

KCKPS CTE CURRICULUM PACING GUIDE

FURNITURE AND CARPENTRY FABRICATION

KSDE Course Code	38007	KSDE Course Name	Furniture and Carpentry Fabrication
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CIP Code	46.0000	KSDE Pathway	Construction & Design
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Infinite Campus Course Numbers	13121045S 13121045Y
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Prerequisites	Woodworking Fundamentals
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Courses That Follow	Carpentry 1 or 2, Comprehensive Workplace Experience
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Buildings Offered	Wyandotte High School
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KCKPS Course Description

Furniture & Cabinetry Fabrication is an advanced level application course designed to provide students with experience in constructing cases, cabinets, counters, furniture and interior woodwork

Kansas Department of Education Course Competencies

[Link to Career Cluster on KSDE](#)

This course utilizes the approved competencies provided on the KSDE website. The competencies identified by KSDE provide the foundation for what students should know and/or be able to do by the end of the course.

Common District Summative Assessment

Woodworking Safety Tests and Semester Final - <https://www.quia.com/servlets/quia.web.QuiaWebManager?tagModuleType=106&rand=2907491>

PACING GUIDE AT A GLANCE

Unit	Unit Name	Length
1	The Woodworking Industry/Career Search	2 - 90 minute blocks
2	Planning for the Project	3 - 90 minute blocks
3	Safety Practices for tools and machinery	6 - 90 minute blocks
4	Project Construction and Fastening Techniques	65 - 90 minute blocks
5	Project Finishing	3 - 90 minute blocks
6	Special Topics	2 - 90 minute blocks

KSDE COURSE COMPETENCIES

Competency	Unit Taught
1. The Woodworking Industry/Career Search	
1.1 Communicate clearly, effectively, and with reason (speaking, listening, reading, writing – including giving & following instructions)	1
1.2 Act as a responsible and contributing citizen and employee (including working knowledge of workplace issues such as sexual harassment, stress & substance abuse)	1
1.3 Plan education and career path aligned to personal goals	1
2. Planning for the Project	
2.1 Add, subtract, multiply, and divide whole numbers, fractions, decimals and percentages.	2

2.2 Use a standard ruler, a metric ruler, and a measuring tape to measure.	2
2.3. Develop a multi-view drawing.	2
2.4 Demonstrate the ability to dimension a drawing.	2
2.5 Demonstrate visualization skills in orthographic projection.	2
2.6 Read, interpret, and use technical drawings, documents, and specifications to plan a project	2
2.7 Select quality wood, based upon; strength, appearance and durability requirements of the project designed.	2
2.8 Create a bill of material, and a plan of procedure for a project being planned for construction.	2
2.9 Estimate costs of a project.	2
3. Safety Practices for tools and machinery	
3.1 Apply safe practices while using tools and equipment.	2,3
3.2 Demonstrate the safe use of common power tools.	2,3
3.3 Properly use, maintain & care for hand tools common to the woodworking industry.	2,3
3.4 Properly set up, maintain and care for machines and power tools as they are used for constructing projects.	2,3
3.5 Explain the purpose of OSHA and how it promotes safety on the job.	2,3
4. Project Construction and Fastening Techniques	
4.1 Apply traditional history with the principles and elements of design to create project plans, which fulfills the criteria for the project to be constructed.	2,4
4.2 Utilize the common styles and methods to construct and install cabinet and/or furniture sub-assemblies	2,3,4
4.3 Select and apply “best method” joint construction and fitting for the project being constructed.	2,3,4
4.4 Select and perform “best-method” assembly techniques for cabinet or furniture construction.	2,3,4
5. Project Finishing	

5.1 Select and perform the appropriate finish for the cabinet or furniture project being constructed	4,5
5.2 Properly set up, maintain and care for the tools and equipment used for finishing cabinets and furniture.	2,3,4,5
6. Special Topics	
6.1 Design and engineer a product using CAD and/or CAM software systems.	2,3,4,6
6.2 Understand and demonstrate operations of advanced technology systems.	2,3,4,5,6
6.3 Demonstrate effective techniques to manage and organize production flow.	2,3,4,5,6

UNIT 1 The Woodworking Industry/Career Search

Unit 1 Overview

In this unit students will learn about the woodworking industry. Students will study six soft skills employers are looking for in a valued employee. Students will complete a career search to match their values and educational goals.

