

DESE Model Curriculum

GRADE LEVEL/COURSE TITLE: Carpentry, Introductory Craft Skills –
Module 27102-06 Building Materials, Fasteners, and Adhesives

Course Code:

COURSE INTRODUCTION:

17003 Carpentry

Carpentry courses provide information related to the building of wooden structures, enabling students to gain an understanding of wood grades and construction methods and to learn skills such as laying sills and joists; erecting sills and rafters; applying sheathing, siding, and shingles; setting door jambs; and hanging doors. Carpentry courses may teach skills for rough construction, finish work, or both. Students learn to read blueprints, draft, use tools and machines properly and safely, erect buildings from construction lumber, perform finish work inside of buildings, and do limited cabinet work. Carpentry courses may also include career exploration, good work habits, and employability skills.

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Course Code:

UNIT (#) TITLE: Carpentry, Introductory Craft Skills (27102-06) – Building Materials, Fasteners, and Adhesives [This module introduces the carpentry trainee to wood building materials, fasteners, and adhesives.]			SUGGESTED UNIT TIMELINE: CLASS PERIOD (min.):			
ESSENTIAL QUESTIONS: 1. How are different materials used for different purposes? 2. How are different materials handled safely?						
ESSENTIAL MEASURABLE LEARNING OBJECTIVES	CCSS LEARNING GOALS (Anchor Standards/Clusters)	CROSSWALK TO STANDARDS				
		GLEs/CLEs	PS	CCSS	OTHER	DOK
1. Identify various types of building materials and their uses.				RST 11-12.3, L 11-12.6, S-ID 9, S-IC 6	27102-06	Level 1
2. State the uses of various types of hardwoods and softwoods.				SL 11-12.5, RST 11-12.3, S-ID 9, S-IC 6	27102-06	Level 1
3. Identify the different grades and markings of wood building materials.				RST 11-12.2	27102-06	Level 1
4. Identify the safety precautions associated with building materials.				RST 11-12.2	27102-06	Level 1
5. Describe the proper method of storing and handling building materials.				RST 11-12.3	27102-06	Level 1
6. State the uses of various types of engineered lumber.				RST 11-12.3	27102-06	Level 1
7. Calculate the quantities of lumber and wood products using industry-standard methods.				WHST 11-12.6, N-Q 1, N-Q 2, N-Q 3, N-VM 7, A-REI 1, F-IF 4	27102-06	Level 1
8. Describe the fasteners, anchors, and adhesives used in construction work and explain their uses.				RST 11-12.3, L 11-12.6	27102-06	Level 1

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ASSESSMENT DESCRIPTIONS*: (Write a brief overview here. Identify Formative/Summative. Actual assessments will be accessed by a link to PDF file or Word doc.)

***Attach Unit Summative Assessment, including Scoring Guides/Scoring Keys/Alignment Codes and DOK Levels for all items. Label each assessment according to the unit descriptions above (i.e., Grade Level/Course Title/Course Code, Unit #).**

Obj. # 1-8	INSTRUCTIONAL STRATEGIES (research-based): (Teacher Methods) <input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Experiential <input type="checkbox"/> Independent Study <input type="checkbox"/> Interactive Instruction
Obj. # 1-8	INSTRUCTIONAL ACTIVITIES: (What Students Do) 1. 2. 3.

UNIT RESOURCES: (include Internet addresses for linking)

(MCCE Resource) TE DVD ROM 13

The Future of Home Construction: New Techniques, New Technologies

Meridian Education Corporation

MONMOUTH JCT., NJ, MERIDIAN EDUCATION CORPORATION, 2001.

VIDEO This program travels to the National Association of Home Builders' Research Center to study four townhouses constructed using some of today's most innovative building materials and energy-saving technologies. Filmed at each stage of construction, these houses showcase foundations made of precast, pre-insulated, high-strength reinforced concrete or insulating concrete forms; walls made of ICFs, Hebel blocks, or steel framing; exterior finishes that incorporate thermally elastic stucco; and standing seam steel roofs. Photovoltaic roofing panels, a natural gas heat pump that uses a non-CFC refrigerant, an electronic home energy management system, gas fireplaces, doors made from sawmill residue and wood scraps, a geothermal heat pump, a pellet stove, and a combined space heating and water heating system are also featured. 11 minutes.

(MCCE Resource) AG DVD ROM 102

Working With Nails and Screws

Shopware

HAMILTON, NJ, FILMS MEDIA GROUP, 2004.

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Course Code:

DVD ROM

This program demonstrates how to drive and remove nails and explains how to work with wood screws--from pre-drilling, to countersinking and plugging, to increasing their holding power. Includes background on the careful and appropriate use of the hand and power tools involved. 17 minutes.

(MCCE Resource) TE DVD ROM 10

Deconstruction: The Science of Building a House-Foundation to Roof

Discovery Channel University

LAWRENCEVILLE, NJ, SHOPWARE, 2004.

DVD ROM

This video highlights scientific aspects of concrete, steel, wood, and nails, and the forces that impact them. Experiments done on the building site and at materials testing labs investigate the strengths of concrete, rebar, and engineered lumber; the chemical properties of Portland cement and galvanized nails; and the effects of dead load and live load, torque and shear induced by wind and earthquakes, and Bernoulli's Principle as it relates to the effects of tornadoes on roofs. Microscope and infrared imaging plus animations give extra angles of insight. So do field trips to a concrete batch plant, a tree farm to study silviculture, and a saw mill to see how computerized cutting and sorting are done. 50 minutes.

(MCCE Resource) T&I DVD ROM 10

Building Construction: Fundamentals

CEV Multimedia

LUBBOCK, TX, CEV MULTIMEDIA, 2003.

DVD ROM This presentation includes how to layout plates, make corners and tees, construct wall units, partitions, window and door units and headers. Step-by-step instructions are provided for cutting ceiling joists and rafters with demonstrations on proper techniques for some of the more exacting procedures ("lipping" a joist, cutting a "birdsmouth," marking a ridgeboard and assembling the rafters) necessary for beginning builders. During completion of the 16' X 10' portable building, you will learn proper techniques for laying a roof with discussions and demonstrations of the following roof construction steps: laying the roof deck, attaching metal flashing along the edges, rolling out and laying the roofing felt, marking the felt to prepare it for the asbestos shingles, and cutting a nailing composition shingles in an effective method and pattern. 160 min, 4 sections, 1 printable resource and 17 Web resources.