Unit: Framing
Title: Rafters

Skill(s) and Knowledge: Identify and describe the different roof types and roof framing terms. .

Tasks: Students will be able to: Lay out ceiling joists and a common rafter using a speed square or a framing square.

Performance objective:
Layout a common rafter and erect a gable roof, layout and install gable studs and apply roof sheathing.

Tools, supplies and reference materials:
Framing square, speed square, framing materials, skill saw, hand tools. Career Connections Project Book 3 pages: 229-330

Methods of instruction: Demonstration on how to layout and install ceiling joists and a common rafter using both a framing square and a speed square. Lecture and video from virtual shop, read materials from text.

Estimated time: 30 hrs. **Number of students:** 10

Task analysis or activities:
Students will layout and install ceiling joists and layout a common rafter. Next students will assemble and sheath a gable roof.

Evaluation: Students will be graded on their use of time, safety methods, quality of work, cleaning and organization of their work area, interaction with other students, and vocational employability skills grading rubric. Manipulative skills assessments and written evaluations.

Performance Notes:

Vocational Frameworks References
2.A.01.05   Identify and apply OSHA safety regulations.
2.E.01.01   Demonstrate use and maintenance of layout, marking and measuring tools.
2.D.05.07   Layout roof rafter.
2.H.04.04   Cut and install common rafter systems.

English/Strand 3 Frameworks References:
2.B.01-06   Determine the meaning of symbols, key terms, and other domain-specific
               words and phrases in a technical context.

Frameworks References: Math

2.B.01 Use Trigonometric ratios and Pythagorean Theorem to solve right triangles in applied problems.

Common Core References:
     Read and listen critically for information understanding and enjoyment
     Set goals and achieve them by organizing time, workspace, and resources effectively
     Work both independently and in groups

SCANS references:
     Foundation Skills:
1. Basic skills— reading, writing, mathematics, speaking, and listening.
2. Thinking Skills-- thinking creatively, making decisions, solving problems, visualizing, knowing how to learn, and reasoning
3. Personal qualities--individual responsibility, self-esteem, sociability, self management, and integrity

     Work Place Competencies
1. Resources--allocating time, money, material, space, and staff.
2. Interpersonal skills--working in teams, teaching others, serving customers, leading negotiating, and working well with culturally diverse populations.
3. Information--acquiring and evaluating data, organizing and maintaining files, interpreting & communicating, and using computer to process information
4. Systems--understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems.
5. Technology--selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies.