Steel Center for Career and Technical Education

Course Name: Building Trades Maintenance

Unit Name: PA100 DEMONSTRATE SAFETY IN THE BUILDING AND PROPERTY MAINTENANCE PROGRAM

Unit Number: PA100

Dates: Fall 2023 **Hours: 111**

Unit Description/Objectives:

Student will know and be able to demonstrate safety practices to OSHA standards.

Tasks:

PA101 - Demonstrate knowledge of general shop safety.

PA102 - Wear appropriate personal protective clothing.

PA103 - RESERVED

PA104 -Identify the components of OSHA.

PA105 - Demonstrate how to lift and carry heavy objects safely.

PA106 – Demonstrate knowledge of Safety Data Sheets (SDS) and their location in the classroom.

PA 107 Demonstrate knowledge of general ladder safety.

PA 108 Identify scaffolding and other elevated work surfaces.

PA 109 Identify classes of fires and types of fire extinguishers

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.

3.4.12.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.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.3.6.11-12.H.
Draw evidence from informational texts to support analysis, reflection, and research.

Instructional Activities:

Knowledge:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Record Job Safety Analysis
Identify the types of fire extinguishers
Identify hazardous and flammable materials
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area

Skill:

Explain the difference between compliance and best practices
Describe the purpose and function of OSHA
Explain how accident costs affect everyone on a job site
Describe proper materials handling procedures and safeguards
Demonstrate proper use of ladders according to OSHA standards
Demonstrate proper use of storage of hazardous materials
Demonstrate the use of rigging to OSHA standards
Demonstrate the use of storage of flammable material
Demonstrate the proper procedures for lifting and carrying
Demonstrate the proper use of extinguishers

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring

Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/posttest
Student self-assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Joyce, Michael A. Residential Construction Academy: Plumbing. Clifton Park, NY: Delmar/Cengage Learning, 2012. Print.

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Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

Teacher made handouts, videos, etc.

Wrench
Allen
Box-end
Open-end
Pipe
Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws

Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA200 DEMONSTRATE KNOWLEDGE OF

THE BUILDING AND PROPERTY MAINTENANCE TRAINING LAB
Unit Number: PA200

Dates: 2022 Fall **Hours: 105**

Unit Description/Objectives:

Student will know and able to identify program guidelines, tools, and equipment and follow rules and procedures.

Tasks:

PA201 - Demonstrate knowledge of BPM lab rules for behavior.

PA202 - Reserved

PA203 - Follow safety rules for tools, machines and processes.

PA204 Reserved

PA205 - Identify BPM lab tools and equipment.

PA206 - Keep daily time cards and project logs.

PA207 - Record daily units/hour records.

PA208 - Reserved

PA209 – Reserved

PA210 - Demonstrate efficient methods of storing materials and supplies.

PA211 - Accurately demonstrate the ability to use measuring devices.

PA212 - Demonstrate how to estimate quantities of materials needed for a job.

PA213 - Reserved

Standards / Assessment Anchors

Focus Standard

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

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

13.2.11B
Apply Research skills in searching for a job

Supporting Standards/Anchors

CC.3.5.11-12. B.
Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

13.1.11 A
Relate careers to individual interests, abilities and aptitudes

Instructional Activities:

Knowledge:

Write a checklist and chart for turning on and off of all tools with gages
Identify tools and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self-evaluation using rubric
Complete description sheet for each task
Job safety analysis
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Read assigned module
Maintain a clean work area

Skill:

Complete all assigned projects
Record all activities and duties
Follow all lab safety rules and practices
Demonstrate tool safety

Demonstrate the proper use of tool for a specified task
Demonstrate problem solving skills and estimation skills, real world related

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Assessment:
Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self-assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

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Teacher made handouts, videos, etc.

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Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Course Name: Building Trades Maintenance

Unit Name: PA300 PERFORM BASIC CARPENTRY AND REPAIR TASKS
Unit Number: PA300

Dates: Fall 2022 **Hours: 115**

Unit Description/Objectives:

Student will know and be able to perform basic carpentry and repair tasks.

Tasks:

PA301 - Identify common building materials.

PA302 - Read and interpret building plans.

PA303 - Prepare a bill of material.

PA304 - Layout stock.

PA305 - Layout angles.

PA306 - Find the center line of stock.

PA307 - Use a sliding T-bevel to transfer an angle.

PA308 - Transfer a cut line using a marking gauge.

PA309 - Test a level for accuracy in the vertical and horizontal positions.

PA310 - Test a horizontal surface using a level.

PA311 - Test a vertical surface using a level.

PA312 - Snap a chalk line.

PA313 – Reserved

PA314 - Bore a hole with an auger bit.

PA315 - Reserved

PA316 - Identify and select various nails for a specific job.

PA317 - Drive and remove nails using a claw hammer.

PA318 – Reserved

PA319 - Pull nails with a wrecking bar.

PA320 - Reserved

PA321 - Select and drive screw-type fasteners by hand.

PA322 – Identify anchors for masonry repair jobs.

PA323 – Reserved

PA325 – Reserved

PA326 – Reserved

PA327 – Check for square

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.11-12.I.
Synthesize information from a range of sources into a coherent understanding.

CC.3.5.9-10.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 relevant to grades 11-12 texts and topics.

Connecting Standard/Anchor

CC.3.6.11-12.H.
Draw evidence from informational texts for research.

Supporting Standard

CC.3.5.9-10.G.
Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

CC.3.5.9-10.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 9–10 texts and topics.

Instructional Activities:

Knowledge:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self-evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide

Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area

Skill:

Identify the components of a wall and ceiling layout
Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition T's, bracing and fire stops
Describe the correct procedure for assembling and erecting an exterior wall
Describe the common materials and methods used for installing sheathing on walls
Lay out, assemble, erect, and brace exterior walls for a frame building
Describe wall framing techniques used in masonry construction
explain the use of metal studs in wall framing
Describe the correct procedure for laying out a ceiling
Cut and install ceiling joists on a wood frame building
Estimate the materials required to frame walls and ceilings
Read and understand drawing and specifications to determine floor system requirements
Identify floor and sill framing and support members
Name the methods used to fasten sills to the foundation
List and recognize different types of floor joists
List and recognize different types of bridging
Explain the purpose of sub-flooring and underlayment
Match selected fasteners used in floor framing to their correct uses
Estimate the amount of material needed to frame a floor assembly
Demonstrate the ability to properly:
Layout and construct a floor assembly
Install bridging
Install joist for cantilevered floor
Install a sub-floor using butt-joint plywood/OSB panels
Name various stair finish parts and describe their location and function
Describe several stair designs
Define terms used in stair framing
Determine the unit rise and unit run of a stairway given the total rise
Layout a stair carriage and frame a straight stairway
Layout and frame a stairway with a landing
Install a two post balustrade from floor to balcony on the open end staircase

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

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Teacher made handouts, videos, etc.

Wrench:
Allen
Box-end
Open-end
Pipe
Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman

Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Combination
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA400 OPERATE PORTABLE POWER TOOLS
Unit Number: PA400

Dates: Fall 2022 **Hours: 17**

Unit Description/Objectives:
Student will know and be able to demonstrate safe use of all portable power tools.

Tasks:
PA401 - State and follow all safety rules and precautions for using portable power tools.

PA402 - Operate portable electric and battery operated drills.

PA403 - Operate a metal cutting (abrasive disc) chop saw.

PA404 - Operate a portable jigsaw and reciprocating saw.

PA405 - Operate a router.

PA406 - Operate disc grinders

PA407 – Operate an oscillating multi-tool

Standards / Assessment Anchors

Focus Standard

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

CC.3.6.11-12.C. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience

Connecting Standard

CC.3.6...11-12 C
Produce clear and coherent writing...appropriate to task, purpose, and audience.

Supporting Standard

CC.3.6.9-10.E
Use technology, including the internet, to produce, publish, and update individual or shared writing products.

CC.3.6.11-12.G.
Gather relevant information.

Instructional Activities:

Knowledge:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area

Skill:

State and follow all safety rules and precautions for using portable power tools.
Demonstrate and operate portable electric and battery operated drills properly
Demonstrate and operate a metal cutting (abrasive disc) chop saw properly
Demonstrate and operate a portable jigsaw and reciprocating saw properly
Operate a router properly
Operate disc grinders properly

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

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

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

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Teacher made handouts, videos, etc.

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Steel measuring tapes
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Squares
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Specialized plumbing tools:
Pipe wrenches
Threading dies
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Circular saw
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Specialized masonry tools:
Trowels
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Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA500 OPERATE A TABLE SAW
Unit Number: PA500

Dates: Fall 2022 **Hours: 17**

Unit Description/Objectives:

Student will know and be able to demonstrate safe use of a table saw.

Tasks:

PA501 - State and follow all safety rules and precautions for using a table saw.

PA502 - Rip stock on a table saw.

PA503 - Crosscut stock on a table saw with a miter gauge.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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

13.2.11E
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/regulations (that is Americans with Disabilities Act, child labor laws, Fair Labor Standards Act, OSHA, Material Safety Data Sheets) personal initiative, self-advocacy, scheduling/time management, team building, technical literacy, and technology

Supporting Standard

13.2.11.C.
Develop and assemble, for career portfolio placement, career acquisition documents, such as, but not limited to: Job application, Letter of appreciation following an interview, Letter of introduction, Post-secondary education/training applications, Request for letter of recommendation, Resume

13.2.11.D.
Analyze, revise, and apply an individualized career portfolio to chosen career path.

Instructional Activities:

Knowledge:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self-evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area

Skill:

Demonstrate proper use of table saw
Cut stock accurately using table saw
Crosscut stock with table saw

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Assessment:
Worksheets
Anticipation Guides
Pre/posttest
Time cards
Student self-assessment
Student written description of task
Safety sign off sheet
Student checklist
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Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Joyce, Michael A. Residential Construction Academy: Plumbing. Clifton Park, NY: Delmar/Cengage Learning, 2012. Print.

Silberstein, Eugene. Residential Construction Academy: HVAC. Clifton Park, NY: Thomson Delmar Learning, 2005. Print.

Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

http://www.cdc.gov/niosh/docs/2004-101/pdfs/Safe.pdf

Teacher made handouts, videos, etc.
Periodicals:

Wrench:
Allen
Box-end
Open-end
Pipe
Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip

Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career And Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA600 OPERATE A DRILL PRESS
Unit Number: PA600

Dates: Fall 2022 **Hours: 17**

Unit Description/Objectives:

Student will know and be able to demonstrate safe use of a drill press.

