



Multiple Category Scope and Sequence: Scope and Sequence Report For Course Standards and Objectives, Content, Skills, Vocabulary

Wednesday, August 20, 2014, 1:48PM



| Unit | Course Standards and Objectives | Content | Skills | Vocabulary |
|---|--|--|---|---|
| District Intermediate <u>Furniture Design & Manufacturing (48.0702) (District)</u>  2014-2015 <u>Collaboration</u> | <u>Furniture Design and Principles</u> <u>Project Design</u> (Week 1, 4 Weeks)   | UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 02 Students will be able to understand the design, planning and estimation process. <ul style="list-style-type: none"> ▪ Objective 0201 Identify elements and principles of design as they apply to woodworking and cabinetmaking/millwork manufacturing. ▪ Objective 0202 Identify standard furniture dimensions relating to tables, seating, bookshelves, and shelving. ▪ Objective 0203 Draw the necessary views of a selected project. ▪ Objective 0204 Create a material list for the selected project and determine the project cost. ▪ Objective 0205 Create a procedure list for construction of a cabinet. ▪ Objective 0206 Extract pertinent cabinet information and specifications from working drawings and specifications. | Principles of Design Elements of Design Standard furniture dimensions Necessary Views to describe Furniture pieces. What a material list is What a procedure list is what is a working drawing? | Design a piece of furniture Draw the views needed to construct a piece of furniture Create a bill of materials Create a procedure list Principles Proportion Balance Emphasis Rythm Harmony Elements Line Shape Color Mass Tone & Texture Fundamentals of good design Function Appearance Materials Working drawing Orthographic |

Safety  (Week 2, 4 Weeks) 

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 03

Students will be able to understand and demonstrate safe practices.

- Objective 0301
Demonstrate the ability to work safely in a wood shop following general safety rules.
- Objective 0302
Demonstrate the safe use of woodworking tools and machines.
- Objective 0303
Demonstrate how to handle, store, and dispose of materials according to MSDS sheets.
- Objective 0304
Pass a written safety test with a score of 100 percent.

Standard 04
Students will be able to understand and demonstrate the safe use of hand tools.

- Objective 0401
Describe the purpose and demonstrate the proper use of the following measuring and layout tools:
 - a. Measuring tape

How to safely and efficiently operate each hand and power tool in the shop.

We want them to understand that if they have any question of how to use a tool properly, they will not proceed with that operation without getting instruction from the teacher.

Safe and Proper Use of Hand Tools, Power Tools and Machines

- Safe use of all tools and machines
- Safe shop behavior
- Identification of hand and power tools
- How to choose the proper tool for the job
- Basic tool and machine setup

Demonstrate safe and proper use of each tool and power machine.

Pass the safety tests with 100 % correct.

- Pass safety test at 100%
- Identify basic woodworking hand tools
- Identify basic woodworking power hand tools
- Identify basic stationary woodworking machines
- Use basic working tools and machines safely

Pictorial
Detailed Views
Section Views
Front, Top, Side Views
Dimensions
Material List
Procedure List
Ripping
cross cutting
jointing
miter
MSDS
grain direction
VOC'S
Table Saw
Power Miter Saw
Radial Arm Saw
Band Saw

(and all other tools and power machines in the objectives listed above.)

- b. Scratch awl
- c. Combination square
- d. Try square
- e. Framing square
- f. Sliding T-bevel
- g. Tammel points
- h. Compass
- Objective 0402
Describe the purpose and demonstrate the proper use of the following cutting and shaping tools:
 - a. Utility knife
 - b. Back saw
 - c. Block plane
 - d. Wood chisel
 - e. Wood file/rasp
 - f. Hand saw
 - g. Jack plane
 - h. Glue scraper
 - i. Putty knife
- Objective 0403
Describe the purpose and demonstrate the proper use of the following striking tools:
 - a. Claw hammer
 - b. Dead-blow hammer
 - c. Rubber mallet
 - d. Nail set
- Objective 0404
Describe the purpose and demonstrate the proper use of the following drill bits:
 - a. Twist
 - b. Forstner
 - c. Spade
 - d. Countersink
 - e. Driver bits: Phillips, Square, slotted
 - f. Hole saw
 - g. Multi spur bit
 - h. Hogging tool

Standard 05
Students will be able to understand and demonstrate the safe use of portable power tools.

