Steel Center For Career And Technical Education
Course Name: Carpentry

Unit Name: 100 SAFETY/OCCUPATIONAL ORIENTATION
Unit Number: PA-100

Dates: Fall 2019 **Hours:** 70.00

Unit Description/Objectives:

Student will know and be able to identify the program rules and regulations and follow the safety procedures and reference the associated materials.

Tasks:

PA101 - Identify and follow all basic safety practices and procedures.

PA102 - Identify and follow all lab safety practices and procedures.

PA103 - Identify and follow all construction industry safety practices and procedures.

PA104 - Follow procedures in Safety Data Sheets (SDS) system.

PA105 - Identify and follow all OSHA safety standards at the construction site.

PA106 - RESERVED

PA107 - Demonstrate the ability to construct scaffolding.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- 13.2.11 E Demonstrate, in the career acquisition process, the application of essential workplace skills/knowledge, such as, but not limited to: commitment, communication, dependability, health/safety, laws and regulations (that is Americans with Disabilities Act, Child Labor Law, Fair Labor Standards Act, OSHA, Material Safety Data Sheets), personal initiative, Self-advocacy, scheduling/time management, team building, technical literacy and technology.

Supporting Standards/Anchors

3.5.9-10.G. Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).
3.4.12.B1 Analyze ethical, social, economic, and cultural considerations as related to the development, selection, and use of technologies.
3.4.10.E7 Evaluate structure design as related to function, considering such factors as style, convenience, safety, and efficiency.

Connecting Standard/Anchor

- CC.3.5.11-12.G Integrate and evaluate multiple sources of information presented in diverse formats and media in order to address a question or solve a problem.

Supporting Standards/Anchors

CC.3.5.11-12.I. Synthesize information from a range of sources into a coherent understanding.
CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete Job Safety Analysis
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Understand accidents and their causes
Define OSHA and its impact on construction workers
Identify the appropriate PPE for common work situations and explain how to use it
Explain the Hazard Communication Standard and be able to use a Material Safety Data Sheet
Explain how fires start, are sustained, and extinguished
Understand trench safety procedures
Have an understanding of electric shock and be able to list safety considerations when working with or near electricity
Demonstrate at all times personal, shop, equipment, and job site safety
Review OSHA
Review SDS Sheets
Complete assigned project
List safety considerations relating to scaffolds
Choose ladders correctly and wisely
Understand safety relating to compressed air and pneumatic tools
Rig a roof truss for hoisting by a crane safely
Use standard hand signals for directing a crane operator
Recognize common defects and safety hazards in rigging equipment

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards

Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Writing Activities
YouTube
Video/DVD Worksheets
Rubrics
Check Lists
Individual Projects
Group Projects
Content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

SDS Sheets
Safety DVD Videos
Ladder
Pipe scaffolding
Assorted resource textbooks
Computer
PowerPoint Presentations
Calculator
Extension cord with GFI
Hand tools and power tools
Measuring tools
Construction Horses
Leveling tools
Lumber and wood products
Fasteners, nails, etc.

Steel Center For Career And Technical Education
Course Name: Carpentry

Unit Name: PA200 HAND TOOLS
Unit Number: PA-200

Dates: Fall 2019 **Hours:** 60.00

Unit Description/Objectives:
Student will know and be able to safely use various types of hand tools.

Tasks:
PA201 - Demonstrate proper use of small hand tools.

PA202 - Demonstrate proper use of sawing tools.

PA203 - Demonstrate proper use of fastening tools.

PA204 - Demonstrate proper use of measuring tools.

PA205 - Demonstrate proper use of cutting tools.

PA206 - Demonstrate the ability to sharpen cutting tools.

PA207 - Demonstrate proper use of ladders.

PA208 - Demonstrate proper use of finishing tools.

PA209 - Demonstrate the ability to properly maintain hand tools.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.

Supporting Standards/Anchors

3.4.10.A2 Interpret how systems thinking applies logic and creativity with appropriate comprises in complex real-life problems.
3.4.12.C3 Apply the concept that many technological problems require a multi-disciplinary approach.
3.4.10.E7 Evaluate structure design as related to function, considering such factors as style, convenience, safety, and efficiency.

Connecting Standard/Anchor

- CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

Supporting Standards/Anchors

CC.3.5.11-12.C Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

CC.2.1.6.E.2 Identify and choose appropriate processes to compute fluently with multi-digit numbers.
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned project
Read a ruler or measuring tape
Identify tools and their use
Understand safety with tools
Use the proper tool for the job at hand
Identify and describe the use of hand tools that are most commonly used by carpenters
Use hand tools in a safe and appropriate manner
Maintain hand tools in suitable working condition

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards

Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Individual Projects
Group Projects
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Phillips screw driver
Slotted screw driver
Combination square
Hand drill
Adjustable angle square
Allen wrench
Straight claw hammer
Coping saw
Curve claw hammer
Back saw
Plumb bob
Hack saw
Compass saw
2 foot mahogany level
Crosscut saw
Flat bar
Wood rasp
ripping bar
Torpedo level
Nail claw
staple gun
Open end wrench
Closed end wrench
Wood chisel metal cap
Crescent wrench
Wood chisel
Needle nose pliers
Coal chisel
Linesman pliers
25' Tape measure
Vice grips
100' tape
Channel locks
Folding foot rule
Block plane
chalk line
Jack plane
Socket
framing square
utility knife
Speed square
Retractable knife
Nail Set
4' Aluminum level
End nippers
Tin snips
Big Shears
Compass
4 in 1 screw driver
Pipe Clamp
Spring clamp
Wood screw clam
Ratchet Brace

Monroe Career & Technical Institute
Course Name: Carpentry

STEEL CENTER
FOR CAREER AND TECHNICAL EDUCATION

Unit Name: PA 300 POWER TOOLS

Unit Number: PA-300

Dates: Fall 2019 **Hours:** 70.00

Unit Description/Objectives:

Student will know and be able to safely use various power tools.

Tasks:

PA301 - Demonstrate proper use of stationary electric power tools.

PA302 - Demonstrate proper use of pneumatic tools systems.

PA303 - Demonstrate proper use of portable electric power tools.

PA304 - Demonstrate proper maintenance of electric power tools.

PA305 - Demonstrate to proper maintenance of pneumatic power tools.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Supporting Standards/Anchors

3.4.10.A2 Interpret how systems thinking applies logic and creativity with appropriate comprises in complex real-life problems.
3.4.10.C1 Apply the components of the technological design process.
3.4.10.E7 Evaluate structure design as related to function, considering such factors as style, convenience, safety, and efficiency.

Connecting Standard/Anchor

- CC.3.5.11-12.l Synthesize information from a range of sources (e.g., texts, experiments simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

Supporting Standards/Anchors

CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems.
CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned project
State general safety rules for operating power tools
Describe and safely use the following: circular saw, saber saw, reciprocating saw, drill, hammer-drill, electric plane, router, sander, stapler, pneumatic nail, powder actuated driver, table saw, and power miter saw, belt sander, band saw, bench sander
Identify and demonstrate proper use of common power tools
Demonstrate simple operations with common power tools

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Technology integration
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Test
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Diagrams
Individual Projects

Group Projects
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Circular Saws
Reciprocating Saws
Saber Saws
Drills
Drivers
Portable Power Planes
Routers
Sanders
Pneumatic Staplers
Table Saws
Miter Saws
Drill Press
Radial arm saw Arm Saw
Dual Drum Sander
Belt Sander
Jointer

Computer
PowerPoint Presentations
Calculator

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA 400 BLUEPRINTS READING

Unit Number: PA-400

Dates: Fall 2019 **Hours:** 110.00

Unit Description/Objectives:

Student will know and be able to interpret and analyze a set of blueprints.

Tasks:

PA401 - Read and interpret blueprints.

PA402 - Read, interpret and comprehend standard symbols and abbreviations.

PA403 - Read and interpret building specifications.

PA404 - Read and interpret a plot plan.

PA405 - Read and interpret a foundation plan.

PA406 - Read and interpret elevation plans.

PA407 - Read and interpret details and section views.

PA408 - Read and interpret floor, wall and roof framing plans.

PA409 - Demonstrate the knowledge of building and zoning codes.

PA410 - Demonstrate knowledge of the Americans with Disabilities Act (ADA) regulations.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Supporting Standards/Anchors

CC 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems.
CC 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
CC 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.

Connecting Standard/Anchor

- CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context.

Supporting Standards/Anchors

CC.3.6.9-10.C Produce clear and coherent writing appropriate to task, purpose, and audience.

