

CARPENTRY I

COURSE DESCRIPTION

Carpentry I is a course that will introduce students to basic skills and knowledge related to residential and commercial carpentry. Topics covered include wood, metal, and concrete building materials; fasteners; hand and power tools; fabrication based on construction plans; and framing of platform and post-and-beam structures, in both wood and metal. This course gives students an introduction to the skill and knowledge base typically required for apprentice carpenters.

It is strongly recommended that administration and guidance follow the scope and sequence and course recommendations as listed.

Recommended:	Construction Core Algebra I
Recommended Credits:	1
Recommended Grade Level(s):	10 th 11 th 12 th
Number of Competencies in Course:	103

Carpentry I

STANDARDS

- 1.0** Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community and workplace.
- 2.0** Students will assume responsibility for the safety of themselves, their coworkers, and bystanders.
- 3.0** Orientation to the trade: Students will describe the history of the carpentry trade; as well as aptitude, behaviors, and skills needed to be a successful carpenter.
- 4.0** Students will identify and understand the uses of building materials, fasteners, and adhesives.
- 5.0** Students will identify and understand the use and safe operation of hand and power tools.
- 6.0** Students will read and interpret plans, elevation, schedules, sections, and details contained in basic construction drawings.
- 7.0** Floor systems : Students will be able to identify framing systems; read and interpret drawings and specifications, framing, types of fasteners, types of floor joists; and calculate proper joist sizes, bridging, and flooring materials.
- 8.0** Wall and ceiling framing: Identify components of wall and ceiling layout, procedures, wood frames, wall, plates, posts, door and window openings, sheathing, building framing, framing masonry walls, ceiling joists, materials estimating.
- 9.0** Roof framing: Identify and understand roof framing methods and terms associated with roof framing, use and indentify tools related to framing,, estimate materials related to faming and sheathing a roof.
- 10.0** Introduction to concrete, reinforcing materials, and forms: Identify properties, composition, volume estimates, types of reinforcement and their uses, types of footings, forms, and safety associated with handling and using concrete.
- 11.0** Windows and exterior doors: Identify types of doors and windows, state proper window and door installation. Identify types of locksets and their installation.
- 12.0** Basic stair layout: Identify types of stairs and stair parts, materials, interpret stair drawings calculate rise, number of rises, treads.

CARPENTRY I

STANDARD 1.0

Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.

LEARNING EXPECTATIONS

The student will:

- 1.1** Cultivate leadership skills.
- 1.2** Participate in SkillsUSA as an integral part of instruction.
- 1.3** Assess situations within the school, community, and workplace and apply values to develop and select solutions.
- 1.4** Demonstrate the ability to work cooperatively with others.
- 1.5** Exhibit integrity and pride in the practice and quality of work.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 1.1A** Takes initiative in meetings to actively influence the results of deliberations.
- 1.1B** Uses critical-thinking and consensus building skills in group deliberations.
- 1.1C** Exhibits integrity and pride in workmanship.
- 1.2A** Applies high ethical standards to personal, community, and professional situations.
- 1.2B** Participates and conducts meetings according to accepted rules of parliamentary procedure.
- 1.3A** Analyzes simulated workplace situations and uses problem-solving and critical-thinking techniques to suggest solutions to the problem.
- 1.3B** Analyzes socio-economic conflicts associated with the construction industry and applies values to evaluate possible ways to mitigate the conflicts.
- 1.4A** Participates in a committee.
- 1.4B** Contributes to a group project.
- 1.5** Exhibits integrity and pride in the practice and quality of work.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Create a leadership inventory and use it to conduct a personal assessment.
- Participate in various SkillsUSA or similar programs and/or competitive events.
- Evaluate a civic project within the school, community, and/or workplace and evaluate the expected long term effects of the project.
- Prepare a meeting agenda for a school or community meeting.
- Attend the meeting of a professional organization.
- Participate in a design team to complete an assigned project.

CARPENTRY I

INTEGRATION LINKAGES

SkillsUSA, *Professional Development Program*, SkillsUSA, Communications and Writing Skills, Teambuilding Skills, Research, Language Arts, Sociology, Psychology, Math, English , Social Studies, Problem Solving, Interpersonal Skills, Employability Skills, Critical-Thinking Skills, SCANS (Secretary's Commission on Achieving Necessary Skills), MAVCC, Chamber of Commerce, Colleges, Universities, Technology Centers

CARPENTRY I

STANDARD 2.0

Students will assume responsibility for the safety of themselves, their coworkers, and bystanders.