Tasks:

PA601 - State and follow all safety rules and precautions for using a drill press.

PA602 - Drill holes in metal using a drill press.

PA603 - Drill holes in non-metallic materials using a drill press.

PA604 - Reserved

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self-evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify parts of a drill press

Skill:

State and follow all safety rules and precautions for using a drill press.
Drill holes in metal using a drill press.
Drill holes in non-metallic materials using a drill press.
Sand curves and radii on a drill press.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/posttest
Time cards
Student self-assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Joyce, Michael A. Residential Construction Academy: Plumbing. Clifton Park, NY: Delmar/Cengage Learning, 2012. Print.

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Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

http://www.cdc.gov/niosh/docs/2004-101/pdfs/Safe.pdf

Teacher made handouts, videos, etc.

Contractor
Contracting Business
Wrench:
Allen
Box-end
Open-end
Pipe
Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove

Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career And Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA700 OPERATE A COMPOUND MITER SAW
Unit Number: PA700

Dates: Fall 2022 **Hours: 17**

Unit Description/Objectives:

Student will know and be able to demonstrate safe use of a compound miter saw.

Tasks:

PA701 - State and follow all safety rules and precautions for using a compound miter saw.

PA702 - Cut stock to length on a miter saw.

PA703 - Cut angles on a miter saw.

PA704 - Cut compound angles on a miter saw.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

CC.2.3.6.A.1
Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self-evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify the parts of a miter saw

Skill:

State and follow all safety rules and precautions for using a compound miter saw.
Cut stock to length using a miter saw.
Cut angles using a miter saw.
Cut compound angles using a miter saw.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary
Individual tutoring

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/posttest
Student self-assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Joyce, Michael A. Residential Construction Academy: Plumbing. Clifton Park, NY: Delmar/Cengage Learning, 2012. Print.

Silberstein, Eugene. Residential Construction Academy: HVAC. Clifton Park, NY: Thomson Delmar Learning, 2005. Print.

Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

Teacher made handouts, videos, etc.

http://www.cdc.gov/niosh/docs/2004-101/pdfs/Safe.pdf

Wrench:
Allen
Box-end
Open-end

Pipe
Crescent
Spud
Hammers:

Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA800 OPERATE A BENCH GRINDER
Unit Number: PA800

Dates: Fall 2022 **Hours: 17**

Unit Description/Objectives:

Student will know and be able to demonstrate safe use of a bench grinder.

Tasks:

PA801 - State and follow all safety rules and precautions for using a bench grinder.

PA802 - Sharpen cutting tools on a bench grinder.

PA803 - De-burr stock on a bench grinder.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

CC.2.1.6.E.4
Apply and extend previous understandings of numbers to the system of rational numbers.

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

Instructional Activities:

Knowledge:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area

Skill:

State and follow all safety rules and precautions for using a bench grinder.
Sharpen cutting tools on a bench grinder.
De-burr stock on a bench grinder.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary
Worksheets
Individual tutoring

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Joyce, Michael A. Residential Construction Academy: Plumbing. Clifton Park, NY: Delmar/Cengage Learning, 2012. Print.

Silberstein, Eugene. Residential Construction Academy: HVAC. Clifton Park, NY: Thomson Delmar Learning, 2005. Print.

Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

Teacher made handouts, videos, etc.

http://www.cdc.gov/niosh/docs/2004-101/pdfs/Safe.pdf

Wrench:
Allen
Box-end
Open-end
Pipe
Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters

Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career And Technical Information
Course Name: Building Trades Maintenance

Unit Name: PA900 PERFORM REGULAR TOOL AND MACHINE MAINTENANCE
Unit Number: PA900

Dates: Fall 2022 **Hours: 17**

Unit Description/Objectives:

Student will know and be able to demonstrate safe use and maintenance of all hand and power tools.

Tasks:

PA901 - Identify broken tools and replace or repair immediately.

PA902 - Examine power tool and extension cords for damage; replace or repair.

PA903 - Lubricate moving parts of power tools as recommended by the manufacturer.

PA904 - Replace saw blades and other cutting tool accessories when they become dull.

PA905 - Sharpen edge cutting tools

PA906 - Remove dust from power tool stators and rotors with vacuum equipment.

PA907 - Remove paint, oils, water, and lubricants from tool handles, and power tool housings and chassis.

PA908 – Examine extension cords for damage and replace or repair male/female cord ends

Standards / Assessment Anchors

Focus Standards

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.D2
Diagnose a malfunctioning system and use tools, materials, and knowledge to repair it.
3.4.10.E7
Evaluate structure design as related to function, considering such factors as style, convenience, safety, and efficiency.
3.2.12.B1
Analyze the principles of rotational motion to solve problems relating to angular momentum and torque.

Connecting Standards

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

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

CC.2.1.6.E.4
Apply and extend previous understandings of numbers to the system of rational numbers.

Instructional Activities:

Knowledge:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area

Skill:

Examine power tool and extension cords for damage; replace or repair.
Lubricate moving parts of power tools as recommended by the manufacturer.
Replace saw blades and other cutting tool accessories when they become dull.
Sharpen hand tools, chisels, and drilling or boring bits when they become dull.
Remove dust from power tool stators and rotors with vacuum equipment.
Remove paint, oils, water, and lubricants from tool handles, and power tool housings and chassis.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides

Computer assisted instruction
Checklists

Enrichment:
Continue to next assignment
Read periodicals and write a condensed summary

Safety:
Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:
Worksheets
Anticipation Guides
Pre/post test
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Joyce, Michael A. Residential Construction Academy: Plumbing. Clifton Park, NY: Delmar/Cengage Learning, 2012. Print.

