



Park Hill School District

Building Successful Futures • Each Student • Every Day

High School Home Maintenance Curriculum

Course Description: A study of repairs that are commonly undertaken by the average homeowner. Hands on learning experiences may include drywall, ceramic tile, house wiring, plumbing repairs, basic automotive maintenance, small engine repairs, woodworking, and cabinetry. This course counts as 1 practical art credit.

Scope and Sequence:

Timeframe	Unit	Instructional Topics
3 weeks	Safety	Topic 1: General Safety
5 weeks	Woodworking	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook
2 weeks	Framing	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook
1 week	Plumbing	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook
1 week	Electrical	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook
1 week	Drywall	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook
1 week	Tile	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook
1 week	HVAC	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook
1 week	Concrete	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook
1 week	Blueprint	Topic 1: Knowledge and Preparation Topic 2: Application Topic 3: Career Pathway and Job Outlook

Unit 1: Safety

Subject: Home Maintenance

Grade: 9-12

Name of Unit: Safety

Length of Unit: 3 weeks

Overview of Unit: The students will be able to safely use the hand and power tools in located in the Technology Education lab to design and build various projects.

Priority Standards for unit:

- BuildingMaintenance.A02 Identify safe work site procedures/practices, including fall protection and confined spaces
- BuildingMaintenance.A06 Identify power tools
- BuildingMaintenance.A05 Identify hand tools
- MCE.CPCT.AC Demonstrate the ability to safely use power tools

Supporting Standards for unit:

- BuildingMaintenance.A04 Identify fire safety equipment
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.
- MCE.CPCT.AC Use materials safely.
- MCE.CPCT.AC Follow safe practices relating to environmental hazards.
- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A02 Identify safe work site procedures/practices, including fall protection and confined spaces

Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify safe work site procedures/practices, including fall protection and confined spaces	1
	Remember

Priority Standard: BuildingMaintenance.A06 Identify power tools

Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify power tools	1
	Remember

Priority Standard: BuildingMaintenance.A05 Identify hand tools

Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify hand tools	1
	Remember

Priority Standard: MCE.CPCT.AC Demonstrate the ability to safely use power tools	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can demonstrate the ability to safely use power tools	2
	Apply

Essential Questions:

1. What actions can be taken to prevent accidents on the worksite?
2. How are unsafe work habits/environments recognized and mitigated?
3. How are different types of materials safely and appropriately handled?
4. What are the basic methods for safely working with hand and power tools?
5. How are unsafe work habits/environments recognized and mitigated?

Enduring Understanding/Big Ideas:

1. Students will learn how to safely use a variety of hand and power tools.
2. Students will investigate career outlook, education requirements, and salary related to the safety industry.
3. Students will utilize proper procedure to successfully and safely use the power and hand tools in the lab.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Safety margin Obstruction Kick back area Guard Debris Stock Feed rate Depth of cut Power disconnect Defect Safety glasses

Topic 1: General Safety

Title: Tool Identification

Suggested Length of Time: 2 days

Standards Addressed

Priority:

- BuildingMaintenance.A06 Identify power tools
- BuildingMaintenance.A05 Identify hand tools

Supporting:

- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Detailed Description/Instructions: Students will complete various activities involving the use and identification of power and hand tools used in the Home Maintenance lab.

Bloom's Levels: Remember

Webb's DOK: Level 1

Engaging Experience 2

Title: Power Tool Safety

Suggested Length of Time: 5 days

Standards Addressed

Priority:

- BuildingMaintenance.A02 Identify safe work site procedures/practices, including fall protection and confined spaces
- MCE.CPCT.AC Demonstrate the ability to safely use power tools

Supporting:

- BuildingMaintenance.A04 Identify fire safety equipment
- MCE.CPCT.AC Use materials safely.
- MCE.CPCT.AC Follow safe practices relating to environmental hazards.
- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.

Detailed Description/Instructions: Students will engage in various activities regarding the safe use of power tools. Activities include videos, worksheets, demonstrations and tests.

Bloom's Levels: Apply

Webb's DOK:

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) Students will pass a series of safety tests in order to move into the shop where they will put their safety knowledge into practice while using power tools.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
General Safety	Tool Identification	Students will complete various activities involving the use and identification of power and hand tools used in the Home Maintenance lab.	2 days
General Safety	Power Tool Safety	Students will engage in various activities regarding the safe use of power tools. Activities include videos, worksheets, demonstrations and tests.	5 days

Unit 2: Woodworking

Subject: Home Maintenance

Grade: 9-12

Name of Unit: Woodworking

Length of Unit: 5 weeks

Overview of Unit: The students will identify basic tools and equipment used in the woodworking trade. Students will identify and describe materials used in woodworking, understand basic techniques, and design and build various woodworking projects. Students will also explore the applied mathematics of woodworking.

Priority Standards for unit:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields
- BuildingMaintenance.A07 Identify measuring instruments
- BuildingMaintenance.A02 Identify safe work site procedures/practices, including fall protection and confined spaces
- BuildingMaintenance.A03 Identify emergency first aid procedures, including MSDS (material safety data sheets)
- BuildingMaintenance.A12 Identify anchors and fasteners
- BuildingMaintenance.F01 Demonstrate finishing safety practices
- BuildingMaintenance.F02 Prepare surface for finish
- BuildingMaintenance.F03 Select finishing materials
- BuildingMaintenance.F08 Clean and properly store finishing equipment and materials
- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade.

Supporting Standards for unit:

- MCE.CPCT.AC Estimate materials and supplies needed.
- MCE.CPCT.AC Calculate ratios, fractions, and proportion measures.
- MCE.CPCT.AC Use ratios, fractions, and proportion measures to perform measurement tasks.
- MCE.CPCT.AC Use appropriate formulas to determine measurements of dimensions, spaces, and structures.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using U.S. Standard unit.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using Metric units.
- MCE.CPCT.AC Use dimensions, spaces, and structures calculations to estimate materials and supplies needed.
- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.

- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.
- MCE.CPCT.AC Estimate resources/materials required for a specific project or problem.
- MCE.CPCT.AC Estimate correct amount of required resources/materials.
- MCE.CPCT.AC Create a budget.
- MCE.CPCT.AC Use materials safely.
- MCE.CPCT.AC Interpret drawings used in project planning.
- MCE.CPCT.AC Recognize elements and symbols of blueprints and drawings.
- MCE.CPCT.AC Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work.
- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A01 Identify building maintenance occupations and related fields	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify building maintenance occupations and related fields	1
	Remember

Priority Standard: BuildingMaintenance.A07 Identify measuring instruments	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify measuring instruments	1
	Remember

Priority Standard: BuildingMaintenance.A02 Identify safe work site procedures/practices, including fall protection and confined spaces	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify safe work site procedures/practices, including fall protection and confined spaces	1
	Remember

Priority Standard: BuildingMaintenance.A03 Identify emergency first aid procedures, including MSDS (material safety data sheets)	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify emergency first aid procedures, including MSDS (material safety data sheets) \	1
	Remember

Priority Standard: BuildingMaintenance.A12 Identify anchors and fasteners	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify anchors and fastners	1
	Remember

Priority Standard: BuildingMaintenance.F01 Demonstrate finishing safety practices	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can demonstrate finishing safety practices	2
	Apply

Priority Standard: BuildingMaintenance.F02 Prepare surface for finish	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can prepare surface for finish	2
	Apply

Priority Standard: BuildingMaintenance.F03 Select finishing materials	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can select finishing materials	2
	Analyze

Priority Standard: BuildingMaintenance.F08 Clean and properly store finishing equipment and materials	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can clean and properly store finishing equipment and materials	2
	Apply

Priority Standard: MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade.	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify some of the basic hand tools and their proper uses in the construction trade	2
	Apply

Essential Questions:

1. How does knowledge and preparation of measurement, techniques and tools apply to accurately and successfully create a woodworking project?
2. How does outlook, education, and salary determine the probability of employment in the woodworking industry?
3. How can the procedure be utilized in order to properly create a woodworking project?

Enduring Understanding/Big Ideas:

1. Students will have knowledge of required materials, fixtures, tools and system operation/function in order to create a woodworking project.
2. Students will investigate career outlook, education requirements, and salary related to the woodworking industry.
3. Students will utilize proper procedure to successfully create a woodworking project.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Casing Combination square Countersink Edge-bander Electric Drill Power miter saw Router System hole jig Table saw Radial arm saw Band saw Jointer

Topic 1: Knowledge and Preparation

Engaging Experience 1

Title: Measurement

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A07 Identify measuring instruments
- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade.

Supporting:

- MCE.CPCT.AC Use a standard ruler, a metric ruler, and a measuring tape to measure.
- MCE.CPCT.AC Use basic math functions to complete jobsite/workplace tasks.
- MCE.CPCT.AC Estimate materials and supplies needed.
- MCE.CPCT.AC Calculate ratios, fractions, and proportion measures.
- MCE.CPCT.AC Use ratios, fractions, and proportion measures to perform measurement tasks.
- MCE.CPCT.AC Use appropriate formulas to determine measurements of dimensions, spaces, and structures.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using U.S. Standard unit.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using Metric units.
- MCE.CPCT.AC Use dimensions, spaces, and structures calculations to estimate materials and supplies needed.
- MCE.CPCT.AC Estimate resources/materials required for a specific project or problem.
- MCE.CPCT.AC Estimate correct amount of required resources/materials.
- MCE.CPCT.AC Create a budget.

Detailed Description/Instructions: Students will complete a measurement activity to determine board feet and apply a cost to their project. The “ruler game” may be used to explore measurement concepts.

Bloom’s Levels: Apply

Webb’s DOK: 1

Engaging Experience 2

Title: Board preparation

Suggested Length of Time: 1-5 days

Standards Addressed

Priority:

- MCE.CPCT.AC Identify various types of building materials and their uses.
- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.

Supporting:

- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.

Detailed Description/Instructions: Students will choose proper materials for their project and measure/cut to length. The appropriate selection of materials will depend on the project that students are completing.

Bloom's Levels: Apply

Webb's DOK: 1

Topic 2: Application

Engaging Experience 1

Title: Shape, size, sanding

Suggested Length of Time: 1-5 days

Standards Addressed

Priority:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.
- MCE.CPCT.AC Interpret drawings used in project planning.

Supporting:

- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.

Detailed Description/Instructions: Students cut material to appropriate shape and size for the project and sand it. Students will use appropriate tools to cut the material and follow a pattern to create the correct shapes.

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 2

Title: Assemble

Suggested Length of Time: 1-10 days

Standards Addressed

Priority:

- MCE.CPCT.AC Interpret and use drawing dimensions to assemble a project

Detailed Description/Instructions: Students will assemble their project based on project specifications. Smaller projects will take less time to assemble than larger projects.

Bloom's Levels: Analyze

Webb's DOK: 2

Engaging Experience 3

Title: Stain and finish

Suggested Length of Time: 1-3 days

Standards Addressed

Priority:

- BuildingMaintenance.F02 Prepare surface for finish
- BuildingMaintenance.F03 Select finishing materials

Supporting:

- BuildingMaintenance.F08 Clean and properly store finishing equipment and materials
- BuildingMaintenance.F01 Demonstrate finishing safety practices

Detailed Description/Instructions: Students will stain and finish their projects. Staining and finishing may depend upon personal preferences, project specifications, or customer request. **Bloom's Levels:** Apply

Webb's DOK: 2

Topic 3: Career Pathway and Job Outlook

Engaging Experience 1

Title: Career Pathway and Job Outlook

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields

Supporting:

Detailed Description/Instructions: Students will complete an activity covering job outlook, education requirements, and salary in the woodworking field

Bloom's Levels: Remember

Webb's DOK: 1

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) Students will create a variety of possible woodworking projects using safe practices, appropriate tool and material selection, and finishing techniques. Student projects may include a key holder, cutting board, toolbox, shelf, stool, ink pen, and/or Adirondack Chair.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
Knowledge and Preparation	Measurement	Students will complete a measurement activity to determine board feet and apply a cost to their project. The “ruler game” may be used to explore measurement concepts.	1 day
Knowledge and Preparation	Board Preparation	Students will choose proper materials for their project and measure/cut to length. The appropriate selection of materials will depend on the project that students are completing.	1-5 days
Application	Shape, size, sanding	Students cut material to appropriate shape and size for the project and sand it. Students will use appropriate tools to cut the material and follow a pattern to create the correct shapes.	1-5 days
Application	Assemble	Students will assemble their project based on project specifications. Smaller projects will take less time to assemble than larger projects.	1-10 days
Application	Stain and finish	Students will stain and finish their projects. Staining and finishing may depend upon personal preferences, project specifications, or customer request.	1-3 days
Career Pathway and Job Outlook	Career Pathway and Job Outlook	Students will complete an activity covering job outlook, education requirements, and salary in the woodworking field.	1 day

Unit 3: Plumbing

Subject: Home Maintenance

Grade: 9-12

Name of Unit: Plumbing

Length of Unit: 1 week

Overview of Unit: The students will learn how to cut and connect three types of pipe. You will prepare and solder copper pipe, flexible and rigid plastic for water. Additionally, you will explore the different applications for ABS and PVC plastic pipe. You will also assemble a drain-waste-vent system; install a sink with taps, tubes and drain; install a toilet with base assembly.