LEARNING EXPECTATIONS

The student will:

- 2.1** Demonstrate a positive attitude regarding safety practices and issues.
- 2.2** Use and inspect personal protective equipment.
- 2.3** Inspect, maintain, and employ safe operating procedures with tools and equipment, such as hand and power tools, ladders, scaffolding, and lifting equipment.
- 2.4** Demonstrate continuous awareness of potential hazards to self and others.
- 2.5** Comprehend personal responsibilities under HazCom (Hazard Communication) regulations and emergency response procedures.
- 2.6** Comprehend personal responsibilities, regulations, and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- 2.7** Comprehend personal responsibilities, regulations, and Occupational Safety and Health Administration (OSHA) policies regarding reporting of accidents and observed hazards.
- 2.8** Demonstrate appropriate construction-related safety procedures.
- 2.9** Pass with 100 % accuracy a written examination relating to safety issues
- 2.10** Pass with 100% accuracy a performance examination relating to safety.
- 2.11** Maintain a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 2.1A** Is attentive during safety discussions.
- 2.1B** Actively seeks information about safe procedures.
- 2.1C** Responds positively to instruction, advice, and correction regarding safety issues.
- 2.1D** Does not deliberately create or increase hazards, such as by horseplay, practical jokes, or creating distractions.
- 2.1E** Reports to school or work physically ready to perform to professional standards, such as rested, or not impaired by medications, drugs, alcohol, and so forth.
- 2.2** Selects, inspects, and uses the correct personal protective equipment for the assigned task.
- 2.3A** Inspects power tools for intact guards, shields, insulation, and other protective devices.
- 2.3B** Inspects extension cords for the presence of a functional ground connection prior to use.
- 2.3C** Operates and maintains tools in accordance with manufacturer's instructions and as required by regulation and/or OSHA policy.
- 2.3D** Properly places and secures ladders and scaffolding prior to use.
- 2.4A** Is observant of personnel and activities in the vicinity of the work area.
- 2.4B** Warns nearby personnel prior to starting potentially hazardous actions.
- 2.5A** When asked to use a new hazardous material, retrieves material safety data sheet (MSDS) and identifies the health hazards associated with the new material.
- 2.5B** Reports hazards found on the job site to their supervisor.

- 2.6A** Erects shields, barriers, and signage to protect coworkers and bystanders prior to starting potentially hazardous tasks.
- 2.6B** Provides and activates adequate ventilation equipment as required by the task.
- 2.7A** Reports all injuries to self to the immediate supervisor.
- 2.7B** Reports observed unguarded hazards to the immediate supervisor.
- 2.7C** Complies with personal assignments regarding emergency procedures.
- 2.8A** Is observant of safety issues and concerns relevant to the construction industry.
- 2.8B** Complies with all safety guidelines and regulations set forth by industry and OSHA.
- 2.9** Passes with 100 % accuracy a written examination relating to safety issues.
- 2.10** Passes with 100% accuracy a performance examination relating to safety.
- 2.11** Maintains a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Practice drill simulating a hazardous solvent spill in which an emergency action plan is to be implemented.
- Instruct a visitor to obviously approach the vicinity of a student conducting a hazardous activity, and note the level of awareness demonstrated by the student.
- For a project requiring the use of ladders and/or scaffolding, note the proper placement and securing procedures followed by students.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development, American Red Cross

CARPENTRY I

STANDARD 3.0

Orientation to the trade : Students will describe the history of the carpentry trade, as well as, aptitude, behaviors, and skills necessary to be a successful carpenter.

LEARNING EXPECTATIONS

The student will:

- 3.1 Describe the history of the trade
- 3.2 Identify the aptitudes, behaviors, and skills needed to be a successful carpenter.
- 3.3 Identify the training opportunities within the carpentry trade.
- 3.4 Identify the career and entrepreneurial opportunities within the carpentry trade.
- 3.5 Identify the responsibilities of a person working in the construction industry.
- 3.6 State the personal characteristics of a professional.
- 3.7 Explain the importance of safety in the construction industry.

PERFORMANCE INDICATOR: EVIDENCE STANDARD IS MET

The student::

- 3.1A Takes written or oral examinations.
- 3.1B Gives a written or an oral report.
- 3.2A Gives a report describing the aptitudes, behaviors, and skills.
- 3.2B Works on projects using appropriate behaviors..
- 3.3A Discusses training opportunities after listening to guest speakers..
- 3.4A Passes written or oral examinations
- 3.5A Gives a written or an oral report.
- 3.6A Passes written or oral examination.

