







Multiple Category Scope and Sequence: Scope and Sequence Report For Course Standards and Objectives, Content, Skills, Vocabulary

Wednesday, August 20, 2014, 2:13PM



Unit	Course Standards and Objectives	Content	Skills	Vocabulary
District Intermediate <u>Plumbing 1 (46.0501) (District)</u> 2014-2015 <u>Cook, Robert</u>	<p><u>Power tool safety</u>  (Week 1, 2 Weeks) </p> <p>UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 1 Standard 01 Students will receive an orientation to the plumbing trade.</p> <ul style="list-style-type: none"> ▪ Objective 0105 Explain the importance of safety in the construction industry. <p>Standard 02 Students will be able to understand and use of plumbing tools.</p> <ul style="list-style-type: none"> ▪ Objective 0201 Identify the basic hand and power tools used in the plumbing trade. ▪ Objective 0203 Explain safety as it applies to plumbing tools. 	<p>Which civilization had the first plumbing system?</p> <p>That safety is a top priority in the work place.</p> <p>Which tools are used by a plumber when plumbing a house.</p> <p>How to use drills, cutters and any power tool safely.</p>	<p>Students will have a brief history of where plumbing had it's start. Why safety is a priority in the work place. They will learn the basic tools used in the plumbing industry.</p>	<p>Drill bit</p> <p>Sawzall</p> <p>Drill</p> <p>ABS cutter</p> <p>Copper cutter</p> <p>Pex cutter</p> <p>In the wall cutter</p> <p>Gaza Rome</p>
	<p><u>Hand tool safety</u>  (Week 1, 2 Weeks) </p> <p>UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 1 Standard 01 Students will receive an orientation to the plumbing trade.</p> <ul style="list-style-type: none"> ▪ Objective 0105 Explain the importance of safety in the construction industry. <p>Standard 02 Students will be able to understand and use of plumbing tools.</p> <ul style="list-style-type: none"> ▪ Objective 0201 Identify the basic hand and power tools used in the 	<p>That safety is a top priority in the work place.</p> <p>Which tools are used by a plumber when plumbing a house.</p> <p>How to use drills, cutters and any power tool safely.</p>	<p>Why safety is a priority in the work place. They will learn the basic tools used in the plumbing industry, both power and hand tools.</p>	<p>Safety</p> <p>Angle head drill</p> <p>Chuck key</p> <p>Drill bit</p> <p>Pilot bit</p> <p>Sawzall</p> <p>Extension Cord</p> <p>Torque wrench</p>

	<ul style="list-style-type: none"> plumbing trade. Objective 0202 Demonstrate the proper maintenance procedures to be used for hand and power tools. Objective 0203 Explain safety as it applies to plumbing tools. 			Safety classes
				Gloves
<p>Underground sub-rough plumbing  (Week 2, 2 Weeks) </p>	<p>UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 1 Standard 05 Students will be able to understand and demonstrate the use of plastic pipe and fittings.</p> <ul style="list-style-type: none"> Objective 0501 Identify the common types of materials and schedules of plastic piping. Objective 0505 Demonstrate the ability to properly measure, cut, and join plastic piping. <p>Standard 08 Students will be able to understand drain, waste and vent (DWV) Systems.</p> <ul style="list-style-type: none"> Objective 0801 Explain how waste moves from a fixture through the drain system to the environment. 	<p>What ABS pipe is made of.</p> <p>How thick different schedules of pipe are.</p> <p>Why it's important to measure correctly</p> <p>How waste is moved from residential to the city or county side.</p>	<p>Students will understand and install materials for a sub-rough plumbing. They will be able to identify different fitting and measure and cut pipe to length.</p>	<p>ABS Pipe</p> <p>Schedule 40</p> <p>Measuring tape</p> <p>Glue</p> <p>Fittings</p> <p>Drainage</p> <p>Sewage pumps</p> <p>Slope</p> <p>Inspections</p> <p>Inspector</p> <p>Code</p>
<p>Fitting Identification  (Week 2, 2 Weeks) </p>	<p>UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 2 Standard 05 Students will be able to understand and demonstrate the use of plastic pipe and fittings.</p> <ul style="list-style-type: none"> Objective 0501 Identify the common types of materials and schedules of plastic piping. Objective 0502 Identify the common types of fittings and valves used with plastic piping. Objective 0506 	<p>Tell the difference between wyes, 90's and san-tees.</p> <p>What size plastic pipe comes in.</p> <p>Plastic pipe and fittings come in ABS, PVC and CPVC.</p> <p>How to install piping safely.</p>	<p>The students will be able to identify different types of fittings and types of piping and where they would be used.</p>	<p>Wye</p> <p>ninety degree ell</p> <p>Sanitary tee</p> <p>Test tee</p> <p>Coupling</p> <p>Fortyfive degree ell</p>

Soldering  (Week 4, 2 Weeks) 

Follow basic safety precautions for the installation, operation, and maintenance of plastic tubing.