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Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

Teacher made handouts, videos, etc.

Teacher made handouts, videos, etc.

Wrench:
Allen
Box-end
Open-end
Pipe
Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1000 REPAIR FLOORS
Unit Number: PA1000

Dates: Fall 2022 **Hours: 25**

Unit Description/Objectives:

Student will know and be able to demonstrate safe use of all tools used to repair floors and the proper steps to repair a floor.

Tasks:

PA1001 - Identify floor members.

PA1002 - Install joist hangers.

PA1003 - Install or replace bridging between joists.

PA1004 - Repair plywood sub-flooring on joists.

PA1005 Describe platform, balloon, and post and

beam framing.

PA1006 Layout and install sill plates.

PA1007 Layout and install floor joists and openings

PA1008 Layout and install subflooring

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area

Skill:

Identify floor members.
Install joist hangers accurately
Install or replace bridging between joists properly
Repair plywood sub-flooring on joists properly

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

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Silberstein, Eugene. Residential Construction Academy: HVAC. Clifton Park, NY: Thomson Delmar Learning, 2005. Print.

Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

Teacher made handouts, videos, etc.

Wrench:
Allen
Box-end
Open-end
Pipe
Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches

Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1100 REPAIR ROOFS
Unit Number: PA1100

Dates: Fall 2022 **Hours: 25**

Unit Description/Objectives:
Student will know and be able to construct and repair roofs.

Tasks:
PA1101 - Identify roof members.

PA1102 - Identify roof types.

PA1103 - Repair roof sheathing.

PA1104 - Install and replace asphalt shingles.

PA1105 - Remove and replace a damaged shingle.

PA1106 - Demonstrate proper application of sealing compounds and caulking.

PA1107 - Describe/demonstrate the knowledge of the repair of a flat rubber type

roof

PA1108 – Install and repair roof flashing

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

CC.2.3.7.A.1

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

Instructional Activities:

Knowledge:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify roof designs
Identify roof members

Skill:

Identify roof members.
Identify roof types.
Repair roof sheathing.
Install and replace asphalt shingles.
Remove and replace a damaged shingle.
Demonstrate proper application of sealing compounds and caulking.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

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Teacher made handouts, videos, etc.

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Sledgehammers
Screwdrivers:
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Ripping bars
Nail pullers
Cat's paw
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Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Assorted building materials:
Lumber
Nails
Pipes
Wire Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1200 REPAIR STAIRS AND STAIRCASES
Unit Number: PA1200

Dates: Fall 2022 **Hours: 25**

Unit Description/Objectives:

Student will know and be able to demonstrate safe use of all tools used to repair stairs and staircases.

Tasks:

PA1201 - Repair damage to stair stringers and carriages.

PA1202 - Repair stair risers and treads.

PA1203 - Install or repair a stair railing.

PA1204 - Describe the installation and layout of stairs stringer/horse

PA1205 – Reserved

PA1206 Repair a balustrade.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Compute a mathematical equations to figure out rise over run
Identify parts of staircase
Identify types of staircase

Skill:

Repair damage to stair stringers and carriages.
Repair stair risers and treads.
Install or repair a stair railing.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

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Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

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Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels

Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1300 INSTALL AND REPAIR DOORS AND WINDOWS
Unit Number: PA1300

Dates: Fall 2022 **Hours: 25**

Unit Description/Objectives:
Student will know and be able to install and repair doors and windows.

Tasks:
PA1301 - Install a new exterior lock set.

PA1302 - Hang an interior door.

PA1303 - Cut and install moulding.

PA1304 - Trim a door jamb and/or a window unit.

PA1305 - Trim a window, stool, apron, casing, and extension jambs.

PA1306 Cut in a gain for butt hinges and install but hinges.

PA1307 Cut in a miter using a miter saw.

PA1308 Set finish nails with a nail set.

PA1309 Assemble miter joints by nailing.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify various lock sets
Identify window designs
Identify types of moulding

Skill:

Install a new exterior lock set.
Hang an interior door.
Cut and install moulding around windows and doors
Trim a door jamb and/or a window unit.
Trim a window, stool, apron, casing, and extension jambs.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

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Teacher made handouts, videos, etc.

Wrench:
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Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters

Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1400 APPLY AND REPAIR INTERIOR WALLS
Unit Number: PA1400

Dates: Fall 2022 **Hours: 25**

Unit Description/Objectives:
The student will know and be able to install and repair interior walls.

Tasks:

PA1401 - Cut drywall with a utility knife.

PA1402 - Install drywall board.

PA1403 - Install metal corners prior to finishing drywall.

PA1404 - Tape and smooth drywall.

PA1405 - Cope an inside corner.

PA1406 - Miter an outside corner.

PA1407 - Install rubber baseboard trim.

PA1408 - Repair suspended ceiling grids and tiles.

PA1409 – Describe the installation of metal studs.