CC.3.6.11.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned projects
Describe and explain the function of the various kinds of drawings contained in a set of blueprints
Demonstrate how specifications are used
Identify various types of lines and read dimensions
Identify and explain the meaning of symbols and abbreviations used on a set of prints
Read and interpret plot, foundation, floor, and framing plans
Recognize oblique, isometric, and orthographic drawings

Identify plan views, elevations, and sections
Identify the scale used on a construction drawing
Read an architect's scale
Distinguish between and understand the meaning of:
Object lines, dashed lines (hidden and phantom), extension lines and dimension lines, center lines, leaders, cutting-plane lines
Identify and understand the meaning of door and window symbols, as well as material symbols
Identify and understand the meaning of electrical and mechanical symbols, reference marks for coordinating drawings, and abbreviations
Orient building elevations to building plans
Explain the kinds of information shown on elevations
Find and explain information shown on section views and large-scale details
Orient sections and details to the other plans and elevations
Read and interpret plot, foundation, floor, and framing plans
Define and explain the purpose of building codes and zoning laws
Explain the requirements for obtaining a building permit and the duties of a building inspector

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Technology integration
Study guides

Computer assisted instruction
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

JSA'S
Worksheets
Quizzes
Pre/Post Tests
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Diagrams
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Architect's Scale
Graph Paper
Blueprint Examples
Compass
Construction Template

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA500 SITE PREPARATION AND LAYOUT

Unit Number: PA-500

Dates: Fall 2019 **Hours:** 50.00

Unit Description/Objectives:

Student will know and be able to prepare a site and establish elevations and layout for a construction site.

Tasks:

PA501 - Determine factors needed to be considered before the start of a building project.

PA502 - Demonstrate knowledge of how to acquire a building permit.

PA503 - Determine knowledge of PA one call system.

PA504 - Describe how to establish elevations and grades from benchmarks using a transit level.

PA505 - Demonstrate how to stake out a building foundation using the Pythagorean theory.

PA506 - Demonstrate knowledge on how to use batter boards.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.G. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

Supporting Standards/Anchors

CC.2.1.HS.F.24 Use units as a way to understand problems and to guide the solution of multistep problems.
CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects.

Connecting Standard/Anchor

- CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context.

Supporting Standards/Anchors

CC.2.1.6.E.2 Identify and choose appropriate processes to compute fluently with multi-digit numbers.
CC.2.3.8.A.1 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned projects
Demonstrate preparing a site
Establish level points across a building area using a water level and by using a carpenter's level in combination with a straightedge
Accurately set up and use the builder's level, transit-level, and laser level
Use an optical level to determine elevations
Lay out building lines by using the Pythagorean Theorem and check the layout for accuracy
Build batter boards and accurately establish building lines with string.
Read and interpret plot, foundation, floor, and framing plans
Define and explain the purpose of building codes and zoning laws
Explain the requirements for obtaining a building permit and the duties of a building inspector
Complete sample permit
Participate in a guest speaker demonstration

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes

Pre/Post Tests
Summaries
JSA's
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Diagrams
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Computer
PowerPoint Presentations
Calculator
Extension cord with GFI
Hand tools and power tools
Measuring tools
Construction Horses
Leveling tools
Lumber and wood products
Fasteners, nails, etc.
Sledge Hammer
Stakes
Line
Laser Level
Plywood
fasteners, nails, etc.
Square
Tape Measures
Plumb bob
Straight Claw Hammer
Level
Power Saw
Set of Horses
Extension Cord with GFI
Fasteners

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA600 FOOTINGS AND FOUNDATIONS

Unit Number: PA-600

Dates: Fall 2019 **Hours:** 40.00

Unit Description/Objectives:

Student will know and be able to identify the various types of foundations and footers and determine the amount of concrete needed for each application.

Tasks:

PA601 - Demonstrate how to determine footer type.

PA602 - Demonstrate proper use of leveling instruments.

PA603 - Demonstrate and establish footer lines and elevations.

PA604 - Demonstrate layout and construct forms.

PA605 - Demonstrate layout and construct footers.

PA606 - Demonstrate layout foundations.

PA607 - Demonstrate layout and construct forms for concrete slabs.

PA608 - Demonstrate knowledge of how to properly install reinforcing bars.

PA609 - Demonstrate knowledge of how to properly erect vertical and horizontal framework.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Supporting Standards/Anchors

CC.2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios.
CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.
CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Connecting Standard/Anchor

- CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

Supporting Standards/Anchors

CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.
CC.2.3.8.A.1 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned projects
Demonstrate the ability to layout and construct forms for a footer
Demonstrate the ability to layout a foundation
Explain techniques used for the proper placement and curing of concrete.
Describe the composition of concrete and factors affecting its strength, durability, and workability.
Explain the reasons for making a slump test.
Explain the reasons for reinforcing concrete and describe the materials used.
Estimate quantities of concrete.

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Essays
Summaries
JSA's
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Diagrams
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Computer
PowerPoint Presentations
Calculator
Extension cord with GFI
Hand tools and power tools
Measuring tools
Construction Horses
Leveling tools
Lumber and wood products
Fasteners, nails, etc.
Sledge Hammer
Stakes
Line
Laser Level
Plywood
fasteners, nails, etc.
Square
Tape Measures
Plumb bob
Straight Claw Hammer
Level
Power Saw
Set of Horses
Extension Cord with GFI
Fasteners

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA700 FRAMING - FLOOR CONSTRUCTION

Unit Number: PA-700

Dates: Fall 2019 **Hours:** 65.00

Unit Description/Objectives:

Student will know and be able to measure, layout, and install floor joist and also install the sub floor.