SAMPLE PERFORMANCE TASKS

This is a knowledge-based module. Projects are at the discretion of the instructor.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development, American Red Cross

CARPENTRY I

STANDARD 4.0

Students will identify and select typical building materials, fasteners and adhesives.

LEARNING EXPECTATIONS

The student will:

- 4.1 Identify various types of building materials and their uses.
- 4.2 State the uses of various types of hardwoods and soft woods.
- 4.3 Identify different grades and markings of wood building materials.
- 4.4 Identify the safety precautions associated with building materials.
- 4.5 Describe the proper method of storing and handling building materials.
- 4.6 State the uses of various types of engineered lumber.
- 4.7 Calculate the quantities of lumber and wood products using industry-standard methods.
- 4.8 Describe the fasteners, anchors, and adhesives used in construction work and explain their uses.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 4.1A Identifies various types of building material.
- 4.1B Identifies standard dimensions of structural dimensioned lumber.
- 4.1C Selects dimensioned lumber of an appropriate grade for a given application.
- 4.3A Identifies standard dimensions of manufactured and engineered wood products.
- 4.3B Identifies and interprets grade markings on manufactured and engineered wood products.
- 4.6C Selects manufactured and engineered wood products of an appropriate grade for a given application.
- 4.8A Identifies and selects by sight the sizes and types of commonly encountered nails.
- 4.8B Identifies and selects by sight the sizes and types of commonly encountered bolts and screws.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Take a field trip to a local lumberyard or building supply business where students will identify lumber and manufactured and engineered wood products by observation and grade markings.
- Take a field trip to a local lumber yard or building supply business where students, equipped with an inexpensive digital camera, will be asked to find and photograph material on a list, e.g., various dimensions, grades, cuts, and specifications.
- Given a specified list of nails, bolts, and screws, fill the list from a stock area.
- Given a floor-system construction project, select between reasonable alternatives of dimensioned lumber, manufactured and engineered wood products, and the required fasteners.

INTEGRATION LINGAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

STANDARD 5.0

Students will use appropriate hand and power tools to safely achieve industry accepted results.

LEARNING EXPECTATIONS

The student will:

- 5.1** Identify the hand tools commonly used by carpenters and describe their uses.
- 5.2** Use hand tools in a safe and appropriate manner.
- 5.3** State the general safety rules for operating all power tools, regardless of type.
- 5.4** State the general rules for properly maintaining all power tools, regardless of type.
- 5.5** Identify the portable power tools commonly used by carpenters and describe their uses.
- 5.6** Use portable power tools in a safe and appropriate manner.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 5.1A** Selects hand tools, based on the name or intended use..
- 5.2A** Demonstrates the safe operation of a hand tool for an assigned task.
- 5.3A** Demonstrates the safe operation of a portable power tool for an assigned task.
- 5.6A** Completes an assigned task requiring the use of tools to an acceptable industry standard following safe operating procedures.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Given the need to remove a quarter-inch from the edge of a wood door, select and retrieve the proper tool.
- In the process of fabricating a flooring or wall system, cut dimensioned lumber to a specified length with an accuracy of $\pm 1/16$ inch.
- In the process of fabricating a flooring or wall system, construct joints properly using specified fasteners to an acceptable industry standard.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

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STANDARD 6.0

Students will read and interpret plans, elevation, schedules, sections, and details contained in basic construction drawings.

LEARNING EXPECTATIONS

The student will:

- 6.1 Describe the types of drawings usually included in a set of plans and list the information found on each type.
- 6.2 Identify the different types of lines used on construction drawings.
- 6.3 Identify selected architectural symbols commonly used to represent materials on plans.
- 6.4 Identify selected electrical, mechanical, and plumbing symbols commonly used on plans.
- 6.5 Identify selected abbreviations commonly used on plans.
- 6.6 Read and interpret plans, elevations, schedules, sections, and details contained in basic construction drawings.
- 6.7 State the purpose of written specifications.
- 6.8 Identify and describe the parts of a specification.
- 6.9 Demonstrate how to perform a quality takeoff for materials.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 6.2A Interpret selected symbols and abbreviations used on drawings.
- 6.2B Read and interpret site/plot plans.
- 6.4A Read and interpret foundation, floor, and other plan view drawings.
- 6.6A Read and interpret elevation drawings.
- 6.6B Read and interpret section and detail drawings.
- 6.6C Read and interpret schedules.
- 6.8A Read and interpret written specifications.
- 6.9A Perform a quantity takeoff for materials.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Given a set of plans and specifications for a residential or a commercial structure, make a complete material take-off for windows and doors.
- Given a set of plans and specifications for a residential or a commercial structure, determine the location of structural elements that are explicit dimensioned.
- Given a set of plans and specifications for a residential or a commercial structure, make provisions for reasonable routing and support of ducts, electrical wiring, and plumbing.
- Construct batter boards and lay out a foundation plan based on a construction drawing, including grade stakes, locations of concrete forms, and plumbing and electrical stub-ups, e.g., using stakes, hammers, steel tapes, and builder's levels.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER)