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify types of trim
Identify types of drywall
Identify different types of drywall tape
Identify parts of a suspended ceiling

Skill:

Cut drywall with a utility knife
Install drywall board
Install metal corners prior to finishing drywall
Tape and smooth drywall
Cope an inside corner
Miter an outside corner
Install rubber baseboard trim
Repair suspended ceiling grids and tiles

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.
Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

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Ball Peen
Sledgehammers
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Phillips Clutch-drive
Tors
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Ripping bars
Nail pullers
Cat's paw

Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
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Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws

Specialized masonry tools:
Trowels
Floats

Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Hand Tools. Columbus, OH: Prentice Hall.

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1500 REPAIR EXTERIOR WALLS
Unit Number: PA1500

Dates: Fall 2022 **Hours: 25**

Unit Description/Objectives:

Student will know and be able to identify and repair exterior walls.

Tasks:

PA1501 - Identify, repair or replace siding components.

PA1502 - Identify, repair and clean gutter spouting components.

PA1503 – Identify wall frame members.

PA1504 – Layout, cut, and install wall frame members and wall openings

PA1505 – Install siding underlayments, housewraps, and flashings.

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify types of exterior siding
Identify different types of gutters

Skill:

Identify, repair or replace siding components.
Identify, repair and clean gutter spouting components.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

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Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw

Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Course Name: Building Trades Maintenance

Unit Name: PA1600 DEMONSTRATE MASONRY SKILLS
Unit Number: PA1600

Dates: Fall 2022 **Hours: 42**

Unit Description/Objectives:
Student will know and be able to install and repair masonry walls.

Tasks:

PA1601 - Perform masonry work.

PA1602 - Identify common masonry tools.

PA1603 - Reserve

PA1604 - Identify safety hazards to masonry workers.

PA1605 - Reserve

PA1606 - Reserve

PA1607 - Cut block and brick with a masonry hammer.

PA1608 - Reserve

PA1609 – Reserve

PA1610 – Reserve

PA1611 - Strike off a block wall.

PA1612 - Clean mortar from block and brick work.

PA1613 - Reserve

PA1614 - Reserve

PA1615 – Reserve

PA1616 – Reserve

PA1617 – Identify anchors for masonry repair jobs.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify masonry tools and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area

Identify supplies used in masonry
Identify block types
Identify brick types
Identify standard brick bonds

Skill:

Practice safety while performing masonry work.
Demonstrate proper safety practices for masonry
Mix mortar for block work
Cut block and brick with a masonry hammer.
Check work for plumb.
Check work for level.
Check work for straightness.
Strike off a block wall.
Clean mortar from block and brick work.
Mix mortar for brick work
Cut brick and block with a brickset.

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test

Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

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Open-end
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Spud
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Ball Peen
Sledgehammers
Screwdrivers:
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Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans

Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1700 PLACE CONCRETE
Unit Number: PA1700

Dates: Fall 2022 **Hours: 42**

Unit Description/Objectives:
Student will know and be able to install and repair concrete.

Tasks:
PA1701 - Build forms for a concrete slab.

PA1702 - Mix concrete to a 1-2-3 proportion.

PA1703 - Cast a concrete slab.

PA1704 - Float concrete.

PA1705 - Finish concrete.

PA1706 - Patch steps and walkways.

PA1707 - Re-set masonry anchors.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Estimate amount of concrete needed
Identify tools for concrete work
Identify the types of concrete
Identify proper conditions for laying concrete

Skill:

Build forms for a concrete slab accurately
Mix concrete to a 1-2-3 proportion.
Cast a concrete slab properly
Float concrete properly
Finish concrete properly
Patch steps and walkways.
Re-set masonry anchors

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

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Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw

Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1800 REPAIR FLOOR AND WALL TILE
Unit Number: PA1800

Dates: Fall 2022 **Hours: 95**

Unit Description/Objectives:
Student will know and be able to identify types of tile and install and repair floor and wall tile.

Tasks:
PA1801 - Estimate the quantity of tile needed for a repair.

PA1802 - Discuss tile terminology and applications.

PA1803 - Identify adhesives and mortars.

PA1804 - List, identify and explain tile tools and equipment.

PA1805 - List and explain various methods of installing tile.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify adhesives and mortars.
Identify and explain tile tools and equipment.
Explain various methods of installing tile.
Estimate the quantity of tile needed for a repair
Identify different types of tile

Skill:

Estimate the quantity of tile needed for a repair.
Discuss tile terminology and applications.
List, identify and explain tile tools and equipment.
List and explain various methods of installing tile.
Replace broken tile
Install tile on walls and or floor
Use proper adhesive or grout for replacing and installing tile

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

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Teacher made handouts, videos, etc.

Wrench:
Allen
Box-end
Open-end
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Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Ripping bars
Nail pullers
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Chisel bars
Flat bars
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Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares:
Carpenters
Rafter
Combination

Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats

Mortar pans

Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA1900 REPAIR RESIDENTIAL ELECTRICAL CIRCUITS
Unit Number: PA1900

Dates: Fall 2022 **Hours: 95**

Unit Description/Objectives:
Student will know and be able to install and repair industrial and residential electrical circuits.

Tasks:

PA1901 - Apply the National Electric Code (NEC) to common installations.

PA1902 - Practice electrical safety.

PA1903 - Identify and use electrical tools.

PA1904 - Read and interpret electrical drawings.

PA1905 - Identify electrical symbols.

PA1906 - Understand and apply electrical theory.