Tasks:

PA701 - Determine methods used to fasten sill plates.

PA702 - Properly install fasteners used in floor framing.

PA703 - Properly measure and install sill plates.

PA704 - Properly measure and install floor joists, including manufactured floor joists.

PA705 - Properly measure and install joists for a cantilever floor.

PA706 - Properly layout and construct cross and solid bridging.

PA707 - Properly layout and install sub-flooring.

PA708 - Properly measure and frame floor openings.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Supporting Standards/Anchors

CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.
CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
CC.2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios.

Connecting Standard/Anchor

- CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

Supporting Standards/Anchors

CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group project
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned projects
Describe platform, balloon, and post-and-beam framing, and identify framing members of each
Describe several energy and material conservation framing methods
Build and install girders, erect columns, and lay out sills
Lay out and install floor joists
Frame openings in floors
Lay out, cut, and install bridging
Apply sub flooring
Describe methods to prevent destruction by wood pests
Identify all the components, accurately locate their positions, and cut each member to fit for a floor system

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
JSA's
Quizzes

Pre/Post Tests
Essays
Summaries
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Diagrams
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Computer
PowerPoint Presentations
Calculator
Extension cord with GFI
Hand tools and power tools
Measuring tools
Construction Horses
Leveling tools
Lumber and wood products
Fasteners, nails, etc.
Floor framing material
Beams & columns
Floor joist & rim board
Bridging
Hand and power tools
Measurement tools
Construction Horses
Extension cord with GFCI
Fasteners, nails, etc.

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA800 FRAMING - WALL CONSTRUCTION

Unit Number: PA-800

Dates: Fall 2019 **Hours:** 65.00

Unit Description/Objectives:

Student will know and be able to assemble and erect walls and ceilings.

Tasks:

PA801 - Determine fastening methods and properly install fasteners in wall construction.

PA802 - Properly measure, layout and construct a wall.

PA803 - Properly select and install various types of insulation.

PA804 - Properly measure, layout and construct door openings.

PA805 - Properly measure, layout and construct window openings.

PA806 - Properly measure, layout and construct solid headers.

PA807 - Properly measure, layout and install sheathing.

PA808 - Properly plumb, align and brace walls.

PA809 - Demonstrate knowledge of steel framing properly install metal studs.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Supporting Standards/Anchors

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CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.
CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.

Connecting Standard/Anchor

- CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

Supporting Standards/Anchors

CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area,

surface area, circumference, and volume.
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned projects
Identify and describe the function of each part of the wall frame
Determine the length of exterior wall studs
Describe four different types of walls used in residential framing
Determine the rough opening width and height for windows and doors
Lay out the wall plates for partition intersections, openings, and OC studs
Describe several methods of framing corner and partition intersections
Assemble and construct a wall section
Erect and temporarily brace a wall section plumb and straight
Describe the function of and install blocking and backing
Apply wall sheathing
Lay out, cut, and install ceiling joists
Identify and describe the components of non-structural steel wall framing
Install a steel door buck
Estimate the materials needed for walls and ceiling framing
Construct exterior walls to the correct height, braced plumb, and straightened frame window and door rough openings to specified sizes

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer’s directions when using any product, tool, equipment, etc.

Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Drawings
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Computer
PowerPoint Presentations
Calculator
Extension cord with GFI
Hand tools and power tools
Measuring tools
Construction Horses
Leveling tools
Lumber and wood products
Fasteners, nails, etc

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA900 FRAMING - ROOF CONSTRUCTION

Unit Number: PA-900

Dates: Fall 2019 **Hours:** 65.00

Unit Description/Objectives:

Student will know and be able to properly measure, layout, cut and install a variety of roof framing components.

Tasks:

PA901 - Determine fastening methods used during roof construction.

PA902 - Properly install fasteners used in roof construction.

PA903 - Properly measure, layout, cut and install a ridge board.

PA904 - Properly measure, layout, cut and install hip, jack and truss rafters.

PA905 - Properly measure, layout, cut and install roof trusses.

PA906 - Properly measure, layout, cut and install brace roof trusses.

PA907 - Properly measure, layout, cut and install roof sheathing.

PA908 - Properly measure, layout, cut and install roof openings.

PA909 - Demonstrate knowledge of how to frame and install dormers.

PA910 - Properly measure, layout, cut and install roofing paper.