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 1 Standard 01
Students will receive an orientation to the plumbing trade.

- Objective 0101
Describe the history of the plumbing trade.

Standard 02
Students will be able to understand and use of plumbing tools.

- Objective 0201
Identify the basic hand and power tools used in the plumbing trade.

Standard 06
Students will be able to understand and demonstrate the use of copper pipe and fittings.

- Objective 0601
Select the correct types of materials for copper piping systems.
- Objective 0604
Select the appropriate personal protective equipment for working with copper piping.
- Objective 0605
Correctly measure, cut, ream, and join copper piping.

The Romans were the first to have modern plumbing.

Drills, sawzall and pipe cutters, measuring tape are some of the tools used in plumbing.

Copper pipe, flux, solder and heat are used in the soldering process.

Students will be able to solder copper pipe and fittings.

ABS Glue
Strapping
Wood boring
Code
Gaza Rome
Angle head drill
Sawzall
Copper
Cutter
Reamer
Flux
Emery cloth
Torch
Heat

Brazing  (Week 4, 2 Weeks) 

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 1 Standard 06
Students will be able to understand and demonstrate the use of copper pipe and fittings.

That soldering uses flux as where brazing uses heat.

Brazing is used for medical gas

Students will be able to demonstrate how to braze copper pipe.

Brazing
Rods

- Objective 0601
Select the correct types of materials for copper piping systems.
 - Objective 0604
Select the appropriate personal protective equipment for working with copper piping.
 - Objective 0605
Correctly measure, cut, ream, and join copper piping.
- piping.
- You should wear gloves and safety glasses.
- Brazing is required for underground piping.
- Gloves
- Gas Piping
- Medical
- Underground piping
- Heat

Standard 09
Students will be able to understand water, distribution systems.

- Objective 0902
Identify the major components of water distribution system and describe the function of each component.

Drainage waste and vent sizing  (Week 5, 2 Weeks) 

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 1 Standard 05
Students will be able to understand and demonstrate the use of plastic pipe and fittings.

- Objective 0502
Identify the common types of fittings and valves used with plastic piping.
- Objective 0503
Identify and determine the kinds of hangers and supports needed for plastic piping.
- Objective 0505
Demonstrate the ability to properly measure, cut, and join plastic piping.

Wyes, 90's, 45's, couplings, are some fittings used in drainage.

Plastic strapping is used for plastic pipe hangers.

Use a measuring tape and pencil to make and cut plastic pipe.

Students will be able to size pipe and fittings for proper installation and code.

- Wye
- Forty five
- Ninety
- Glue
- Strapping
- Cutter
- Coupling
- Tape measure
- Drainage
- Pencil
- Fixture
- Reservoirs

Water line sizing  (Week 6, 2 Weeks) 

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 2 Standard 06
Students will be able to understand and use of copper pipe and fittings.

That by counting the number of fixtures in a home you can determine the size of the water lines in your home.

Students will be able to size water lines for flow as per code.

<ul style="list-style-type: none"> Objective 0601 Select the correct types of materials for copper piping systems. 	Copper, brass and pex piping are used in the water system.	Meter Box
	You can track the water we use from reservoirs, to water treatment plants, to mains, to your home.	Yolk Water Main
Standard 09 Students will be able to understand water, distribution systems.		Corporation shut off
<ul style="list-style-type: none"> Objective 0901 Discuss how water moves from the source, through the water distribution system, and to the fixture. Objective 0902 Identify the major components of water distribution system and describe the function of each component. 		Water treatment
		Brass
		Pex Copper

Rough Plumbing/House
rough-in  (Week 8, 10 Weeks) 

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 2 Standard 05 Students will be able to understand and demonstrate the use of plastic pipe and fittings.	What the different types of materials that are used to rough in a house.	Students will install the rough plumbing in a residential home. They will demonstrate how to use power and hand tools and how to install DWV.	rough-in Wyes
	That ABS is supported every 4 ft.		ninety degree ell
<ul style="list-style-type: none"> Objective 0501 Identify the common types of materials and schedules of plastic piping. Objective 0503 Identify and determine the kinds of hangers and supports needed for plastic piping. Objective 0505 Demonstrate the ability to properly measure, cut, and join plastic piping. 	That ABS can be cut with a pipe saw or an ABS cutter.		Cutter
	Water systems are sized by the amount of fixtures in the house.		Fixture unit
	Copper is cut with a copper cutter.		waste
Standard 06 Students will be able to understand and use of copper pipe and fittings.	DWV stands for drainage, waste and vents.		vents drainage
	<ul style="list-style-type: none"> Objective 0601 Select the correct types of materials for copper piping systems. Objective 0605 		supports

Correctly measure, cut, ream, and join copper piping.