PA1907 - Identify wire sizes & ampacities.

PA1908 - Identify wire types.

PA1909 - Use connectors/wire nuts to connect or splice wire.

PA1910 - Discuss proper disposal of fluorescent bulbs.

PA1911 - Change fluorescent bulbs.

PA1912 – Reserve

PA1913 - Reset an electric circuit breaker.

PA1914 - Install a ground fault circuit interrupting outlet.

PA1915 - Reserve

PA1916 – Reserve

PA1917 - Install adjustable bar hanger.

PA1918 - Install a light fixture.

PA1919 - Install a duplex receptacle.

PA1920 - Install a single pole switch.

PA1921 - Install a split wire duplex receptacle.

PA1922 - Reserved

PA1923 - Install a recessed light.
PA1924 - Install outlet boxes.
PA1925 – Reserve
PA1926 - Install Romex to boxes.
PA1927 – Reserve
PA1928 - Install a three-way switch.
PA1929 - Install a four-way switch.
PA1930 – Reserve
PA1931 - Reserve
PA1932 – Reserve
PA1933 - Install rework boxes.
PA1934 - Check and replace a 24-volt transformer.
PA1935 - Install circuit breakers.
PA1936 - Install a GFCI circuit breaker.
PA1937 - Demonstrate proper grounding techniques.
PA1938 - Reserve
PA1939 - Install low-voltage wiring.
PA1940 - Install coaxial cable for television reception.
PA1941 - Install cabling for computer work stations.
PA1942 - Replace or install a ceiling fan.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned

Participate in discussion and answer questions during lecture
Complete self-evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify electrical tools
Identify electrical symbols
Identify wire sizes & ampacities.
Identify wire types
Discuss proper disposal of fluorescent bulbs

Skill:

Apply the National Electric Code (NEC) to common installations
Practice electrical safety
Use electrical tools properly
Read and interpret electrical drawings
Understand and apply electrical theory
Use connectors/wire nuts to connect or splice wire
Change fluorescent bulbs
Replace extension cord ends - male/female
Reset an electric circuit breaker
Install a ground fault circuit interrupting outlet
properly Rough in a circuit
Install a junction box properly
Install adjustable bar hanger properly
Install a light fixture properly
Install a duplex receptacle accurately
Install a single pole switch accurately
Install a split wire duplex receptacle
Install a 220-volt circuit accurately
Install a recessed light accurately
Install outlet boxes accurately
Bore holes for wire run accurately
Install Romex to boxes accurately
Staple Romex (non-metallic cable) according to code
Install a three-way switch to code
Install a four-way switch to code
Install BX cable to boxes to code
Install conduit to boxes to code
Fish wire through conduit
Install rework boxes accurately
Check and replace a 24-volt transformer
Install circuit breakers accurately
Install a GFCI circuit breaker to code
Demonstrate proper grounding techniques
Replace a faulty circuit breaker
Install low-voltage wiring to code

Install coaxial cable for television reception to code
Install cabling for computer work stations to code
Replace or install a ceiling fan to code

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program area
Follow manufacturer's directions when using any product, tool, equipment, etc.
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Use proper safety precautions when using /operating hand tools
Use all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/posttest
Student self-assessment
Student written description of task
Safety sign off sheet
Student checklist
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Resources/Equipment:

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Teacher made handouts, videos, etc.

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Assorted building materials:
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Steel Center for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA2000 REPAIR RESIDENTIAL PLUMBING SYSTEMS
Unit Number: PA2000

Dates: Fall 2022 **Hours: 110**

Unit Description/Objectives:
Student will know and be able to install and repair residential plumbing systems.

Tasks:

PA2001 – Reserve

PA2002 – Reserve

PA2003 - Identify plumbing symbols.

PA2004 - Interpret plumbing drawings.

PA2005 - Identify types of pipes (including PEX pipe)

PA2006 - Identify plumbing pipe fittings.

PA2007 – Reserve

PA2008 - Reserve

PA2009 - Reserve

PA2010 - Sweat solder copper pipe and fittings using propane, MAPP, or Prestolite gas.

PA2011 - Install and replace copper pipe and fittings.

PA2012 - Solvent weld PVC (polyvinyl chloride) plastic pipe.

PA2013 - Install and repair PVC plastic pipe and fittings.

PA2014 - Repair waste water drains.

PA2015 - Install replace, and repair commodes.

PA2016 - Install lavatories and sinks.

PA2017 - Hook up water supply lines and waste water lines to a bathtub.

PA2018 - Install or replace a garbage disposal unit.

PA2019 - Clean and/or replace waste water traps and pipes.

PA2020 - Replace and repair a faucet set.

PA2021 - Identify and replace valves.

PA2202 – Use compression tools for copper pipe

PA2203 Install and replace PEX pipe and fittings

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self-evaluation using rubric
Complete description sheet for each task
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Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects

Maintain a notebook
Maintain a clean work area
Demonstrate tool safety

Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify plumbing symbols
Interpret plumbing drawings
Identify types of pipes
Identify plumbing pipe fittings
Identify valves

Skill:

Demonstrate knowledge of basic code regulations for water supply systems
Demonstrate knowledge of basic plumbing code regulations for waste system
Measure and cut steel pipe accurately
Thread steel pipe
Install a supply line with steel pipe and fittings
Sweat solder copper pipe and fittings using propane, MAPP, or Prestolite gas
Install and replace copper pipe and fittings
Solvent weld PVC (polyvinyl chloride) plastic pipe
Install and repair PVC plastic pipe and fittings
Repair waste water drains
Install replace, and repair commodes
Install lavatories and sinks
Hook up water supply lines and waste water lines to a bathtub
Install or replace a garbage disposal unit
Clean and/or replace waste water traps and pipes
Replace and repair a faucet set
Identify and replace valves
Install supply lines with PEX piping

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Ham, Robert B. Residential Construction Academy: Masonry: Brick and Block Construction. Print.