- Objective 0501
Describe the purpose and demonstrate the proper use of the following power tools:

- a. Pneumatic nailer
- b. Power drills
- c. Router
- d. Finish sander
- e. Belt sander
- f. Orbital sander
- g. Biscuit jointer
- h. Hand jig saw

Standard 06

Students will be able to understand and demonstrate the safe use of power machines.

- Objective 0601
Describe the purpose and demonstrate the proper use of the following sawing machines:
 - a. Table Saw
 - b. Power Miter Saw
 - c. Radial Arm Saw
 - d. Band Saw
- Objective 0602
Describe the purpose and demonstrate the proper use of the following surfacing machines:
 - a. Surface planer
 - b. Jointer
- Objective 0603
Describe the purpose and demonstrate the proper use of the following sanding machines:
 - a. Disc Sander
 - b. Surface Sander
 - c. Spindle Sander
- Objective 0604
Describe the purpose and demonstrate the proper use of the following shaping machines:
 - a. Router table
 - b. Shaper
- Objective 0605
Describe the purpose and demonstrate the proper use of the following drilling and turning machines:
 - a. Drill Press
 - b. Line boring machine

c. Lathe

Tool and Machines



(Week 3, 2 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 04
Students will be able to understand and demonstrate the safe use of hand tools.

- Objective 0401
Describe the purpose and demonstrate the proper use of the following measuring and layout tools:
 - a. Measuring tape
 - b. Scratch awl
 - c. Combination square
 - d. Try square
 - e. Framing square
 - f. Sliding T-bevel
 - g. Tammel points
 - h. Compass
 - Objective 0402
Describe the purpose and demonstrate the proper use of the following cutting and shaping tools:
 - a. Utility knife
 - b. Back saw
 - c. Block plane
 - d. Wood chisel
 - e. Wood file/rasp
 - f. Hand saw
 - g. Jack plane
 - h. Glue scraper
 - i. Putty knife
 - Objective 0403
Describe the purpose and demonstrate the proper use of the following striking tools:
 - a. Claw hammer
 - b. Dead-blow hammer
 - c. Rubber mallet
 - d. Nail set
 - Objective 0404
Describe the purpose and demonstrate the proper use of the following drill bits:
 - a. Twist
 - b. Forstner
- How to properly operate and safely use the machinery in the shop.
 - Identify common tools used in the woodshop.
 - properly adjust and or setup common machines?
- Safely operate machines.
 - Use right tool for right job.

Power Machinery

- Table Saw
- Up-cut Saw
- Power Miter Saw
- Radial Arm Saw
- Band Saw
- Surface planer
- Jointer
- Disc Sander
- Surface Sander
- Spindle Sander
- Edge Sander
- Disc Sander
- Router table
- Shaper
- Lathe
- Panel Saw
- Drill Press

Power Hand Tools

- Router
- Belt Sander
- Saber Saw
- Hand Drill
- Finsh Sander
- Biscuit
Jointer/Plate
Jointer
- Orbital Sander

- c. Spade
- d. Countersink
- e. Driver bits: Phillips, Square, slotted
- f. Hole saw
- g. Multi spur bit
- h. Hogging tool

Standard 05

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 - b. Power drills
 - c. Router
 - d. Finish sander
 - e. Belt sander
 - f. Orbital sander
 - g. Biscuit jointer
 - h. Hand jig saw

Standard 06

Students will be able to understand and demonstrate the safe use of power machines.

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Describe the purpose and demonstrate the proper use of the following sawing machines:
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 - c. Radial Arm Saw
 - d. Band Saw
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 - a. Surface planer
 - b. Jointer
- Objective 0603
Describe the purpose and demonstrate the proper use of the following sanding machines:

- a. Disc Sander
- b. Surface Sander
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 - a. Drill Press
 - b. Line boring machine
 - c. Lathe