CARPENTRY I

STANDARD 7.0

Floor systems: Students will be able to identify framing systems; read and interpret drawings and specifications, framing, types of fasteners, types of floor joists; and calculate proper joist sizes, bridging, and flooring materials.

LEARNING EXPECTATIONS

The student will:

- 7.1 Identify the different types of framing systems.
- 7.2 Read and interpret drawings and specifications to determine floor system requirements.
- 7.3 Identify floor and sill framing and support members.
- 7.4 Name the methods used to fasten sills to foundation.
- 7.5 Given specific floor load and span data, select the proper girder/beam size from a list of available girder/beams.
- 7.6 List and recognize different types of floor joists.
- 7.7 Given specific floor load and span data, select the proper joist size from a list of available joists.
- 7.8 List and recognize different types of bridging.
- 7.9 List and recognize types of flooring material.
- 7.10 Explain the purposes of subflooring and underlayment.
- 7.11 Match selected fasteners used in floor framing to their correct uses.
- 7.12 Estimate the amount of material needed to frame a floor assembly

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 7.1A Lays out and constructs a floor assembly.
- 7.6A Installs joists for a cantilever floor.
- 7.7A Given a specific floor load and span data, selects the proper girder/beam and joist size from a list of available girders/beams/joists.
- 7.8A Installs bridging.
- 7.10A Installs a subfloor using but joint plywood/OSB panels.
- 7.12A Estimates the amount of materials needed to frame a floor assembly.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Construct a 4-foot, scaled-down mockup of a floor system (e.g., 1 x 4 joists) and assess its stability before and after bracing is installed.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CARPENTRY I

STANDARD 8.0

Wall and ceiling framing: Identify components of wall and ceiling layout, procedures, wood frames, wall, plates, posts, door and window openings, sheathing, building framing, framing masonry walls, ceiling joists, materials estimating.

LEARNING EXPECTATIONS

The student will:

- 8.1** Identify the components of a wall and ceiling layout.
- 8.2** Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition Ts, bracing and fire stops.
- 8.3** Describe the correct procedure for assembling and erecting an exterior wall.
- 8.4** Identify the common materials and methods used for installing sheathing on walls.
- 8.5** Layout, assemble, erect, and brace exterior walls for a frame building.
- 8.6** Describe wall framing techniques used in masonry construction.
- 8.7** Explain the use of metal studs in wall framing.
- 8.8** Describe the correct procedure for laying out ceiling joists.
- 8.9** Cut and install ceiling joists on a wood frame wall.
- 8.10** Estimate the materials required to frame walls and ceilings.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 8.1A** Lays out, assembles, erects and braces exterior walls.
- 8.5A** Cuts and installs ceiling joists on a wood frame building.
- 8.10A** Estimates the materials required to frame walls and ceiling.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Given photos, videos, or site visits of actual construction sites, determine framing systems and executed in either steel or wood.
- Given photos, videos, or site visits of actual construction sites, determine ceiling framing systems are correct.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CARPENTRY I

STANDARD 9.0

Roof framing: Identify and comprehend roof framing methods and terms associated with roof framing, use and identify tools related to framing, estimate materials related to framing and sheathing a roof.