Huth, Mark W. Residential Construction Academy: Basic Principles for Construction. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

Joyce, Michael A. Residential Construction Academy: Plumbing. Clifton Park, NY: Delmar/Cengage Learning, 2012. Print.

Silberstein, Eugene. Residential Construction Academy: HVAC. Clifton Park, NY: Thomson Delmar Learning, 2005. Print.

Vogt, Floyd. Residential Construction Academy: Carpentry. Clifton Park, NY: Thomson/Delmar Learning, 2007. Print.

Teacher made handouts, videos, etc.

Wrench
Allen
Box-end
Open-end
Pipe
Crescent
Spud
Hammers:
Claw
Ball Peen
Sledgehammers
Screwdrivers:
Slotted
Phillips Clutch-drive
Tors
Allen
Ripping bars
Nail pullers
Cat's paw
Chisel bars
Flat bars
Wrecking bar
Pliers:
Slip-joint
Lineman
Vise- grip
Long-nose
Tongue-and-Groove
Rulers:
Steel measuring tapes
Steel flat rulers
Wooden folding rulers
Squares
Carpenters
Rafter
Try
Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches

Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA2100 APPLY FINISHING MATERIALS
Unit Number: PA2100

Dates: Fall 2022 **Hours: 60**

Unit Description/Objectives:
Student will know and be able to prepare, protect, and finish materials through various methods.

Tasks:

PA2101 - Demonstrate methods for protecting furniture, materials and surrounding surfaces from overspray and paint spatter.

PA2102 - Demonstrate procedures for taping door and window trim to protect them from finishing materials being applied.

PA2103 - Demonstrate how to prepare a surface prior to applying a finish.

PA2104 - Stain wood surfaces with wiping oil stains.

PA2105 - Apply a finish material with a brush and a roller.

PA2106 – Reserve

PA2107 - Apply oil base paints.

PA2108 - Apply acrylic based paints.

PA2109 - Reserve

PA2110 - Demonstrate proper procedures for cleaning paint brushes and rollers.

PA2111 – Investigate the use of high velocity low pressure (HVLP) spray painters.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify different types of wall coverings
Identify different types of paints
Identify different types of paint finishes
Identify different types of finishing tools
Identify different types of stains
Identify different cleaning solvents

Skill:

Demonstrate methods for protecting furniture, materials and surrounding surfaces from overspray and paint spatter
Demonstrate procedures for taping door and window trim to protect them from finishing materials being applied
Demonstrate how to prepare a surface prior to applying a finish
Stain wood surfaces with wiping oil stains
Apply a finish material with a brush and a roller
Apply a finishing material with a suction-type spray gun
Apply oil base paints
Apply acrylic based paints
Apply a spray finish
Demonstrate proper procedures for cleaning paint brushes and rollers

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

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Steel measuring tapes
Steel flat rulers
Wooden folding rulers
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Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA2200 DEMONSTRATE SKILL IN MECHANICS
Unit Number: PA2200

Dates: Fall 2022 hours 66

Unit Description/Objectives:
Student will know and be able to repair different machines.

Tasks:
PA2201 - Identify safety hazards common to machines.

PA2202 - Practice safety while working on/with machines.

PA2203 - Clean mechanical devices.

PA2204 - Lubricate machines.

PA2205 - Make machine adjustments for jobs.

PA2206 - Adjust belt tension.

PA2207 - Define and discuss friction and lubrication.

PA2208 - Perform periodic maintenance.

PA2209 - Troubleshoot machine problems.

PA2210 - Repair/replace faulty parts.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

- Write a checklist and chart for turning on and off of all tools with gages
- Identify tool and model the use of the tool
- Complete task sheet assigned
- Participate in discussion and answer questions during lecture
- Complete self evaluation using rubric
- Complete description sheet for each task
- Maintain time card
- Read reference material as needed
- Interpret and review the reference orally to the instructor
- Complete anticipation guide
- Complete reading strategy assignment
- Participate in group activity
- Complete assigned individual and group projects
- Present and review grading rubrics for projects
- Maintain a notebook
- Maintain a clean work area
- Demonstrate tool safety
- Demonstrate the proper use of tool for a specified task
- Read assigned module
- Maintain a clean work area
- Identify types of machines
- Identify different types of motors used on machines
- Identify different types of belts
- Identify different types of pulleys
- Identify different types of lubricants

Skill:

- Identify safety hazards common to machines
- Practice safety while working on/with machines
- Clean mechanical devices
- Lubricate machines
- Make machine adjustments for jobs
- Adjust belt tension
- Define and discuss friction and lubrication
- Perform periodic maintenance
- Troubleshoot machine problems
- Repair/replace faulty parts

Remediation:

- Re-teach major concepts
- Review with teacher assistance
- Study group
- Worksheets
- Individual tutoring

Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.