Priority Standards for unit:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields
- Plumbing.C02 Cut, clean, and glue plastic pipe
- Plumbing.C03 Cut, clean, and solder copper pipe
- Plumbing.C04 Cut and thread metal pipe
- Plumbing.C08 Replace/repair/ plumbing fixtures (e.g., stool, urinal, tub)
- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade
- MCE.CPCT.AC Recognize and identify some of the materials used in the plumbing trade
- MCE.CPCT.AC Assemble a drain waste vent system and P-trap

Supporting Standards for unit:

- Plumbing.C01 Demonstrate plumbing safety practices
- Plumbing.C06 Assemble a compression fitting
- Plumbing.C07 Rough-in plumbing fixtures
- Plumbing.C13 Replace/repair/install plumbing accessories
- Plumbing.C11 Clean traps, drains, and vents
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.
- MCE.CPCT.AC Operate tools, machinery, and equipment in a safe manner.
- MCE.CPCT.AC Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work.
- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A01 Identify building maintenance occupations and related fields	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify building maintenance occupations and related fields	1
	Remember

Priority Standard: Plumbing.C02 Cut, clean, and glue plastic pipe	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can cut, clean, and glue plastic pipe	1
	Apply

Priority Standard: Plumbing.C03 Cut, clean, and solder copper pipe	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can cut, clean, and solder copper pipe	1
	Apply

Priority Standard: Plumbing.C04 Cut and thread metal pipe	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can cut and thread metal pipe	1
	Apply

Priority Standard: Plumbing.C08 Replace/repair/ plumbing fixtures (e.g., stool, urinal, tub)	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can replace/repair/ plumbing fixtures (e.g., stool, urinal, tub)	1
	Apply

Priority Standard: MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can recognize and identify some of the basic hand tools and their proper uses in the construction trade	1
	Remember

Priority Standard: MCE.CPCT.AC Recognize and identify some of the materials used in the plumbing trade	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can recognize and identify some of the materials used in the plumbing trade	1
	Remember

Priority Standard: MCE.CPCT.AC Assemble a drain waste vent system and P-trap	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can assemble a drain waste vent system and P-trap	1
	Apply

Essential Questions:

1. How does knowledge and preparation of measurement, techniques and tools apply to accurately and successfully installing a plumbing fixture?
2. How does outlook, education, and salary determine the probability of employment in the plumbing industry?
3. How can the procedure be utilized in order to properly install a plumbing fixture?

Enduring Understanding/Big Ideas:

1. Students will have knowledge of required materials, fixtures, tools and system operation/function in order to install a plumbing fixture.
2. Students will investigate career outlook, education requirements, and salary related to the plumbing industry.
3. Students will utilize proper procedure to successfully install a plumbing fixture.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Adjustable wrench Flat file Iron pipe reamer No-hub wrench Pipe cleaning brush Pipe cutter Pipe threading die Pipe wrench Propane torch Tubing cutter

Topic 1: Knowledge and Preparation

Engaging Experience 1

Title: Plumbing Tools, Materials and Vocabulary

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade
- MCE.CPCT.AC Recognize and identify some of the materials used in the plumbing trade

Supporting:

- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Detailed Description/Instructions: Students will complete an activity identifying the different types of tools

Bloom's Levels: Remember

Webb's DOK: Level 1

Topic 2: Application

Engaging Experience 1

Title: Cutting and Joining Pipe

Suggested Length of Time: 2 days

Standards Addressed

Priority:

- Plumbing.C02 Cut, clean, and glue plastic pipe
- Plumbing.C03 Cut, clean, and solder copper pipe
- Plumbing.C04 Cut and thread metal pipe

Supporting:

- Operate tools, machinery, and equipment in a safe manner.

Detailed Description/Instructions: Students will cut, clean, and glue plastic pipe, copper pipe and cut and thread metal pipe.

Bloom's Levels: Apply

Webb's DOK: Level 2

Engaging Experience 2

Title: Installing a DWV and P-trap

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- MCE.CPCT.AC Assemble a drain waste vent system and P-trap

Supporting:

- MCE.CPCT.AC Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work.
- MCE.CPCT.AC Operate tools, machinery, and equipment in a safe manner.

Detailed Description/Instructions: Students will cut, clean, and glue plastic pipe, copper pipe and cut and thread metal pipe.

Bloom's Levels: Apply

Webb's DOK: Level 2

Engaging Experience 3

Title: Installing Plumbing Fixtures

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- Plumbing.C08 Replace/repair/ plumbing fixtures (e.g., stool, urinal, tub)

Supporting:

- MCE.CPCT.AC Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work.
- MCE.CPCT.AC Operate tools, machinery, and equipment in a safe manner.

Detailed Description/Instructions: Students will install a toilet and tank assembly

Bloom's Levels: Apply

Webb's DOK: Level 2

Topic 3: Career Pathway and Job Outlook

Engaging Experience 1

Title: Career Pathway and Job Outlook

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- Building Maintenance.A01 Identify building maintenance occupations and related fields

Supporting:

Detailed Description/Instructions: Students will complete an activity covering job outlook, education requirements, and salary in the plumbing industry.

Bloom's Levels: Remember

Webb's DOK:

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) Students will use what they have learned to complete three performance tasks including cutting and joining pipe, disassembly/assembly of DWV and the installation of a plumbing fixture.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
Knowledge and Preparation	Plumbing Tools, Materials and Vocabulary	Students will complete an activity identifying the different types of tools	1 day
Application	Cutting and joining pipe	Students will cut, clean, and glue plastic pipe, copper pipe and cut and thread metal pipe.	2 days
Application	Installing a DWV and P- Trap	Students will cut, clean, and glue plastic pipe, copper pipe and cut and thread metal pipe.	1 day
Application	Installing plumbing fixtures	Students will install a toilet and tank assembly	1 day
Career Pathway and Job Outlook	Career Pathway and Job Outlook	Students will complete an activity covering job outlook, education requirements, and salary in the plumbing industry.	1 day

Unit 4: Electrical

Subject: Home Maintenance

Grade: 9-12

Name of Unit: Electrical

Length of Unit: 1 week

Overview of Unit: The students will explore the types of wire and connections used in typical residential electrical installations. While carefully following the onscreen video instruction, students will use a low voltage (12 volt) portable electrical panel to wire a typical duplex residential outlet, switch loop, and a three-way switch. Additionally, students will learn how to add a circuit.

Priority Standards for unit:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields
- BuildingMaintenance.D01 Demonstrate electrical safety practices
- BuildingMaintenance.D06 Use electrical test equipment (e.g., VOM/amp)
- BuildingMaintenance.D04 Wire circuits of 120C and 240V according to code
- MCE.CPCT.AC Use Ohm's law to calculate the current, voltage, and resistance in a circuit.
- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade.