LEARNING EXPECTATIONS

The student will:

- 9.1 Comprehend the terms associated with roof framing.
- 9.2 Identify the roof framing members used in gable and hip roofs.
- 9.3 Identify the methods used to calculate the length of a rafter.
- 9.4 Identify the various types of trusses used in roof framing.
- 9.5 Use a rafter framing square, speed square, and a calculator in laying out a roof.
- 9.6 Identify the various types of sheathing used in roof construction.
- 9.7 Frame a gable roof with a vent opening.
- 9.8 Frame a roof opening.
- 9.9 Erect a gable roof using trusses.
- 9.10 Estimate the materials used in framing and sheathing a roof.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 9.5. Use a framing square and speed square in laying out a roof.
- 9.7 Frame and sheath a gable roof with an opening.
- 9.9 Erect a gable roof using trusses.
- 9.10 Estimate the materials used in framing and sheathing a roof.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Compare different roof framing methods.
- Take students to a construction site and have them point out the different roof framing methods.
- Using pictures, video, have students compare different roof framing methods.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CARPENTRY I

STANDARD 10.0

Introduction to concrete, reinforcing materials, and forms: Identify properties, composition, volume estimates, types of reinforcement, and their uses.

LEARNING EXPECTATIONS

The student will:

- 10.1 Identify the properties of cement.
- 10.2 Describe the composition of concrete
- 10.3 Perform volume estimates for concrete quantity requirements.
- 10.4 Identify types of concrete reinforcement materials and describe their use.
- 10.5 Identify various types of footings and explain their uses.
- 10.6 Identify the parts of various types of forms.
- 10.7 Explain the safety procedures associated with the construction and use of concrete forms.
- 10.8 Erect, plumb, and brace a simple concrete form with reinforcement.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 10.3 Performs volume estimates for concrete quality requirements.
- 10.8 Constructs a simple concrete form with reinforcement.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Take a field trip to observe large-scale form construction and reinforcement installation.
- Take a field trip to observe large-scale placing and finishing of concrete.
- Write a report or prepare a presentation describing placing and finishing of concrete observed during a field trip.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CARPENTRY I

STANDARD 11.0

Windows and exterior doors: Identify types of doors and windows, state proper window and door installation. Identify types of locksets and their installation.

LEARNING EXPECTATIONS

The student will:

- 11.1 Identify various types of fixed, sliding, and swinging windows.
- 11.2 Identify the parts of a window installation.
- 11.3 State the requirements for a proper window installation.
- 11.4 Install a pre-hung window.
- 11.5 Identify the common types of exterior doors and explain how they are constructed.
- 11.6 Identify the parts of a door installation.
- 11.7 Identify the types of thresholds used with exterior doors.
- 11.8 Install a pre-hung exterior door.
- 11.9 Identify the various types of locksets used on exterior doors and explain how they are installed.
- 11.10 Install a locksets.

PERFORMANCE INDICATORS: EVIDENCE STANDARD ARE MET

The student:

- 11.4 Installs a pre-hung window.
- 11.8 Installs a pre-hung exterior door.
- 11.10 Installs a lockset.

SAMPLE PERFORMANCE TASKS

- Take students on a field trip to a construction site to observe construction crews installing doors and windows.
- Take students to a home improvement center to select different types of doors and windows.
- Contact local door and window contactors and have them come demonstrate proper installation of their products.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CARPENTRY I

STANDARD 12.0

Basic stair layout: Identify types of stairs and stair parts, materials, interpret stair drawings, calculate rise, number of rises, and treads.

LEARNING EXPECTATIONS

The student will:

- 12.1 Identify the various types of stairs.

- 12.2 Identify the various parts of stairs.
- 12.3 Identify the materials used in the construction of stairs.
- 12.4 Interpret construction drawings of stairs.
- 12.5 Calculate the total rise, number and size of risers, and number and size of threads required for a stairway.
- 12.6 Layout and cut stringers, risers, and treads.
- 12.7 Build a small stair unit with a temporary handrail.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 12.1 Identifies the various types of stairs.
- 12.2 Identifies the various parts of stairs.
- 12.3 Identifies the materials used in the construction of stairs.
- 12.4 Interprets construction drawings of stairs.
- 12.5 Calculates total rise, number and size of risers, and number and size of threads required for a stairway.
- 12.6 Lay outs and cuts stringers, risers, and treads.
- 12.7 Lays out and build a small stair unit with a handrail to a given rise.

SAMPLE PERFORMANCE TASKS

- Contact local specialty stair contractor to come in a demonstration stair construction.
- Take students to a job site where a stair is being build and have them observe stair construction.
- Use books or architectural magazines to show unusual stair designs.

INTEGRATION/LINKAGES

Science, Computer Skills, Research and Writing skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary’s Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CARPENTRY I

SAMPLING OF AVAILABLE RESOURCES

- *Residential Carpentry I*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ; ©2000. Also known as the Contren Learning Series materials.
- *Residential Carpentry II*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ; ©2000. Also known as the Contren Learning Series materials.
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