Cabinet

Components

(Week 5, 2 Weeks)  

| | | | |
|--|--|---|---------------|
| UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 11 | Identify components of a face frame cabinet box. | Use the correct vocabulary when discussing parts on their project. | Stiles |
| Students will be able to understand and demonstrate the use of cabinet components and hardware. | Identify the components of a drawer . | Be able to correctly identify cabinet & furniture components. | Rails |
| <ul style="list-style-type: none"> ▪ Objective 1101 Identify the cabinet components of a face frame and cabinet box. <ul style="list-style-type: none"> a. Stile b. Rail c. Mullion d. Side e. Skin f. Base g. Shelf h. Web frame i. Kicker j. Drawer runner/glide k. Toe kick l. Back | Identify shelf supports, drawer guides, pulls and knobs. | | Mullions |
| <ul style="list-style-type: none"> ▪ Objective 1102 Describe the concept of a European (frameless) cabinet system and the advantages and disadvantages of that system. | Identify the parts of a drawer. | Identify basic construction methods.(frame and panel, casework construction,and rail and post construction. | Sides |
| <ul style="list-style-type: none"> ▪ Objective 1104 Identify the components of | | | Skin |
| | | | Base |
| | | | Shelf |
| | | | Web frame |
| | | | Kicker |
| | | | Drawer runner |
| | | | Glide |
| | | | Toe kick |
| | | | Back |
| | | | Drawer front |

- a drawer.
- Objective 1110
Identify basic construction methods.
 - a. Frame and panel
 - b. Casework construction
 - c. Post and rail

Drawer back

Drawer side

Drawer bottom

Shelf support

Drawer guides

Pulls and Knobs

Hinges-offset, overlay, butt, concealed

Project

Construction

(Week 5, 31 Weeks)  

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- Objective 0303
Demonstrate how to handle, store, and dispose of materials according to MSDS sheets.

Standard 04
Students will be able to understand and demonstrate the safe use of hand tools.

- Objective 0401
Describe the purpose and demonstrate the proper use of the following measuring and layout tools:
 - a. Measuring tape
 - b. Scratch awl
 - c. Combination square

- how to properly and safely use the woodworking equipment
- how to properly and safely work in the woodworking lab.
- all processes and methods required to build and finish an intermediate wood project.

- Construct a project

- Assembly
- Sub assembly
- Preassembly or dry fit
-
-

- d. Try square
- e. Framing square
- f. Sliding T-bevel
- g. Tammel points
- h. Compass
- Objective 0402
Describe the purpose and demonstrate the proper use of the following cutting and shaping tools:
 - a. Utility knife
 - b. Back saw
 - c. Block plane
 - d. Wood chisel
 - e. Wood file/rasp
 - f. Hand saw
 - g. Jack plane
 - h. Glue scraper
 - i. Putty knife
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 - c. Rubber mallet
 - d. Nail set
- Objective 0404
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 - a. Twist
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- Objective 0603
Describe the purpose and demonstrate the proper use of the following sanding machines:
 - a. Disc Sander
 - b. Surface Sander
 - c. Spindle Sander
- Objective 0604
Describe the purpose and demonstrate the proper use of the following shaping machines:
 - a. Router table
 - b. Shaper
- Objective 0605
Describe the purpose and demonstrate the proper use of the following drilling and turning machines:
 - a. Drill Press
 - b. Line boring machine
 - c. Lathe

Standard 09

Students will be able to understand and demonstrate the use of fasteners and adhesives.

- Objective 0901
Identify the various woodworking fasteners and the application of each.
 - a. Nails
 - b. Screws
 - c. Staples
 - d. Pins
 - e. Bolts
- Objective 0902
Identify the different adhesives and preferred use of each.
 - a. Yellow glue
 - b. Polyurethane glue
 - c. Cyanoacrylate
 - d. Epoxy
- Objective 0903
Identify the different types of clamps.
 - a. Bar
 - b. "C"
 - c. Spring
 - d. Band
 - e. Handscrew

Standard 10

Students will be able to understand and demonstrate the use of joinery.

- Objective 1001
Identify the basic wood joints used in furniture making.
 - a. Butt
 - b. Miter
 - c. Rabbet
 - d. Dado
 - e. Spline
 - f. Mortise and tenon
 - g. Dovetail
 - h. Groove (plough)
 - i. Lap
 - j. Pocket
 - k. Dowel
 - l. Biscuit
 - m. Blind dado

- Objective 1002
Construct the basic wood joints used in cabinetmaking/millwork.