Supporting Standards for unit:

- BuildingMaintenance.D02 Troubleshoot and replace outlets, switches, fuses, conductors, breakers, and fixtures
- BuildingMaintenance.D05 Wire a low-voltage circuit using a schematicMCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A01 Identify building maintenance occupations and related fields	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify building maintenance occupations and related fields	1
	Remember

Priority Standard: BuildingMaintenance.D01 Demonstrate electrical safety practices	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can demonstrate electrical safety practices	2
	Apply

Priority Standard: BuildingMaintenance.D06 Use electrical test equipment (e.g., VOM/amp)	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can use electrical test equipment (e.g., VOM/amp)	2
	Apply

Priority Standard: BuildingMaintenance.D04 Wire circuits of 120C and 240V according to code	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can wire circuits of 120C and 240V according to code	2
	Apply

Priority Standard: MCE.CPCT.AC Use Ohm's law to calculate the current, voltage, and resistance in a circuit.	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can use Ohm's law to calculate the current, voltage, and resistance in a circuit.	2
	Apply

Priority Standard: MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can recognize and identify some of the basic hand tools and their proper uses in the construction trade	1
	Remember

Essential Questions:

1. How does knowledge and preparation of measurement, materials, and tools apply to accurately and successfully completing an electrical circuit.
2. How do the job outlook, training requirements, and salary determine the probability of employment as an electrician?
3. How can the procedure be utilized in order to properly wire a circuit?

Enduring Understanding/Big Ideas:

1. Students will have knowledge of required materials, fixtures, tools and system operation/function in order to create an electrical circuit.
2. Students will investigate career outlook, education requirements, and salary related to the field of electrician.
3. Students will utilize proper procedure to successfully wire an electrical circuit

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Cable stripper Diagonal wire cutters Digital multimeter Lineman's pliers Needle nose pliers Phillips screwdriver Slotted screwdriver Wire stripper

Topic 1: Knowledge and Preparation

Engaging Experience 1

Title: Vocabulary, tools and materials

Suggested Length of Time: 1-2 days

Standards Addressed

Priority:

- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade.

Supporting:

- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Detailed Description/Instructions: Students will engage in a variety of activities to learn the vocabulary, tools and materials necessary to perform the tasks involved in the electrical module.

Bloom's Levels: Remember

Webb's DOK: 1

Topic 2: Application

Engaging Experience 1

Title: The Taylor Home Project

Suggested Length of Time: 4-5 days

Standards Addressed

Priority:

- BuildingMaintenance.D01 Demonstrate electrical safety practices
- BuildingMaintenance.D06 Use electrical test equipment (e.g., VOM/amp)
- BuildingMaintenance.D04 Wire circuits of 120C and 240V according to code
- MCE.CPCT.AC Use Ohm's law to calculate the current, voltage, and resistance in a circuit.

Supporting:

- MCE.CPCT.AC Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.

Detailed Description/Instructions: The students will wire multiple circuits including receptacles and switches.

Bloom's Levels: Analyze

Webb's DOK: 2

Topic 3: Career Pathway and Job Outlook

Engaging Experience 1

Title: Career Pathway and Job Outlook

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields

Supporting:

Detailed Description/Instructions: Students will complete an activity covering job outlook, education requirements, and salary in the electrical industry.

Bloom's Levels: Remember

Webb's DOK: 1

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) Students will use what they have learned to wire three separate circuits: a switch with a light, a switch with an outlet and a light, and a three-way switch.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
Knowledge and Preparation	Vocabulary, Tools and Materials	Students will engage in a variety of activities to learn the vocabulary, tools and materials necessary to perform the tasks involved in the electrical module.	1-2 days
Application	The Taylor Home Project	The students will wire multiple circuits including receptacles and switches.	4-5 days
Career Pathway and Job Outlook	Career Pathway and Job Outlook	Students will complete an activity covering job outlook, education requirements, and salary in the electrical industry.	1 day

Unit 5: Drywall

Subject: Home Maintenance

Grade: 9-12

Name of Unit: Drywall

Length of Unit: 1 week

Overview of Unit: The students will assemble a steel stud wall as the basis for the rest of the activities. Using an abrasive saw and steel studs, students will measure and cut stud sections and then fasten them in place with a drill and screws. After squaring the wall, students will cut and hang drywall pieces to form a butt joint, taper joint, and inside and outside corners. Students will then apply tape, fit corner beading, and apply joint filler. Students will also sand and apply different types of decorative finish.

Priority Standards for unit:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields
- BuildingMaintenance.E02 Repair drywall/plaster walls
- BuildingMaintenance.E03 Replace/repair interior walls
- BuildingMaintenance.A12 Identify anchors and fasteners
- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses
- MCE.CPCT.AC Recognize and identify the materials used to cover the interior walls of a house

Supporting Standards for unit:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Use basic math functions to complete jobsite/workplace tasks.
- MCE.CPCT.AC Estimate materials and supplies needed.
- MCE.CPCT.AC Calculate ratios, fractions, and proportion measures.
- MCE.CPCT.AC Use ratios, fractions, and proportion measures to perform measurement tasks.
- MCE.CPCT.AC Use appropriate formulas to determine measurements of dimensions, spaces, and structures.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using U.S. Standard unit.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using Metric units.

- MCE.CPCT.AC Use dimensions, spaces, and structures calculations to estimate materials and supplies needed.
- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A01 Identify building maintenance occupations and related fields	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify building maintenance occupations and related fields	1
	Remember

Priority Standard: BuildingMaintenance.E02 Repair drywall/plaster walls	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can repair drywall/plaster walls	3
	Apply

Priority Standard: BuildingMaintenance.E03 Replace/repair interior walls	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can replace/repair interior walls	3
	Apply

Priority Standard: BuildingMaintenance.A12 Identify anchors and fasteners	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify anchors and fasteners	1
	Remember

Priority Standard: MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can recognize and identify some of the basic hand tools and their proper uses in the construction trade	1
	Remember

Priority Standard: MCE.CPCT.AC Recognize and identify the materials used to cover the interior walls of a house	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can recognize and identify the materials used to cover the interior walls of a house	1
	Remember

Essential Questions:

1. How does knowledge and preparation of measurement, techniques and tools apply to accurately and successfully install drywall?
2. How does outlook, education, and salary determine the probability of employment in the drywall industry?
3. How can the procedure be utilized in order to properly install and finish drywall?