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Teacher made handouts, videos, etc.

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Steel measuring tapes
Steel flat rulers
Wooden folding rulers

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Combination
Micrometers
Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
Floats
Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Hand Tools. Columbus, OH: Prentice Hall.

Fletcher. G. (2004). Residential Construction Academy House Wiring. Clifton Park, NY:

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA2300 DEMONSTRATE SAFE USE OF A PORTABLE CIRCULAR SAW
Unit Number: PA2300

Dates: Fall 2022 **Hours: 17**

Unit Description/Objectives:

Student will know and be able to use proper safety practices and techniques when using a portable circular saw.

Tasks:

PA2301 - State and follow all safety rules and precautions for using a portable circular saw.

PA2302 - Rip stock with a portable circular saw.

PA2303 - Cut wood stock across its grain using a portable circular saw.

PA2304 - Cut miters with a portable circular saw.

PA2305 – Plunge cut with a portable circular saw.

Standards / Assessment Anchors

Focus Standard

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 Standard

CC.3.5.9-10.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 9–10 texts and topics.

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.

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify parts of a circular saw
Identify safety procedures when operating saw

Skill:

State and follow all safety rules and precautions for using a portable circular saw
Rip stock with a portable circular saw
Cut wood stock across its grain using a portable circular saw
Cut miters with a portable circular saw

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
Anticipation Guides
Pre/post test
Time cards
Student self assessment
Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
Notebook

Resources/Equipment:

Fletcher, Greg. Residential Construction Academy: House Wiring. Clifton Park, NY: Thomson/Delmar Learning, 2004. Print.
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Teacher made handouts, videos, etc.

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Cat's paw
Chisel bars
Flat bars
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Calipers
Levels
Specialized plumbing tools:
Pipe wrenches
Threading dies
Specialized carpentry tools:
Circular saw
Saber saw
Specialized electrical tools:
Wire strippers
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Specialized masonry tools:
Trowels
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Mortar pans
Specialized refrigeration equipment:
Vacuum pumps
Refrigeration recovery machine
Assorted building materials:
Lumber
Nails
Pipes
Wire
Bricks
Blocks

Hand Tools. Columbus, OH: Prentice Hall.

Fletcher. G. (2004). Residential Construction Academy House Wiring. Clifton Park, NY:

Steel Center Area for Career and Technical Education
Course Name: Building Trades Maintenance

Unit Name: PA2400 SERVICE ENVIRONMENTAL CONTROL SYSTEMS
Unit Number: PA2400

Dates: Fall 2022 **Hours: 90**

Unit Description/Objectives:
Student will know and be able to install and service environmental control systems.

Tasks:
PA2401 - Identify the scales on a thermometer.

PA2402 – Reserve

PA2403 - Define BTU (British Thermal Unit).

PA2404 - Describe types of heat transfer.

PA2405 - Identify the components of a gas fuel heating system.

PA2406 - Identify the components of an oil fuel heating system.

PA2407 – Describe filter replacement requirements for forced air

systems

PA2408 – Replace a thermostat.

Standards / Assessment Anchors

Focus Standard

CC.3.5.9-10.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 9–10 texts and topics.

Supporting Standard
CC.3.5.11-12.A.
Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
Connecting Standard

CC.3.5.9-10.B.
Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.
Supporting Standard

Connecting Standard

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 Standard

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:

Write a checklist and chart for turning on and off of all tools with gages
Identify tool and model the use of the tool
Complete task sheet assigned
Participate in discussion and answer questions during lecture
Complete self evaluation using rubric
Complete description sheet for each task
Maintain time card
Read reference material as needed
Interpret and review the reference orally to the instructor
Complete anticipation guide
Complete reading strategy assignment
Participate in group activity
Complete assigned individual and group projects
Present and review grading rubrics for projects
Maintain a notebook
Maintain a clean work area
Demonstrate tool safety
Demonstrate the proper use of tool for a specified task
Read assigned module
Maintain a clean work area
Identify the scales on a thermometer
Describe atmospheric pressure and how it is measured
Define BTU (British Thermal Unit)
Describe types of heat transfer
Identify the components of a gas fuel heating system
Identify the components of an oil fuel heating system
Identify the components of an AC system

Skill:

Demonstrate proper procedures for balancing an AC system
Demonstrate proper procedure for balancing gas fuel heating system
Demonstrate proper procedure for balancing oil heating system
Demonstrate proper procedure for balancing heat pumps

Remediation:

Re-teach major concepts
Review with teacher assistance
Study group
Worksheets
Individual tutoring
Group tutoring
Peer tutoring
Study groups
Reading comprehension packets
Technology integration
Study guides
Computer assisted instruction
Checklists

Enrichment:

Continue to next assignment
Read periodicals and write a condensed summary

Safety:

Student must:
Complete safety instruction related to the program 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
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 all safety lock out /tag-out procedures, use OSHA standards, personal protection equipment, safety classes, shoes, and hard hat

Assessment:

Worksheets
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Student written description of task
Safety sign off sheet
Student checklist
Grading rubrics for projects
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Resources/Equipment:

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Nail pullers

Cat's paw
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Flat bars
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Pliers:
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Wire strippers
Meters
Hole saws
Specialized masonry tools:
Trowels
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Mortar pans
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