PA911 - Properly measure, layout, cut and install shingles.

PA912 - Properly measure, layout, cut and install capping.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Supporting Standards/Anchors

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CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.

CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.

Connecting Standard/Anchor

- CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

Supporting Standards/Anchors

CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned project
Describe several roof types
Define the various roof framing terms
Identify the members of gable, gambrel, hip, intersecting, and shed roofs Lay out a common rafter and erect a gable roof
Lay out and install gable end studs
Lay out a hip rafter and hip jack rafters
Lay out a valley rafter and valley jack rafters
Describe and perform the safe and proper procedure to erect a trussed roof
Apply roof sheathing
Estimate the quantities of materials used in a roof frame

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area

Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Essays
Summaries
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Diagrams
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Circular Saws
Reciprocating Saws
Saber Saws
Drills
Computer
PowerPoint Presentations
Calculator

Extension cord with GFCI
Hand tools and power tools
Measuring tools
Construction Horses
Leveling tools
Lumber and wood products
Fasteners, nails, etc.

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA1000 EXTERIOR FINISH
Unit Number: PA-1000

Dates: Fall 2019 **Hours:** 40.00

Unit Description/Objectives:

Student will know and be able to properly measure, layout, and install all components for an exterior of a building.

Tasks:

PA1001 - Determine fastening methods used during exterior finishing operations.

PA1002 - Properly install fasteners used in exterior finishing operations.

PA1003 - Properly measure, layout and install house wrap.

PA1004 - Properly measure, layout and install exterior doors.

PA1005 - Properly measure, layout and install windows.

PA1006 - Properly measure, layout and install siding.

PA1007 - Properly measure, layout and install soffits and fascia.

PA1008 - Properly measure, layout and install gutters and downspouts.

PA1009 - Properly measure, layout and install an exterior set of stairs.

Standards / Assessment Anchors

- CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Focus Standard/Anchor #1

Supporting Standards/Anchors

2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.
CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
2.1.HS.F.2 Apply properties of rational and irrational numbers to solve rea world or mathematical problems.

Connecting Standard/Anchor

- CC.3.5.11-12.D: Determine the meaning of symbols, key terms, and other domain-specific words and phrases.

Supporting Standards/Anchors

CC.2.1.6.E.2 Identify and choose appropriate processes to compute fluently with multi-digit numbers.
CC.3.5.11-12.I. Synthesize information from a range of sources into a coherent understanding.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
Maintain work area
Participate in job readiness assignments

Skill:

Complete assigned project
Describe and apply roofing felt underlayment, organic or fiber glass asphalt shingles, and roll roofing
Describe and apply flashing to valleys, sidewalls, chimneys, and other roof obstructions
Estimate needed roofing materials
Describe the shapes, sizes, and materials used as siding products
Install corner boards and prepare side wall for siding
Apply horizontal and vertical siding
Apply plywood and lapped siding
Apply wood shingles and shakes to sidewalls
Apply vinyl and aluminum siding
Describe various types of cornices and name their parts
Install gutters and downspouts
Describe the construction of and kinds of materials used in decks
Lay out and install footings, supporting posts, girders, and joists for a deck
Apply decking in the recommended manner and install flashing, for an exposed deck, against a wall
Describe the most popular styles of windows and name their parts
Select and specify desired sizes and styles of windows from manufacturers' catalogs
Install various types of windows in an approved manner
Name the parts of and install door frame
Describe the standard designs and sizes of doors and name their parts
Fit and hang a door to a preexisting opening
Install lock sets in doors
Install bypass, bi fold, and pocket doors

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Advanced Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Essays
Summaries
JSA's
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Diagrams
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Circular Saws
Reciprocating Saws
Saber Saws
Drills
Drivers
Portable Power Planes
Computer
PowerPoint Presentations
Calculator
Extension cord with GFCI
Hand tools and power tools
Measuring tools
Construction Horses
Leveling tools
Lumber and wood products
Fasteners, nails, etc.

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA1100 INTERIOR FINISH

Unit Number: PA-1100

Dates: Fall 2019 **Hours:** 40.00

Unit Description/Objectives:

Student will know and be able to properly install drywall, door and window casings, moldings, suspended ceiling system, and wood flooring.

Tasks:

PA1101 - Determine fastening methods used during interior finishing operations.

PA1102 - Properly install fasteners used in interior finishing operations.

PA1103 - Properly measure, layout and install tape and finish drywall.

PA1104 - Properly measure, layout and install suspended and tile ceilings.

PA1105 - Properly measure, layout and install interior doors.

PA1106 - Properly measure, layout and install door, trim, casings and hardware.