Enduring Understanding/Big Ideas:

1. Students will have knowledge of required materials, fixtures, tools and system operation/function in order to install drywall.
2. Students will investigate career outlook, education requirements, and salary related to the drywall industry.
3. Students will utilize proper procedure to successfully install and finish drywall.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Cordless drill-driver Drywall saw Drywall square Drywall taping knife Hawk Inside corner tool Mud pan Plaster trowel Utility knife

Topic 1: Knowledge and Preparation

Engaging Experience 1

Title: Tools and Materials

Suggested Length of Time: 1-2 days

Standards Addressed

Priority:

- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses
- MCE.CPCT.AC Recognize and identify the materials used to cover the interior walls of a house

Supporting:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.

Detailed Description/Instructions: Students will identify the tools and materials necessary to cut, fasten, and finish drywall.

Bloom's Levels: Remember

Webb's DOK: Level 1

Engaging Experience 2

Title: Measurement and Calculation

Suggested Length of Time: 1-2 days

Standards Addressed

Priority:

- MCE.CPCT.AC Use a standard ruler, a metric ruler, and a measuring tape to measure.

Supporting:

- MCE.CPCT.AC Use basic math functions to complete jobsite/workplace tasks.
- MCE.CPCT.AC Estimate materials and supplies needed.
- MCE.CPCT.AC Calculate ratios, fractions, and proportion measures.
- MCE.CPCT.AC Use ratios, fractions, and proportion measures to perform measurement tasks.
- MCE.CPCT.AC Use appropriate formulas to determine measurements of dimensions, spaces, and structures.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using U.S. Standard unit.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using Metric units.

- MCE.CPCT.AC Use dimensions, spaces, and structures calculations to estimate materials and supplies needed.

Detailed Description/Instructions: The students' will accurately measure and calculate the material required to complete a drywall project.

Bloom's Levels: Apply

Webb's DOK: Level 1

Topic 2: Application

Engaging Experience 1

Title: Measure, cut, install and finish drywall project

Suggested Length of Time: 5 days

Standards Addressed

Priority:

- BuildingMaintenance.E02 Repair drywall/plaster walls
- BuildingMaintenance.E03 Replace/repair interior walls
- BuildingMaintenance.A12 Identify anchors and fasteners

Supporting:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.

Detailed Description/Instructions: The students will measure, cut, install and finish a drywall project with three coats of joint compound.

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 2

Title: Repair multiple sized holes in drywall

Suggested Length of Time: 2 days

Standards Addressed

Priority:

- E02 Repair drywall/plaster walls
- A12 Identify anchors and fasteners

Supporting:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.

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Detailed Description/Instructions: The students will demonstrate various repair techniques for holes in drywall.

Bloom's Levels: Analyze

Webb's DOK: 2

Topic 3: Career Pathway and Job Outlook

Engaging Experience 1

Title: Career Pathway and Job Outlook

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields

Supporting:

Detailed Description/Instructions: Students will complete an activity covering job outlook, education requirements, and salary in the drywall industry.

Bloom's Levels: Remember

Webb's DOK: 1

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) Using what they have learned, students complete a residential drywall project. Students will mud and tape a 2x2 section of drywall. They will measure, cut, fasten, and finish their drywall.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
Knowledge and Preparation	Tools and Materials	Students will identify the tools and materials necessary to cut, fasten, and finish drywall.	1-2 days
Knowledge and Preparation	Measurement and Calculation	The students' will accurately measure and calculate the material required to complete a drywall project.	1-2 days
Application	Measure, Cut, Install, and Finish a Drywall Project	The students will measure, cut, install and finish a drywall project with three coats of joint compound.	5 days
Application	Repair Multiple Sized Holes in Drywall	The students will demonstrate various repair techniques for holes in drywall.	2 days
Career Pathway and Job Outlook	Career Pathway and Job Outlook	Students will complete an activity covering job outlook, education requirements, and salary in the drywall industry.	1 day

Unit 6: Tile

Subject: Home Maintenance

Grade: 9-12

Name of Unit: Tile

Length of Unit: 1 week

Overview of Unit: The students will learn how to measure, cut, set and finish both vertical and floor tile. Using the tile setting trainer, students will apply mathematics skills to layout the tile grid. Then students will cut and fit tile using several types of cutting tools, and apply mortar and grout.

Priority Standards for unit:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields
- BuildingMaintenance.E09 Install or replace ceramic tile
- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade.
- MCE.CPCT.AC Recognize and identify some of the materials used in the tile industry

Supporting Standards for unit:

- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.
- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A01 Identify building maintenance occupations and related fields	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify building maintenance occupations and related fields	1
	Remember

Priority Standard: BuildingMaintenance.E09 Install or replace ceramic tile	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can install or replace ceramic tile	2
	Apply

Priority Standard: MCE.CPCT.AC Recognize and identify the materials used to cover the interior walls of a house	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can recognize and identify the materials used to cover the interior walls of a house	1
	Remember

Priority Standard: MCE.CPCT.AC Recognize and identify some of the materials used in the tile industry	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can recognize and identify some of the materials used in the tile industry	1
	Remember

Essential Questions:

1. How does knowledge and preparation of measurement, techniques and tools apply to accurately and successfully installing tile?
2. How does outlook, education, and salary determine the probability of employment in the tile industry?
3. How can the procedure be utilized in order to properly install tile?

Enduring Understanding/Big Ideas:

1. Students will have knowledge of required materials, tools and processes in order to successfully install tile.
2. Students will investigate career outlook, education requirements, and salary related to the tile industry.
3. Students will utilize proper procedure to successfully install tile.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Chalk line Grout float Margin trowel Notched trowel Rub block Snap cutter Staple gun Tile nippers Utility knife Wet saw

Topic 1: Knowledge and Preparation

Engaging Experience 1

Title: Tile Tools and Materials

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade.
- MCE.CPCT.AC Recognize and identify some of the materials used in the tile industry

Supporting:

- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Detailed Description/Instructions: Students will engage in various activities to learn about the tools and materials used in the tile industry

Bloom's Levels: Remember

Webb's DOK: Level 1

Topic 2: Application

Engaging Experience 1

Title: Tile Setting

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- Building Maintenance.E09 Install or replace ceramic tile

Supporting:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.

Detailed Description/Instructions: Students will use mortar to set tile on a piece of plywood for the hot plate project.

Bloom's Levels: Apply

Webb's DOK: Level 2

Engaging Experience 2

Title: Framing A Tile Project

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- E09 Install or replace ceramic tile

Supporting:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.

Detailed Description/Instructions: Students will cut, sand, and stain trim for the tile hot plate project

Bloom's Levels: Apply; **Webb's DOK:** Level 2

Engaging Experience 3

Title: Grouting Tile

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.E09 Install or replace ceramic tile

Supporting:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.

