <li>2. Put the primered side of the plywood down.</li> <li>3. K &amp; M are glued together on top of the drawer bottom and in the biscuit holes- two edges must be completely flush</li> <li>4. Use two bar clamps to secure the sides</li> <li>5. Use drywall screws to attach the drawer bottom to the side pieces.</li> </ol>
<b>EVALUATION:</b>	Formal assessment on the completion of 4 drawers for assembly: 10 points each 40 total Informal evaluation of class participation and cleanup duties Informal assessment of completion of objectives
<b>ENRICHMENT:</b>	Independent exploration of narrow table saw ripping operations
<b>ACCOMMODATIONS:</b>	Additional time to complete tasks / tests / quizzes / assignments T /F Safety tests read to all students Option for students to take formal assessments taken in the Learning Support room

Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 19**

## **Manufacturing**

**OBJECTIVES:** **DAY 2** Students will be able assemble the drawer subassembly. QTY 4

Students will be able to follow specific directions  
Students will be able to use problem solving skills  
Students will be able to use the processing machines safely, correctly, and efficiently

**ACTIVITIES:** Complete the process below:

- a. **K Upper Drawer Sides** and **M Upper Backs and Fronts** are mated with biscuits in the appropriate locations
  - b. Put the primed side of the plywood down.
  - c. K & M are glued together on top of the drawer bottom and in the biscuit holes- two edges must be completely flush
  - d. Use two bar clamps to secure the sides
  - e. Use drywall screws to attach the drawer bottom to the side pieces.
- 
6. **L Lower Drawer Sides** and **N Lower Backs and Fronts** are mated with biscuits in the appropriate location
  7. Put the primed side of the plywood down.
  8. K & M are glued together on top of the drawer bottom and in the biscuit holes- two edges must be completely flush
  9. Use two bar clamps to secure the sides
  10. Use drywall screws to attach the drawer bottom to the side pieces.

**EVALUATION:** Formal assessment on the completion of 4 drawers for assembly: 10 points each 40 total  
Informal evaluation of class participation and cleanup duties  
Informal assessment of completion of objectives

**ENRICHMENT:** Independent exploration of narrow table saw ripping operations

**ACCOMMODATIONS:** Additional time to complete tasks / tests / quizzes / assignments  
T /F Safety tests read to all students  
Option for students to take formal assessments taken in the Learning Support room  
Option for preferential seating  
Option for individual guidance  
Verbal presentation of reading material by aid when present  
Additional time to complete assignments as necessary  
Modified Tests & Quizzes  
Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B

**April 22**

## **Manufacturing**

### **OBJECTIVES:**

**DAY 3** Students will be able assemble the drawer subassembly. QTY 4

Students will be able to follow specific directions

Students will be able to use problem solving skills

Students will be able to use the processing machines safely, correctly, and efficiently

### **ACTIVITIES:**

Complete the process below:

- f. **K Upper Drawer Sides** and **M Upper Backs and Fronts** are mated with biscuits in the appropriate locations
  - g. Put the primed side of the plywood down.
  - h. K & M are glued together on top of the drawer bottom and in the biscuit holes- two edges must be completely flush
  - i. Use two bar clamps to secure the sides
  - j. Use drywall screws to attach the drawer bottom to the side pieces.
- 
11. **L Lower Drawer Sides** and **N Lower Backs and Fronts** are mated with biscuits in the appropriate location
  12. Put the primed side of the plywood down.
  13. K & M are glued together on top of the drawer bottom and in the biscuit holes- two edges must be completely flush
  14. Use two bar clamps to secure the sides
  15. Use drywall screws to attach the drawer bottom to the side pieces.

### **EVALUATION:**

Formal assessment on the completion of 4 drawers for assembly: 10 points each 40 total

Informal evaluation of class participation and cleanup duties

Informal assessment of completion of objectives

### **ENRICHMENT:**

Independent exploration of narrow table saw ripping operations

### **ACCOMMODATIONS:**

Additional time to complete tasks / tests / quizzes / assignments

T / F Safety tests read to all students

Option for students to take formal assessments taken in the Learning Support room

Option for preferential seating

Option for individual guidance

Verbal presentation of reading material by aid when present

Additional time to complete assignments as necessary

Modified Tests & Quizzes

Breaking up larger assignments into smaller manageable pieces

**PA STANDARDS for Science, Engineering, and Technology:** 3.1.7A, 3.2.10A, 3.7.10A, 3.7.10B, 3.7.12A, 3.7.12B