Unit 1 Competencies

1.1 Communicate clearly, effectively, and with reason (speaking, listening, reading, writing – including giving & following instructions)		
1.2 Act as a responsible and contributing citizen and employee (including working knowledge of workplace issues such as sexual harassment, stress & substance abuse)		
1.3 Plan education and career path aligned to personal goals		

Unit 1 Resources

Primary Resources

Supplemental Resources

- Electronic Woodworking Text - <https://nglsync.cengage.com/portal/Account/LogOn?ReturnUrl=%2fportal>
- Occupational Outlook Handbook Website - <https://www.bls.gov/ooh/>
- Kansas High School Teachers Collaboration Google Drive - <https://drive.google.com/drive/u/1/folders/1DA1Dq1JE-63TORruwAbuldycFMYk9-6>

- OOH Handout - https://docs.google.com/document/d/1E88DNjxGAINhd0ILZN_tyU1y9eOMqiy-nlToZMpi3Fk/edit
- Naviance Software
- Woodworking - tools, materials, processes, by William Spence/L. Duane Griffiths

Unit 1 Vocabulary

- apprentice
- Bureau of Labor Statistics
- internship
- interview
- journeyman
- labor unions
- Occupational Outlook Handbook
- Résumé
- Soft Skills
 - Communication Skills
 - Professional Life Skills
 - Customer Centered Culture
 - Telephone Skills
 - Management Skills

- Team Skills

UNIT 2 Planning for the Project

Unit 2 Overview

Students will be tested for measurement accuracy. This is necessary for machinery set up and project accuracy. Project planning will include drafting and design principles, orthographic projection, working drawings, bill of materials, and project plan of procedure. Students will understand the creative process of taking a project idea and developing the supporting documents necessary to build the project.

Unit 2 Competencies

2.2 Use a standard ruler, a metric ruler, and a measuring tape to measure.		
2.3. Develop a multi-view drawing.		
2.4 Demonstrate the ability to dimension a drawing.		
2.5 Demonstrate visualization skills in orthographic projection.		
2.6 Read, interpret, and use technical drawings, documents, and specifications to plan a project		
2.7 Select quality wood, based upon; strength, appearance and durability requirements of the project designed.		
2.8 Create a bill of material, and a plan of procedure for a project being planned for construction.		
2.9 Estimate costs of a project.		

Unit 2 Resources

Primary Resources

- Electronic Textbook - <https://nglsync.cengage.com/portal/Account/LogOn?ReturnUrl=%2fportal>

Supplemental Resources

- Measurement Exercise
- Misc. Project Plans

- OnShape CAD Software
- My Youtube Channel - <https://studio.youtube.com/channel/UCsosYugpqgk-tcEnWuk7Sfg/playlists>
- Kansas High School Teachers Collaboration Google Drive - <https://drive.google.com/drive/u/1/folders/1DA1Dq1JE-63TORruwAbuldycFMYk9-6>

- Advanced Industrial Math Handouts
 - Linear Feet
 - Square Feet
 - Board Feet
- Advanced Project Bill of Materials
- Student Project Bill of Materials
- Advanced Species ID Quiz
- Woodworking - tools, materials, processes, by William Spence/L. Duane Griffiths

Unit 2 Vocabulary

Bill of Materials
 Plan of Procedure
 Working Drawings
 Orthographic Projection
 Board Feet
 Linear Feet
 Square Feet
 Nominal Size
 Random Widths & Lengths
 Reducing Fractions
 Elements of Design
 Design Principles
 Dimensioning
 Alphabet of Lines

UNIT 3 Safety Practices for tools and machinery

Unit 3 Overview

This unit will be a study of general and specific machinery safety rules and procedures. Students will receive safety information in a variety of ways, including but not limited to, (textbook, handouts, youtube videos, lecture, and demonstration). Students will be tested using Quia safety tests. They must pass each by 100%. Students are given unlimited tries to obtain the 100% score. After passing the test, the students will receive a safety demonstration on each test. Students will then complete a performance test for each machine.

Unit 3 Competencies

3.1 Apply safe practices while using tools and equipment.		
3.2 Demonstrate the safe use of common power tools.		
3.3 Properly use, maintain & care for hand tools common to the woodworking industry.		
3.4 Properly set up, maintain and care for machines and power tools as they are used for constructing projects.		

Unit 3 Resources

Primary Resources

- Electronic Textbook - <https://nglsync.cengage.com/portal/Account/LogOn?ReturnUrl=%2fportal>
- My Youtube Channel - <https://studio.youtube.com/channel/UCsosYugpqgk-tcEnWuk7Sfg/playlists>
- Quia - www.quia.com/web
- Kansas High School Teachers Collaboration Google Drive - <https://drive.google.com/drive/u/1/folders/1DA1Dq1JE-63TORruwAbuldycFMYk9-6>

Supplemental Resources

- Quia Safety Tests - Hard Copies
- Misc. Websites
- Woodworking - tools, materials, processes, by William Spence/L. Duane Griffiths

Unit 3 Vocabulary

Kickback
Safety Zone
Eye Protection
Ear Protection
OSHA
Safety Demonstration
Performance Testing
Guard
Fence
Table
Blade
Cutter Head
Cross Cutting
Ripping
Grain Direction

Special Setups
 Safety Hazards
 Radial Arm Saw
 Joiner
 Table Saw
 Planer
 Belt Sander
 Drill Press
 Oscillating Spindle Sander
 Router
 Saw Stop
 Router Table
 Edge Sander
 In Feed
 Out Feed
 Miter Saw

Unit 4 Project Construction and Fastening Techniques

Unit 4 Overview

This unit students learn to put their learned project information to use. They will build each required project using precise measurement, material selection, machinery operation, gluing techniques, joinery, and fasteners to build the project to design specifications.