Detailed Description/Instructions: Students will apply grout to the tile hot plate project

Bloom's Levels: Apply

Webb's DOK: Level 2

Engaging Experience 4

Title: Sealing Tile

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- E09 Install or replace ceramic tile

Supporting:

- MCE.CPCT.AC Select tools, machinery, equipment, and resources that match requirements of the job.
- MCE.CPCT.AC Properly maintain and care for tools, machines, and equipment.
- MCE.CPCT.AC Safely use tools, machines, and equipment productively and efficiently in alignment with industry standards.

Detailed Description/Instructions: Students will apply a sealer to the tile hot plate project

Bloom's Levels: Apply

Webb's DOK: Level 2

Topic 3: Career Pathway and Job Outlook

Engaging Experience 1

Title: Career Pathway and Job

Outlook Suggested Length of

Time: 1-day **Standards**

Addressed

Priority:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields

Supporting:

Detailed Description/Instructions: Students will complete an activity covering job outlook, education requirements, and salary in the tile industry.

Bloom's Levels: Remember

Webb's DOK: 1

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) Students will use what they have learned to complete a framed ceramic tile project. This project will need to be set, grouted, and sealed.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
Knowledge and Preparation	Tile Tools and Materials	Students will engage in various activities to learn about the tools and materials used in the tile industry	1 day
Application	Tile Setting	Students will use mortar to set tile on a piece of plywood for the hot plate project.	1 day
Application	Framing a Tile Project	Students will cut, sand, and stain trim for the tile hot plate project	1 day
Application	Grouting Tile	Students will apply grout to the tile hot plate project	1 day
Application	Sealing Tile	Students will apply a sealer to the tile hot plate project	1 day
Career Pathway and Job Outlook	Career Pathway and Job Outlook	Students will complete an activity covering job outlook, education requirements, and salary in the tile industry.	1 day

Unit 7: HVAC

Subject: Home Maintenance

Grade: 9-12

Name of Unit: HVAC

Length of Unit: 1 week

Overview of Unit: The students will explore the relationship between electricity consumption and heating and cooling output using meters and testing devices. Using the HVAC trainer, students will gain an understanding of the basics of thermodynamics and explore the properties of convection, conduction and radiation.

Priority Standards for unit:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields
- BuildingMaintenance.G10 Replace furnace or cooling filter
- BuildingMaintenance.G11 Inspect/clean heat exchangers
- MCE.CPCT.AC Describe the purpose and operation of the various electrical components used in HVAC equipment
- MCE.CPCT.AC Identify the major components of a cooling system and explain how each type works

Supporting Standards for unit:

- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A01 Identify building maintenance occupations and related fields	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify building maintenance occupations and related fields	1
	Remember

Pending Board Approval: August 21, 2025

Priority Standard: BuildingMaintenance.G10 Replace furnace or cooling filter	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can replace furnace or cooling filter	2
	Apply

Priority Standard: BuildingMaintenance.G11 Inspect/clean heat exchangers	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can inspect/clean heat exchangers	2
	Apply

Priority Standard: MCE.CPCT.AC Describe the purpose and operation of the various electrical components used in HVAC equipment	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can describe the purpose and operation of the various electrical components used in HVAC equipment	2
	Understand

Priority Standard: MCE.CPCT.AC Identify the major components of a cooling system and explain how each type works	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify the major components of a cooling system and explain how each type works	2
	Understand

Essential Questions:

1. How does knowledge and preparation of measurement, techniques and tools apply to accurately and successfully understand the workings of an HVAC system.
2. How does outlook, education, and salary determine the probability of employment in the HVAC industry.
3. How can the procedure be utilized in order to properly test and maintain an HVAC system?

Enduring Understanding/Big Ideas:

1. Students will have knowledge of required materials, fixtures, tools and system operation/function in order to maintain and test an air conditioning system.
2. Students will investigate career outlook, education requirements, and salary related to the HVAC industry.
3. Students will utilize proper procedure to successfully test and maintain an air conditioning system.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Thermocouple Sling psychrometer anemometer/air speed indicator Multimeter Crimpers Clamp-on ammeter Fin straightener Putty knife

Topic 1: Knowledge and Preparation

Engaging Experience 1

Title: Tool identification and terminology

Suggested Length of Time: 1-2 days

Standards Addressed

Priority:

- MCE.CPCT.AC Identify the major components of a cooling system and explain how each type works
- MCE.CPCT.AC Describe the purpose and operation of the various electrical components used in HVAC equipment

Supporting:

- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Detailed Description/Instructions: The students will research various components of a typical heating, ventilation and air conditioning system.

Bloom's Levels: Remember

Webb's DOK: 1

Topic 2: Application

Engaging Experience 1

Title: Heat exchanger experiment

Suggested Length of Time: 2-3 days

Standards Addressed

Priority:

- BuildingMaintenance.G10 Replace furnace or cooling filter
- BuildingMaintenance.G11 Inspect/clean heat exchangers

Detailed Description/Instructions: The students will collect data to calculate the temperature change in water.

Bloom's Levels: Apply

Webb's DOK: 2

Topic 3: Career Pathway and Job Outlook

Engaging Experience 1

Title: Career Pathway and Job Outlook

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields

Supporting:

Detailed Description/Instructions: Students will complete an activity covering job outlook, education requirements, and salary in the HVAC industry.

Bloom's Levels: Remember

Webb's DOK:

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) Using a thermocouple, students record and then graph temperature measurements achieved through conduction, convection, and radiation.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
Knowledge and Preparation	Tool identification and terminology	The students will research various components of a typical heating, ventilation and air conditioning system.	1-2 days
Application	Heat Exchanger Experiment	The students will collect data to calculate the temperature change in water.	2-3 days
Career Pathway and Job Outlook	Career Pathway and Job Outlook	Students will complete an activity covering job outlook, education requirements, and salary in the HVAC industry.	1 day

Unit 8: Concrete

Subject: Home Maintenance

Grade: 9-12

Name of Unit: Concrete

Length of Unit: 1 week

Overview of Unit: Students will identify and describe basic tools, equipment, and materials used in the concrete trade. Students will gain an understanding of basic concrete and reinforcing applications. Students will also prepare, form, reinforce and pour a concrete project, while exploring applied science and mathematics in the trade.

Priority Standards for unit:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields
- BuildingMaintenance.H03 Mix concrete
- BuildingMaintenance.H04 Patch and/or repair concrete structures
- BuildingMaintenance.H05 Pour and finish concrete
- BuildingMaintenance.H02 Set forms
- MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade.