Standard 11

Students will be able to understand and demonstrate the use of cabinet components and hardware.

- Objective 1105
Identify and properly install common cabinet/furniture hardware such as:
 - a. Hinges - offset, overlay, European, butt, lip
 - b. Drawer guides
 - c. Pulls and knobs
 - d. Shelf supports
- Objective 1106
Assemble a project with the proper adhesive and fasteners.
- Objective 1107
Use frame and panel construction in a project.
- Objective 1108
Construct a drawer.
- Objective 1109
Install lid or door and drawer.

Standard 12

Students will be able to understand and demonstrate finishing techniques.

- Objective 1201
Understand and properly apply the basic rules of sanding.
- Objective 1202
Select and correctly use each specified grit size.
- Objective 1203
Properly prepare a surface for finishing.
- Objective 1204
Properly apply stain, penetrating oil, and/or a clear finish.

- Objective 1205
Properly spray a clear coat.

Standard 13
Students will understand the need for professional development.

- Objective 1302
Set and meet goals.

Wood composition and characteristics



(Week 7, 5 Weeks)



| | | | |
|--|--------------------------------------|---|----------------|
| UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 07 | Differences in Hardwood and Softwood | Identify a variety of wood species | Hardwood |
| Students will be able to understand wood products, characteristics, and procedures. | How trees grow | Identify wood defects | Softwood |
| | How wood is harvested | Calculate Board footage | Coniferous |
| | Process from log to usable lumber | Calculate Square footage | Deciduous |
| <ul style="list-style-type: none"> Objective 0701 Describe the parts of a tree and the significance that it has in cabinet construction. <ol style="list-style-type: none"> Bark Sap wood Pith Annual (growth) rings | Process of grading lumber | Identify and compare man made vrs Natural wood components | FAS |
| | Common hardwood and softwood grades | | Selects |
| | Wood defects | | Commons |
| <ul style="list-style-type: none"> Objective 0702 Describe and know how natural defects. <ol style="list-style-type: none"> Warp Cracks Bark inclusions Knots | Man-made materials | | Plywood |
| | Wood characteristics | | Particle Board |
| <ul style="list-style-type: none"> Objective 0703 Demonstrate a knowledge of the seasoning and drying of lumber. | | | MDF |
| <ul style="list-style-type: none"> Objective 0704 Distinguish between softwoods and hardwoods. | | | Hardboard |
| <ul style="list-style-type: none"> Objective 0705 Identify the difference between solid wood and manmade goods and describe the use of each. | | | Veneer |
| <ul style="list-style-type: none"> Objective 0706 Identify wood species and list the species most suited for furniture construction. <ol style="list-style-type: none"> Alder Cherry | | | Cambium |
| | | | Pith |
| | | | Annual Rings |
| | | | Early Wood |
| | | | Late Wood |

- c. Oak
- d. Walnut
- e. Maple
- f. Poplar
- g. Pine
- h. Mahogany
- i. Cedar

- Objective 0707
Identify the common grades of lumber and sheet goods.
 - a. FAS
 - b. Select
 - c. #1COM
- Objective 0708
Properly store material.

Heartwood
Sapwood
Dimensioned Lumber
RWL
S4S
Crook
Bow
Twist
Kiln dried
Air Dried
Moisture content
Defects
checks/checking
Expansion

Measurement and Layout  (Week 7, 2 Weeks) 

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 04
Students will be able to understand and demonstrate the safe use of hand tools.

- Standard and metric measuring systems.
- measuring and layout tools: sliding t-bevel, tri-square, combination square, measuring tape, scratch awl, trammel points, compass
- Measure to an accuracy of 1/16"
- Properly use layout tools to layout common joints,cuts,and machine setup
- Objective 0401
Describe the purpose and demonstrate the proper use of the following measuring and layout tools:
 - a. Measuring tape
 - b. Scratch awl
 - c. Combination square
 - d. Try square
 - e. Framing square

Construction
Standard measuring system
Metric measuring system
Feet '
Inches "
Fractions
Numerator
Denominator

- f. Sliding T-bevel
- g. Tammel points
- h. Compass

Standard 08
 Students will be able to understand and demonstrate basic math and measuring concepts.