Standard 08

Students will be able to understand drain, waste and vent (DWV) Systems.

- Objective 0802
Identify the major components of a drainage system and describe their functions.
- Objective 0804
Identify the various types of DWV fittings and describe their application.

Skills USA Prep



(Week

12, 18 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 2
Standard 10
Students will understand the need for professional development.

- Objective 1011*
Master a working knowledge of SkillsUSA
a. state the SkillsUSA motto
b. state the SkillsUSA creed
c. learn the SkillsUSA colors
d. describe the official SkillsUSA dress
e. describe the procedure for becoming a SkillsUSA officer

Understand the motto.

Understand the creed.

Understand the colors?

What is involved in serving on committees.

I want the students to understand the importance of Skills-USA and how it can benefit them as they compete and learn new skills and people.

motto

creed

colors

committee

leadership

Skills-USA

emblem

competition

Standard 11

Students will understand the need for leadership skills.

- Objective 1101
Serve on a committee
- Objective 1102
Prepare an agenda
- Objective 1105
Participate in a school project
- Objective 1109
Implement a leadership project

Toilet repair



(Week 30, 2

Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 2
Standard 01
Students will receive an orientation to

That a plumber should never work alone until they are a journeyman.

Students will learn the standard toilet repairs and what protective equipment they should wear.

journeyman

the plumbing trade.

- Objective 0102
Identify the stages of progress within the plumbing trade.
- Objective 0105
Explain the importance of safety in the construction industry.

Standard 07

Students will be able to understand and use of fixtures and faucets.

- Objective 0704
Discuss common types of toilets, urinals, and bidets.

You should always wear protective clothing such as rubber gloves.

There are round front, elongated, flushometer and waterless toilets.

apprentice
 apprenticeship
 gloves
 elongated
 flushometer
 waterless
 toilet

Faucet Repair



(Week

31, 2 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 1 Standard 07
Students will be able to understand and demonstrate the use of fixtures and faucets.

- Objective 0702
Discuss common types of sinks, lavatories, and faucets.

UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 2 Standard 01
Students will receive an orientation to the plumbing trade.

- Objective 0104
State the personal characteristics of a professional.

That there are single handle, double handle, eight inch center, 4 inch center, cartridge, bibb washers and seats.

Moen cartridge puller and a new cartridge.

Seat puller, socket set and a screw driver.

Seat puller, socket set and a screw driver.

Students will be able to do the basic faucet repairs.

Moen
 Price Phister
 Cartridge
 Puller
 Seat
 Bibb washer
 Screw driver
 Socket
 Seat wrench

House repairs



(Week

32, 2 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 2 Standard 02
Students will be able to understand and demonstrate the use of plumbing tools.

- Objective 0201
Identify the basic hand and power tools used in the

Pliers, crescent wrenches and screw drivers are most used in basic home repairs.

You would most likely be fixing toilets, sinks and clogged drains.

You would use flux, torch, solder, copper cutter and emery cloth to

How to do the basic home repairs.

Pliers
 Wrenches
 Clogged
 Solder

plumbing trade.

repair copper leaks.

Flux

Standard 05

Students will be able to understand and demonstrate the use of plastic pipe and fittings.

You can get your materials from Home Depot, Lowes or local plumbing supply stores.

Torch

Emery cloth

- Objective 0502
Identify the common types of fittings and valves used with plastic piping.

toilet

Supplies

Standard 06

Students will be able to understand and use of copper pipe and fittings.

- Objective 0601
Select the correct types of materials for copper piping systems.

Standard 07

Students will be able to understand and use of fixtures and faucets.

- Objective 0702
Discuss common types of sinks, lavatories, and faucets.

Finish Plumbing



(Week

34, 4 Weeks)



UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 2 Standard 07

Students will be able to understand and use of fixtures and faucets.

Some sinks and all toilets are made of China.

Single handle faucets are most commonly used in houses.

What materials different fixtures and faucets are made of. What different dimensions and rough-in requirements are for different types of plumbing fixtures.

Toilets

bathtub

disposal

china

bowl wax

supply tube

P-trap

putty

water heater

- Objective 0701
Identify the basic types of materials used in the manufacture of plumbing fixtures.
- Objective 0702
Discuss common types of sinks, lavatories, and faucets.
- Objective 0703
Discuss common types of bathtubs, bath-shower modules, shower stalls, and shower baths.
- Objective 0704

The standard bathtub is 5' long by 30" wide.

Tank and bowl with a round front.

1/3 and 1/2 horse power disposals are used in residential.

Discuss common types of toilets, urinals, and bidets.

- Objective 0706
Discuss common types of garbage disposals and domestic dishwashers.