Unit 4 Competencies

4.1 Apply traditional history with the principles and elements of design to create project plans, which fulfills the criteria for the project to be constructed.		
4.2 Utilize the common styles and methods to construct and install cabinet and/or furniture sub-assemblies		
4.3 Select and apply “best method” joint construction and fitting for the project being constructed.		
4.4 Select and perform “best-method” assembly techniques for cabinet or furniture construction.		

Unit 4 Resources

Primary Resources

Supplemental Resources

- Electronic Textbook - <https://nglsync.cengage.com/portal/Account/LogOn?ReturnUrl=%2fportal>
- My Youtube Channel - <https://studio.youtube.com/channel/UCsosYugpqgk-tcEnWuk7Sfg/playlists>
- Kansas High School Teachers Collaboration Google Drive - <https://drive.google.com/drive/u/1/folders/1DA1Dq1JE-63TORruwAbuldycFMYk9-6>

- Night Stand Project Documentation
 - Drawing
 - Plan of Procedure
- Woodworking - tools, materials, processes, by William Spence/L. Duane Griffiths
- Independent Study Project

Unit 4 Vocabulary

Straight Edge
 Four Step Squaring Process
 Cross Cut Sled
 Kreg Screws
 Wood Screws
 Nails
 Brads
 Hanger Bolt
 Washer
 Counter Sink
 Pilot Hole
 Shank Hole
 Staples
 Glue Joint
 Wood Joints
 Wood Glue
 Waterproof Glue
 Super Glue
 Bar Clamp
 Quick Clamp
 C-Clamp
 Spring Clamp
 Table Vice
 Rails
 Styles
 Raised Panel
 Dowel Pins

Biscuit
 Chuck
 Relief Cut
 Joinery
 I/O Jointing Technique
 Torque
 Cutter Head Rotation
 Wood Species
 Finger Joint Jig

UNIT 5 Project Finishing

Unit 5 Overview

Students will learn about different finishes and the multiple steps used for each finish type, to achieve a professional finish for each required project.

Unit 5 Competencies

5.1 Select and perform the appropriate finish for the cabinet or furniture project being constructed		
5.2 Properly set up, maintain and care for the tools and equipment used for finishing cabinets and furniture.		

Unit 5 Resources

Primary Resources

- Electronic Textbook - <https://nglsync.cengage.com/portal/Account/LogOn?ReturnUrl=%2fportal>
- My Youtube Channel - <https://studio.youtube.com/channel/UCsosYugpqgk-tcEnWuk7Sfg/playlists>
- Kansas High School Teachers Collaboration Google Drive - <https://drive.google.com/drive/u/1/folders/1DA1Dq1JE-63TORruwAbuldycFMYk9-6>

Supplemental Resources

- Youtube Videos
- Woodworking - tools, materials, processes, by William Spence/L. Duane Griffiths

Unit 5 Vocabulary

Mineral Oil
 Tung Oil
 Lacquer
 Sanding Sealer
 Lacquer Thinner
 Steel Wool
 Sanding Grits
 Abrasives
 Wood Filler
 Stain
 Grain direction
 Defects
 Spray Gun

UNIT 6 Special Topics

Unit 6 Overview

This unit is design for student that complete the required projects and have time to pursue a project of their own design or interest. Examples of special topics include Computer Aided Drawing & Design, Computer Numeric Control Lasering/routing, Lathe work, Epoxy Resin exploration, Mass Production, etc. Students will be required to complete the project documentation before production starts. Including, but not limited to working drawings, a plan of procedure, and a bill of materials.

Unit 6 Competencies

5.1 Select and perform the appropriate finish for the cabinet or furniture project being constructed		
5.2 Properly set up, maintain and care for the tools and equipment used for finishing cabinets and furniture.		

Unit 6 Resources

Primary Resources

- Electronic Textbook - <https://nglsync.cengage.com/portal/Account/LogOn?ReturnUrl=%2fportal>
- My Youtube Channel -

Supplemental Resources

- You Tube Videos
- Getting Started with OnShape, second edition
- Parametric Modeling with Autodesk Fusion 360

- <https://studio.youtube.com/channel/UCsosYugpggk-tcEnWuk7Sfg/playlists>
Kansas High School Teachers Collaboration Google Drive -
<https://drive.google.com/drive/u/1/folders/1DAt1Dq1JE-63TORruwAbuldycFMYk9-6>

- Woodworking - tools, materials, processes, by William Spence/L. Duane Griffiths

Unit 6 Vocabulary

CNC
CAD
Inventor
OnShape
Fusion 360
Aspire
Mass Producton
Jig
Fixture
Special Set Up
Special Problems