- Objective 0801
Add two- and three-digit numbers.
- Objective 0802
Subtract two-, three-, and four-digit numbers.
- Objective 0803
Solve two-digit divisor numbers.
- Objective 0804
Multiply a two-digit factor.
- Objective 0805
Add, subtract, multiply, and divide fractions and mixed numbers.
- Objective 0806
Convert fractions to decimals.
- Objective 0807
Reduce fractions.
- Objective 0808
Add, subtract, multiply, and divide decimal numbers.
- Objective 0809
Calculate percentages and basic ratios.
- Objective 0810
Add and subtract linear measurement in feet and inches.
- Objective 0811
Use a ruler or measuring tape to measure within a sixteenth ($1/16$) of an inch.
- Objective 0812
Calculate board feet and square feet.
- Objective 0813
Demonstrate the optimization of materials.

Measuring tape

Ruler

Centimeters

Millimeters

Square

Dividers

Awl

Sliding T-Bevel

Dimension

Measurement

Accuracy

Compass

Trammel points

**Gluing, Clamping
and Fastening**



(Week 10, 2 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 09

Students will be able to understand and demonstrate the use of fasteners and adhesives.

- Objective 0901
Identify the various woodworking fasteners and the application of each.
 - a. Nails
 - b. Screws
 - c. Staples
 - d. Pins
 - e. Bolts
 - Objective 0902
Identify the different adhesives and preferred use of each.
 - a. Yellow glue
 - b. Polyurethane glue
 - c. Cyanoacrylate
 - d. Epoxy
 - Objective 0903
Identify the different types of clamps.
 - a. Bar
 - b. "C"
 - c. Spring
 - d. Band
 - e. Handscrew
 - Strengths and weaknesses of joinery and gluing.
 - how to choose the appropriate clamp and use it correctly
 - how does the wood grain affect the strength of gluing
 - Different types of glue and application
 - Different types of clamps
 - clamp application
 - Different types of fasteners and application
 - Student will be able to join wood using glue, clamps and or fasteners to achieve a quality joint.
 - use appropriate glue
 - use appropriate clamps properly
- Glue Scraper
- Epoxy
- Yellow Wood Glue (poly vinyl)
- Cyanoacrylate glue
- Polyurethane glue
- Catalyst
- Bar clamp
- Spring clamp
- band clamp
- C-clamp
- Hand-screw Clamp
- Nails
- Screws
- Bolts
- Dowels
- Edge grain
- Face grain
- End grain
- Butt joint
- Glue joint
- pressure

Joinery

2 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 10
Students will be able to understand and demonstrate the use of joinery.

- Objective 1001
Identify the basic wood joints used in furniture making.
 - a. Butt
 - b. Miter
 - c. Rabbet
 - d. Dado
 - e. Spline
 - f. Mortise and tenon
 - g. Dovetail
 - h. Groove (plough)
 - i. Lap
 - j. Pocket
 - k. Dowel
 - l. Biscuit
 - m. Blind dado
- Objective 1002
Construct the basic wood joints used in cabinetmaking/millwork.

Different joint types as listed above

The strengths and weaknesses of each joint listed above

How to construct each of the joints listed above

- Identify different types of joints (butt joint, miter joint, rabbet joint, dado joint)
- Construct a basic project using the joints

drying time

cured

Biscuit

alternate

Growth rings

Level 1

Joint

Level 2

Butt joint

Miter joint

Joinery

Spline

Dovetail

Lap

Dowel

Miter saw

Miter box

Level 3

Rabbet joint

Dado joint

Mortise and tenon

Groove (plough)

Finishing

Processes

20, 4 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 12
Students will be able to understand and demonstrate finishing techniques.

- Objective 1201
Understand and properly apply the basic rules of sanding.
- Objective 1202
Select and correctly use each specified grit size.
- Objective 1203
Properly prepare a surface for finishing.
- Objective 1204
Properly apply stain, penetrating oil, and/or a clear finish.
- Objective 1205
Properly spray a clear coat.

- What are the three main classifications of finish?
- What type of finish is best for different applications?

What is the preparation for each finish?

What are the general techniques for applying each of the different types of finish?

Two main categories of stain.

As a result of this unit the students should:

-Prepare - different steps of sanding

-Stain - one of two methods

-Finish - one of three finishes

Demonstrate an understanding of finishing techniques by either completing a project or in writing explain what finish would be best for a given project. (Ex. piano, end table, out door chair, kitchen cabinet.