PA1107 - Properly measure, layout and install window trim, casings and hardware.

PA1108 - Properly measure, layout and install baseboard and molding.

PA1109 - Properly measure, layout and install hardwood, tile and block flooring.

PA1110 - Properly measure, layout and install an interior set of stairs.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.G: Integrate and evaluate multiple sources of information presented in diverse formats and media to address a question or solve a problem.

Supporting Standards/Anchors

CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words.
CC.2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.
CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.

Connecting Standard/Anchor

- CC.3.5.11-12.C Follow precisely a complex multistep procedures when carrying out experiments, taking measurements, or performing technical tasks.

Supporting Standards/Anchors

CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.
CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Instructional Activities:

Knowledge:

Complete reading assignments
Complete assigned worksheets
Complete assigned workbook pages
Participate in lecture discussions and respond to questions
Review assigned pages in study guide handouts
Participate in group activities
Complete assigned individual and group projects
JSA's
Maintain work area
Participate in job readiness assignments

Skill:

Follow the logical installation order of house wrap, windows, and doors, and siding
Compare the wide range of styles and sizes interior, exterior doors, and windows
Maintain the easy operation and weather tightness of the window and door units
Create and maintain safe work habits as many windows are installed from scaffolds and often stepladders are used
Describe the most popular styles of windows and name their parts
Select and specify desired sizes and styles of windows from manufacturers' catalogs
Install various types of windows in an approved manner
Name the parts of and set a pre hung door frame
Describe the standard designs and sizes of doors and name their parts
Fit and hang a door to a preexisting opening
Install lock sets in doors
Participate in job readiness assignments
Identify the components of a suspended ceiling system.
Layout and install suspended ceilings.
Identify standard interior moldings and describe their use.
Apply ceiling and wall molding.
Apply interior door casings, baseboard, base cap, and base shoe.
Install window trim, including stools, aprons, jamb extensions, and casings.
Apply strip and plank flooring.
Estimate quantities of the parts in a suspended ceiling system.
Estimate the quantities of molding needed for windows, doors, ceilings, and base.
Estimate wood flooring required for various installations
Name various stair finish parts and describe their location and function
Describe several stairway designs
Define terms used in stair framing
Determine the unit rise and unit run of a stairway given the total rise
Determine the length of a stairwell
Lay out a stair carriage and frame a straight stairway
Lay out and frame a stairway with a landing
Analyze the importance of comfort and safety of staircases
Identify each of the staircase parts, know their locations, and understand their functions
Compare the wide variety of wood species for stair finish parts
Compare stair lay out theory and rafter layout theory
Compare the variations in stair construction depending on the stair function, location, and component material used

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Review games
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Assessment:
Worksheets
Quizzes
Pre/Post Tests
JSA's
Writing Activities
Rubrics
Check List
Oral Presentation
Diagrams
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.

Vogt, Floyd. Residential Construction Academy. Print

Ladder
Pipe scaffolding
Computer
PowerPoint Presentations
Calculator
Extension cord with GFI
Hand tools and power tools
Measuring tools
Construction Horses
Leveling tools
Lumber and wood products
Fasteners, nails, etc.

Circular Saws
Reciprocating Saws
Saber Saws
Drills and Drivers
Portable Power Planes
Routers, Sanders
Pneumatic Staplers and Nailers
Table Saws
Miter Saws
Band Saws
Jointers

Fasteners, nails, etc.
Wood
Tape Measure
Drywall
Drywall Tape
Joint Compound
Interior Moldings
Windows
Doors
Framing Square

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: PA1200 ESTIMATION

Unit Number: PA-1200

Dates: Fall 2019 **Hours:** 190.00

Unit Description/Objectives:

Student will know and be able to correctly estimate the amount of material that is needed to complete a given task.

Tasks:

PA1201 - Demonstrate knowledge of how to estimate bricks and blocks needed to complete a given task.

PA1202 - Correctly estimate the amount of concrete needed to complete a given task.

PA1203 - Correctly estimate the cost and amount of materials to finish an exterior wall.

PA1204 - Correctly estimate the cost and amount of materials to finish an interior wall.

PA1205 - Correctly estimate the cost and amount of materials to construct a floor.

PA1206 - Correctly estimate the cost and amount of materials to construct a roof.

PA1207 - Correctly estimate the cost and amount of materials to install siding for a house.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- CC.3.5.11-12.D: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific or technical context.

Supporting Standards/Anchors

CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.
CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Connecting Standard/Anchor

- CC.3.5.11-12.D: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context.

Supporting Standards/Anchors

CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.
CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.