Supporting Standards for unit:

- MCE.CPCT.AC Estimate resources/materials required for a specific project or problem.
- MCE.CPCT.AC Estimate correct amount of required resources/materials.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A01 Identify building maintenance occupations and related fields	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify building maintenance occupations and related fields	1
	Remember

Priority Standard: BuildingMaintenance.H03 Mix concrete	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can mix concrete	2
	Apply

Priority Standard: BuildingMaintenance.H04 Patch and/or repair concrete structures	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can patch and/or repair concrete structures	3
	Apply

Priority Standard: BuildingMaintenance.H05 Pour and finish concrete	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can pour and finish concrete	2
	Apply

Priority Standard: BuildingMaintenance.H02 Set forms	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can set forms	2
	Apply

Priority Standard: MCE.CPCT.AC Recognize and identify some of the basic hand tools and their proper uses in the construction trade	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can recognize and identify some of the basic hand tools and their proper uses in the construction trade	1
	Remember

Essential Questions:

1. How does knowledge and preparation of measurement, techniques and tools apply to accurately and successfully pour a concrete project?
2. How does outlook, education, and salary determine the probability of employment in the concrete industry?
3. How can the procedure be utilized in order to properly complete a concrete project?

Enduring Understanding/Big Ideas:

1. Students will have knowledge of required materials, fixtures, tools and system operation/function in order to pour a concrete project.
2. Students will investigate career outlook, education requirements, and salary related to the concrete industry.
3. Students will utilize proper procedure to successfully pour a concrete project.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	Bolt cutters Bull float Concrete broom Edger Lineman's pliers Magnesium float Screed Steel trowel Tamper Wood float

Topic 1: Knowledge and Preparation

Engaging Experience 1

Title: Tool identification and terminology

Suggested Length of Time: 1-2 days

Standards Addressed

Priority:

- Recognize and identify some of the basic hand tools and their proper uses in the construction trade.

Supporting:

- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Detailed Description/Instructions: The students will complete terminology worksheet exploration using video, internet and classroom instruction.

Bloom's Levels: Remember

Webb's DOK: 1

Topic 2: Application

Engaging Experience 1

Title: Concrete project

Suggested Length of Time: 2-3 days

Standards Addressed

Priority:

- BuildingMaintenance.H03 Mix concrete
- BuildingMaintenance.H04 Patch and/or repair concrete structures
- BuildingMaintenance.H05 Pour and finish concrete
- BuildingMaintenance.H02 Set forms

Supporting:

- MCE.CPCT.AC Estimate resources/materials required for a specific project or problem.
- MCE.CPCT.AC Estimate correct amount of required resources/materials.
- MCE.CPCT.AC Demonstrate use of tools, machinery, equipment, and other resources commonly used in design and construction.

Detailed Description/Instructions: The students will construct a form, mix, pour and finish a concrete project.

Bloom's Levels: Analyze

Webb's DOK: 1

Topic 3: Career Pathway and Job Outlook

Engaging Experience 1

Title: Career Pathway and Job Outlook

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields

Supporting:

-

Detailed Description/Instructions: Students will complete an activity covering job outlook, education requirements, and salary in the concrete industry.

Bloom's Levels: Remember

Webb's DOK:

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) The students will construct a form, mix, pour and finish a concrete project. One project option is a paver stone.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
Knowledge and Preparation	Tool Identification and Terminology	The students will complete terminology worksheet exploration using video, internet and classroom instruction.	1-2 days
Application	Concrete Project	The students will construct a form, mix, pour and finish a concrete project.	2-3 days
Career Pathway and Job Outlook	Career Pathway and Job Outlook	Students will complete an activity covering job outlook, education requirements, and salary in the concrete industry.	1 day

Unit 9: Blueprint Reading

Subject: Home Maintenance

Grade: 9-12

Name of Unit: Blueprint Reading

Length of Unit: 1 week

Overview of Unit: The students will do a simple sketch of a lab and then transfer the sketch to a drafting board where they will add the correct symbols for doors, windows, electrical and plumbing fixtures. Students will gain an understanding of plot plans and how to use a floor plan to determine where walls are placed. Students will also use the elevation drawings to measure window and door locations and the placement of cabinets. Blueprint Reading reinforces math and reading skills.

Priority Standards for unit:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields
- BuildingMaintenance.A08 Interpret blueprints/schematics and as-built drawings
-
- MCE.CPCT.AC Learn measurement techniques for taking room dimensions
- MCE.CPCT.AC Identify tools and terminology used for blueprint reading

Supporting Standards for unit:

- MCE.CPCT.AC Create floor plans
- MCE.CPCT.AC Create construction details
- MCE.CPCT.AC Create a class schedule
- MCE.CPCT.AC Create a plot plan
- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.
- MCE.CPCT.AC Identify timeline required to complete a project/job.
- MCE.CPCT.AC Interpret drawings used in project planning.
- MCE.CPCT.AC Recognize elements and symbols of blueprints and drawings.
- MCE.CPCT.AC Use proper measurements to determine layout.
- MCE.CPCT.AC Sketch/draw/illustrate concepts and ideas.

- MCE.CPCT.AC Draw or sketch plan/layout to be completed.
- MCE.CPCT.AC Calculate ratios, fractions, and proportion measures.
- MCE.CPCT.AC Use ratios, fractions, and proportion measures to perform measurement tasks.
- MCE.CPCT.AC Use appropriate formulas to determine measurements of dimensions, spaces, and structures.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using U.S. Standard unit.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using Metric units.
- MCE.CPCT.AC Use dimensions, spaces, and structures calculations to estimate materials and supplies needed.
- MCE.CPCT.AC Use basic math functions to complete jobsite/workplace tasks.

Unwrapped Priority Standards:

Priority Standard: BuildingMaintenance.A01 Identify building maintenance occupations and related fields	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify building maintenance occupations and related fields	1
	Understand

Priority Standard: BuildingMaintenance.A08 Interpret blueprints/schematics and as-built drawings	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can interpret blueprints/schematics and as-built drawings	3
	Analyze

Priority Standard: MCE.CPCT.AC Learn measurement techniques for taking room dimensions	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can learn measurement techniques for taking room dimensions	2
	Apply

Priority Standard: MCE.CPCT.AC Identify tools and terminology used for blueprint reading	
Learning Targets	Webb's DOK Level
	Bloom's Level
I can identify tools and terminology used for blueprint reading	1
	Understand

Essential Questions:

1. How does knowledge and preparation of measurement, techniques and tools apply to accurately and successfully reading a set of blueprints.
2. How does outlook, education, and salary determine the probability of employment in reading blueprints.
3. How can the procedure be utilized in order to properly read a set of blueprints?