Pocket

Biscuit

Mortising machine

Blind dado

Sanding

Evaporative

Reactive

Coalescing

Wax

Shellac

Lacquer

Finishing Oils

Waterbase

Epoxies

Polyurethane

Stain

Conversion varnish

Finishes and Procedures

Tier 2

Hardware

24, 2 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 08
Students will be able to understand and demonstrate basic math and measuring concepts.

- Objective 0805
Add, subtract, multiply, and

- Identify different types of hinges: offset, inset, butt, concealed (european), continuous
- Identify Different types of drawer guides: metal, wood, full extension, bottom-mount, side-mount
- Identify other various hardware: knobs, pulls, shelf pins and supports

- Choose the correct hinges and hardware
- Mount hardware
- Identify different hinges and door guides
- Use math to center the hardware on drawers and doors

- knobs
- pull
- hinges
- overlay
- European
- butt hinge
- inset hinge
- drawer guides

- divide fractions and mixed numbers.
- Objective 0810
Add and subtract linear measurement in feet and inches.
- Objective 0811
Use a ruler or measuring tape to measure within a sixteenth (1/16) of an inch.

- Addition, subtraction and division of mixed numbers

- flush
- concealed hinge
- continuous hinge

Standard 11
Students will be able to understand and demonstrate the use of cabinet components and hardware.

- Objective 1105
Identify and properly install common cabinet/furniture hardware such as:
 - Hinges - offset, overlay, European, butt, lip
 - Drawer guides
 - Pulls and knobs
 - Shelf supports
- Objective 1109
Install lid or door and drawer.

Door & Drawer construction 
(Week 26, 1 Week) 

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing
Standard 10
Students will be able to understand and demonstrate the use of joinery.

- Objective 1001
Identify the basic wood joints used in furniture making.
 - Butt
 - Miter
 - Rabbet
 - Dado
 - Spline
 - Mortise and tenon
 - Dovetail
 - Groove (plough)
 - Lap
 - Pocket
 - Dowel

- door and drawer joinery
- the parts of a door and drawer
- how to mill, glue, and assemble the parts of a door and drawer
- different types of doors and drawer fronts

- construct a door and drawer using proper joinery and milling techniques
- operate tools and equipment properly and safely

- plough
- groove
- dado
- offset
- tambour door
- flush door
- overlay door
- lip door
- reveal
- dovetail
- drawer runner
- drawer guide/glide
- stile
- rail
- panel
- mullion
- expansion
- frame and panel construction

- l. Biscuit
- m. Blind dado
- Objective 1002
Construct the basic wood joints used in cabinetmaking/millwork.

Standard 11

Students will be able to understand and demonstrate the use of cabinet components and hardware.

- Objective 1101
Identify the cabinet components of a face frame and cabinet box.
 - a. Stile
 - b. Rail
 - c. Mullion
 - d. Side
 - e. Skin
 - f. Base
 - g. Shelf
 - h. Web frame
 - i. Kicker
 - j. Drawer runner/glide
 - k. Toe kick
 - l. Back
- Objective 1103
Identify the door options in cabinetmaking:
 - a. Flush
 - b. Overlay
 - c. Lip
 - d. Tambour
- Objective 1104
Identify the components of a drawer.
- Objective 1106
Assemble a project with the proper adhesive and fasteners.
- Objective 1107
Use frame and panel construction in a project.
- Objective 1108
Construct a drawer.
- Objective 1109
Install lid or door and drawer.

Frame and Panel

Construction

(Week 27, 2 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Furniture Design and Manufacturing Standard 11

Students will be able to understand and demonstrate the use of cabinet components and hardware.

- Objective 1110
Identify basic construction methods.
 - a. Frame and panel
 - b. Casework construction
 - c. Post and rail

- frame and panel parts
- frame and panel joinery
- how to calculate the part dimensions for a frame and panel component.

- construct a door or cabinet component using frame and panel construction methods
- calculate the size of the parts for a frame and panel cabinet component

Tier 1

- expansion
- contraction
- square (verb)

Tier 2

- stile
- rail
- panel

Tier 3

- mullion
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