Instructional Activities:

Knowledge:

Complete math workbook problems
Complete ATB Real world problems
Define math vocabulary

Skill:

Demonstrate the ability correctly estimate the amount of bricks, block, and concrete needed to complete a given task
Estimate the cost of materials used for exterior finish
Estimate the cost of materials used for interior finish
Estimate the cost of materials used for floor construction
Estimate the cost of materials used for wall construction
Estimate the cost of materials used for roof construction

Remediation:

Re-teach major concepts
Review with teacher assistance
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions, worksheets, etc.
Complete Project as assigned

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, Floyd. Instructor's Resource Guide to Accompany: Residential Construction Academy. Print.
Vogt, Floyd. Residential Construction Academy. Print

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: L1300 BUILDING MATERIALS

Unit Number: L-1300

Dates: Fall 2019 **Hours:** 50.00

Unit Description/Objectives:

Student will know and be able to identify and describe all types of wood, natural and engineered, used in construction and the lumbering process.

Tasks:

L1301 Explain the lumbering process

L1302 Identify wood and its uses

L1303 Identify panel products and their uses

L1304 Identify engineered products and their uses

Standards / Assessment Anchors

Focus Standard/Anchor #1

- 13.2.11.E Demonstrate, in the career acquisition process, the application of essential workplace skills/knowledge, such as, but not limited to: commitment, communication, dependability, health/safety, laws and regulations (that is Americans With Disabilities Act, Child Labor Law, Fair Labor Standards Act, OSHA, Material Safety Data Sheets), personal initiative, Self-Advocacy, scheduling/time management, team building, technical literacy and technology.

Supporting Standards/Anchors

3.4.10.A2 Interpret how systems thinking applies logic and creativity with appropriate comprises in complex real-life problems.
3.4.10.C1 Apply the components of the technological design process.
3.4.12.B1 Analyze ethical, social, economic, and cultural considerations as related to the development, selection, and use of technologies.
3.4.12.C3 Apply the concept that many technological problems require a multi-disciplinary approach.
3.3.12.A2 Analyze the availability, location, and extraction of Earth's resources. Evaluate the impact of using renewable and nonrenewable energy resources on the Earth's system.
3.4.10.E7 Evaluate structure design as related to function, considering such factors as style, convenience, safety, and efficiency.

Focus Standard/Anchor #2

- CC.3.5.11-12.C Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Supporting Standards/Anchors

CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.

CC.3.5.11-12.H Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
CC.3.5.11-12.J By the end of grade 12, read and comprehend science/technical texts in the grades 11–12 text complexity band independently and proficiently.
CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.
CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.
CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
CC.2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.

Connecting Standard/Anchor

- CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

Supporting Standards/Anchors

CC.2.1.6.E.2 Identify and choose appropriate processes to compute fluently with multi-digit numbers.
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.
CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.
CC.2.3.8.A.1 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.

Instructional Activities:

Knowledge:

Complete textbook chapters dealing with wood and wood products
Identify the sizes of various types of lumber
Identify the differences of actual and nominal lumber
Identify the differences between boards, framing lumber and timber
Identify the differences and uses of different plywoods
Estimate board footage using math workbooks and real world samples

Skill:

Demonstrate knowledge of various types of wood and wood products
Demonstrate the proper use boards, framing lumber and plywood
Demonstrate proper estimation of products

Remediation:

Re-teach major concepts
Review with teacher assistant
Worksheets
Individual tutoring
Peer tutoring
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions and worksheets
Assist other students

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Time Cards
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, F. & Standiford, K. (2008). Chapter 1: Hand Tools, 1-6. Residential Construction Academy Workbook: Carpentry (2nd ed). Clifton Park, NY: Thompson Delmar Learning.

Vogt, F. (2008). Chapter 1: Hand Tools, 3-22. Residential Construction Academy: Carpentry (2nd ed). Clifton Park, NY: Thompson Delmar Learning.

Proctor, T. E. (1997). Unit Exercises 8-13. Carpentry Workbook (3rd ed). Homewood, IL: American Technical Publishers, Inc.

Koel, L. (1997). Units 8-13 Carpentry (3rd ed). Homewood, IL: American Technical Publishers, Inc.

Huth, M. (2008). Chapter 13, Basic Principals for Construction (2nd ed). Clifton Park, NY: Thompson Delmar Learning.

Huth & Huth (2006) Practical Problems in Mathematics for Carpenters (8th ed). Clifton Park, NY: Thompson Delmar Learning.
Plywood
Framing lumber
Boards
Timbers
Engineered products
Construction calculator
Hardwoods
Measuring tape

Monroe Career & Technical Institute
Course Name: Carpentry

Unit Name: L1400 FASTENERS

Unit Number: L-1400

Dates: Fall 2019 **Hours:** 0.00

Unit Description/Objectives:

Student will know and be able to name and identify common used fasteners and select them for the appropriate construction application.