Enduring Understanding/Big Ideas:

1. Students will have knowledge of required materials and tools necessary to read a set of blueprints.
2. Students will investigate career outlook, education requirements, and salary related to the construction industry.
3. Students will utilize proper procedure to successfully read a set of building blueprints

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
	30/60 Triangle Architect's scale Drafting tape Drawing board Drawing paper Template House print set Tape Measure T- Square

Topic 1: Knowledge and Preparation

Engaging Experience 1

Title: Blueprint Tools and Terminology

Suggested Length of Time: ½ day

Standards Addressed

Priority:

- MCE.CPCT.AC Identify tools and terminology used for blueprint reading

Supporting:

- MCE.CPCT.AC Match vocabulary and visual cues to workplace/jobsite situations.
- MCE.CPCT.AC Use correct terminology to convey verbal and visual.
- MCE.CPCT.AC Utilize vocabulary and visual cues in context of design and construction situations.

Detailed Description/Instructions: Students will engage in activities related to learning what tools and terminology is used in order to read a blueprint

Bloom's Levels: Apply

Webb's DOK: Level 1

Topic 2: Application

Engaging Experience 1

Title: Room Measuring

Suggested Length of Time: ½ day

Standards Addressed

Priority:

- MCE.CPCT.AC Learn measurement techniques for taking room dimensions

Supporting:

- MCE.CPCT.AC Use basic math functions to complete jobsite/workplace tasks.
- MCE.CPCT.AC Calculate ratios, fractions, and proportion measures.
- MCE.CPCT.AC Use ratios, fractions, and proportion measures to perform measurement tasks.
- MCE.CPCT.AC Use appropriate formulas to determine measurements of dimensions, spaces, and structures.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using U.S. Std unit.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using Metric units.

Detailed Description/Instructions: Students will use a tape rule to take room dimensions, including distances and the sizes of doors and windows.

Bloom's Levels: Apply

Webb's DOK: Level 1

Engaging Experience 2

Title: Measuring with a Scale

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A08 Interpret blueprints/schematics and as-built drawings

Supporting:

- MCE.CPCT.AC Calculate ratios, fractions, and proportion measures.
- MCE.CPCT.AC Use ratios, fractions, and proportion measures to perform measurement tasks.
- MCE.CPCT.AC Use appropriate formulas to determine measurements of dimensions, spaces, and structures.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using U.S. Standard unit.
- MCE.CPCT.AC Measure dimensions, spaces, and structures using Metric units.
- MCE.CPCT.AC Use dimensions, spaces, and structures calculations to estimate materials and supplies needed.

Pending Board Approval: August 21, 2025

Detailed Description/Instructions: Students will use a scale rule to determine the size of a room

Bloom's Levels: Apply

Webb's DOK: Level 1

Engaging Experience 3

Title: Create Floor Plans

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A08 Interpret blueprints/schematics and as-built drawings

Supporting:

- MCE.CPCT.AC Interpret drawings used in project planning.
- MCE.CPCT.AC Recognize elements and symbols of blueprints and drawings.
- MCE.CPCT.AC Use proper measurements to determine layout.
- MCE.CPCT.AC Sketch/draw/illustrate concepts and ideas.
- MCE.CPCT.AC Draw or sketch plan/layout to be completed.

Detailed Description/Instructions: Students will sketch a floor plan of the Home Maintenance lab. Included in the sketch will be all doors, windows, walls, and cabinets.

Bloom's Levels: Apply

Webb's DOK: Level 1

Engaging Experience 4

Title: Create Schedules

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A08 Interpret blueprints/schematics and as-built drawings

Supporting:

- MCE.CPCT.AC Identify timeline required to complete a project/job.

Detailed Description/Instructions: Students will create a schedule for doors, windows and cabinets for the Home Maintenance lab.

Bloom's Levels: Apply

Webb's DOK: Level 2

Topic 3: Career Pathway and Job Outlook

Engaging Experience 1

Title: Career Pathway and Job Outlook

Suggested Length of Time: 1 day

Standards Addressed

Priority:

- BuildingMaintenance.A01 Identify building maintenance occupations and related fields

Supporting:

Detailed Description/Instructions: Students will complete an activity covering job outlook, education requirements, and salary related to blueprint reading.

Bloom's Levels: Remember

Webb's DOK: 1

Engaging Scenario

Engaging Scenario (An Engaging Scenario is a culminating activity that includes the following components: situation, challenge, specific roles, audience, product or performance.) Students will use what they have learned to create a floor plan with schedules of the Home Maintenance Lab.

Summary of Engaging Learning Experiences for Topics

Topic	Engaging Experience Title	Description	Suggested Length of Time
Knowledge and Preparation	Blueprint Tools and Terminology	Students will engage in activities related to learning what tools and terminology is used in order to read a blueprint.	½ day
Application	Room Measuring	Students will use a tape rule to take room dimensions, including distances and the sizes of doors and windows.	½ day
Application	Measuring with a Scale	Students will use a scale rule to determine the size of a room.	1 day
Application	Create a Floor Plan	Students will sketch a floor plan of the Home Maintenance lab. Included in the sketch will be all doors, windows, walls, and cabinets.	1 day
Application	Create Schedules	Students will create a schedule for doors, windows and cabinets for the Home Maintenance lab.	1 day
Career Pathway and Job Outlook	Career Pathway and Job Outlook	Students will complete an activity covering job outlook, education requirements, and salary related to blueprint reading.	1 day

Unit of Study Terminology

Appendices: All Appendices and supporting material can be found in this course's shell course in the District's Learning Management System.

Assessment Leveling Guide: A tool to use when writing assessments in order to maintain the appropriate level of rigor that matches the standard.

Big Ideas/Enduring Understandings: Foundational understandings teachers want students to be able to discover and state in their own words by the end of the unit of study. These are answers to the essential questions.

Engaging Experience: Each topic is broken into a list of engaging experiences for students. These experiences are aligned to priority and supporting standards, thus stating what students should be able to do. An example of an engaging experience is provided in the description, but a teacher has the autonomy to substitute one of their own that aligns to the level of rigor stated in the standards.

Engaging Scenario: This is a culminating activity in which students are given a role, situation, challenge, audience, and a product or performance is specified. Each unit contains an example of an engaging scenario, but a teacher has the ability to substitute with the same intent in mind.

Essential Questions: Engaging, open-ended questions that teachers can use to engage students in the learning.

Priority Standards: What every student should know and be able to do. These were chosen because of their necessity for success in the next course, the state assessment, and life.

Supporting Standards: Additional standards that support the learning within the unit.

Topic: These are the main teaching points for the unit. Units can have anywhere from one topic to many, depending on the depth of the unit.

Unit of Study: Series of learning experiences/related assessments based on designated priority standards and related supporting standards.

Unit Vocabulary: Words students will encounter within the unit that are essential to understanding. Academic Cross-Curricular words (also called Tier 2 words) are those that can be found in multiple content areas, not just this one. Content/Domain Specific vocabulary words are those found specifically within the content.