Tasks:

L1401 - Name, identify and select the proper nails for their appropriate construction application.

L1402 - Name, identify and select the proper screws for their appropriate construction application.

L1403 - Name, identify and select the proper bolts for their appropriate construction application.

L1404 - Name, identify and select the proper anchors for their appropriate construction application.

L1405 - Name, identify and select the proper adhesives for their appropriate construction application.

Standards / Assessment Anchors

Focus Standard/Anchor #1

- 13.2.11.E Demonstrate, in the career acquisition process, the application of essential workplace skills/knowledge, such as, but not limited to: commitment, communication, dependability, health/safety, laws and regulations (that is Americans With Disabilities Act, Child Labor Law, Fair Labor Standards Act, OSHA, Material Safety Data Sheets), personal initiative, Self-Advocacy, scheduling/time management, team building, technical literacy and technology.

Supporting Standards/Anchors

3.4.10.A2 Interpret how systems thinking applies logic and creativity with appropriate comprises in complex real-life problems.
3.4.10.C1 Apply the components of the technological design process.
3.4.12.B1 Analyze ethical, social, economic, and cultural considerations as related to the development, selection, and use of technologies.
3.4.12.C3 Apply the concept that many technological problems require a multi-disciplinary approach.
3.3.12.A2 Analyze the availability, location, and extraction of Earth's resources. Evaluate the impact of using renewable and nonrenewable energy resources on the Earth's system.
3.4.10.E7 Evaluate structure design as related to function, considering such factors as style, convenience, safety, and efficiency.

Focus Standard/Anchor #2

- CC.3.5.11-12.C Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Supporting Standards/Anchors

CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.

CC.3.5.11-12.J By the end of grade 12, read and comprehend science/technical texts in the grades 11–12 text complexity band independently and proficiently.

CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.

CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.

CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

CC.2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.

Connecting Standard/Anchor

- CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

Supporting Standards/Anchors

CC.2.1.6.E.2 Identify and choose appropriate processes to compute fluently with multi-digit numbers.

CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.

CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.

CC.2.3.8.A.1 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.

CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.

Instructional Activities:

Knowledge:

Complete textbook chapters dealing with wood and wood products
Identify the sizes of various types of lumber
Identify the differences of actual and nominal lumber
Identify the differences between boards, framing lumber and timber
Identify the differences and uses of different plywoods
Estimate board footage using math workbooks and real world samples

Skill:

Demonstrate knowledge of various types of wood and wood products
Demonstrate the proper use boards, framing lumber and plywood
Demonstrate proper estimation of products

Remediation:

Re-teach major concepts
Review with teacher assistant
Worksheets
Individual tutoring
Peer tutoring
Retest or alternative assessment
Study guides
Checklists

Enrichment:

Complete review questions and worksheets
Assist other students

Safety:

Student must:
Handle material in a safe and work like manner
Use protective clothing and equipment
Use hand tools in a safe manner
Use adequate ventilation when working in enclosed area
Follow manufacturer's directions when using any product, tool, equipment, etc.
Use proper safety precautions when using /operating hand tools.
Use tools and equipment in a professional work like manner according to OSHA standards
Know and follow the established safety rules at all times
Maintain clean and safe work area

Assessment:

Worksheets
Quizzes
Pre/Post Tests
Time Cards
Writing Activities
Video/DVD Worksheets
Rubrics
Check Lists
Individual Projects
Group Projects
Any content related assessment
Portfolio

Resources/Equipment:

Vogt, F. & Standiford, K. (2008). Chapter 1: Hand Tools, 1-6. Residential Construction Academy Workbook: Carpentry (2nd ed). Clifton Park, NY: Thompson Delmar Learning.

Vogt, F. (2008). Chapter 1: Hand Tools, 3-22. Residential Construction Academy: Carpentry (2nd ed). Clifton Park, NY: Thompson Delmar Learning.

Proctor, T. E. (1997). Unit Exercises 8-13. Carpentry Workbook (3rd ed). Homewood, IL: American Technical Publishers, Inc.

Koel, L. (1997). Units 8-13 Carpentry (3rd ed). Homewood, IL: American Technical Publishers, Inc.

Huth, M. (2008). Chapter 13, Basic Principals for Construction (2nd ed). Clifton Park, NY: Thompson Delmar Learning.

Huth & Huth (2006) Practical Problems in Mathematics for Carpenters (8th ed). Clifton Park, NY: Thompson Delmar Learning.
Plywood
Framing lumber
Boards
Timbers
Engineered products
Construction calculator
Hardwoods
Measuring tape