

**CAREER
PATHS**

Plumbing

Virginia Evans
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Express Publishing

**CAREER
PATHS**

Plumbing

Book

1

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Scope and Sequence

Unit	Topic	Reading context	Vocabulary	Function
1	Hand Tools 1	Advertisement	ball peen hammer, chalk box, claw hammer, hacksaw, level, nut driver, Phillips screwdriver, plastic pipe saw, plumb bob, slotted screwdriver, tape measure, tool box, utility knife, wallboard saw	Making a recommendation
2	Hand Tools 2	Book chapter	adjustable wrench, angled jaw pliers, basin wrench, combination pliers, copper flaring tool, crimping tool, locking pliers, needle nose pliers, pipe wrench, smooth jaw pipe wrench, torque wrench, tubing cutter	Describing condition
3	Power Tools	Catalogue	air compressor, circular saw, drill bit, grinder, hammer drill, jackhammer, pistol drill, reciprocating saw, right angle drill, saber saw	Stating intentions
4	Safety Equipment	Poster	dust mask, earplugs, face shield, first aid kit, goggles, grip gloves, hard hat, kneepads, leather gloves, safety glasses, steel-toed boots	Warning about consequences
5	Basic Actions 1	Instructions chapter	adjust, cut, mark, measure, rotate, saw, segment, slice, slide, tilt, turn	Asking for help
6	Basic Actions 2	Instructions	drive, grasp, insert, loosen, pull, push, release, remove, tighten, turn, twist	Giving instructions
7	Materials	Catalogue	brass, cast iron, chrome, copper, plastic, porcelain, rubber, stainless steel, steel	Explaining an error
8	Numbers	Chart	-hundred, -ths, add, and, comes to, equals, is, less, minus, multiplied by, plus, point, subtract, times, over, divided by	Discussing price
9	Measurements	Website	centimeter, conversion, imperial, inch, kilogram, kPa, metric, millimeter, pound, psi	Describing length
10	Properties and Dimensions	Email	depth, durability, flexible, height, length, rigid, strength, thickness, weight, width	Checking for correctness
11	Pipes, Tubes, and Tubing	Product listing	ABS pipe, CPVC pipe, ductile, inside diameter (ID), nominal diameter, outside diameter (OD), PE tubing, perforated pipe, PEX tubing, pipe, PVC pipe, schedule, tube, tubing	Disagreeing with an opinion
12	Fittings	Poster	adapter, bushing, coupling, elbow, female, fitting, hub, joint, male, offset, reducer, street, tees, threaded, union	Identifying correct parts
13	Valves	Magazine article	backflow, check valve, gas cock, gate valve, hose bibb, house outlet, isolation valve, pressure reducing valve, relief valve, RPZ, stop, stop-and-waste valve	Describing possible events
14	Fixtures	Memo	basin, bathroom, bathtub, bidet, countertop, kitchen sink, laundry, lavatory, shower, sink, toilet, water closet	Changing plans
15	Faucets	Product listing	aerator, air gap, bathtub faucet, diverter, handle, lavatory faucet, shower faucet, spout, tub and shower faucet	Confirming plans

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Scope and Sequence

Unit	Topic	Reading context	Vocabulary	Function
1	Drains	Poster	basket strainer, bath waste and overflow (BW&O) drain, floor drain, plunger, plunger rod, pop-up (PO), pop-up rod, port opening, strainer	Describing frequency
2	Sealants and Compounds	Magazine Article	bond, braze, brush applicator, cleaner, compound, flux, glue, insecure, pipe dope, primer, sealant, solder, solvent-welding, Teflon tape, torch	Describing purpose
3	Drainage, Waste, and Venting Systems	Email	building drain, building sewer, cleanout, drainage, p-trap, stack vent, trap, vacuum, vent, vent stack, waste stack, wastewater, weir	Describing consequences
4	Garbage Disposals	Advertisement	appliance, boot, discharge, garbage disposal, gasket, horsepower, knock-out plug, mounting assembly, shred, shredding chamber, sink flange, waste	Checking for completion
5	Dishwashers	Instructions	backflow, bay, dishwasher, drain hose, drill, electrical hook up, hot water valve, mounting bracket, route, strapping, trim-out phase	Providing options
6	Gas Water Heaters	Safety warning	baffle tube, BTU, burner assembly, dip tube, exhaust, flue pipe, gas regulator, gas water heater, natural gas, pilot light, propane, thermocouple	Emphasizing a point
7	Electric Water Heaters	Magazine article	electric water heater, exceed, expensive, heating element, high limit, recovery rate, storage tank, temperature rise, thermostat, venting	Making comparisons
8	Water Heaters: Other	Advertisement	circulate, circulating pump, conserve, installation costs, instantaneous, point-of-use water heater, solar collector, solar water heater, tankless water heater, volume	Discussing pros and cons
9	Appliance Boxes	Email	boiler drain, hub, icemaker, icemaker box, mounting tab, wall stud, wall trim, washing machine, washing machine box, water dispenser	Correcting an error
10	Site Communication	Memo	building permit, carry, confirm, consult, contact, email, post, rough-in sheet, smartphone, two-way radio, work order	Pointing out an error
11	Blueprints: Reading	Email	abbreviation, bird's-eye view, blueprint, dashed, dot, illustrate, isometric view, piping system, plan view, review, section view	Identifying a problem
12	Blueprints: Drafting	Note drafting	drafting, drafting paper, drafting table, drafting tape, drafting triangle, illustration, isometric drafting, scale ruler, sketch	Describing steps
13	Organizing Materials	Employee manual	bagging and tagging, location, material tracking chart, materials list, on-site, order, pallet, procure, store, warehouse	Explaining what is needed
14	Handling Materials	Safety notice	back support, dolly, forklift, handle, manual labor, pallet jack, pipe carrier, pipe cart, transport, vehicle rack, weight capacity	Talking about safety
15	Layouts	Textbook	above-ground layout, batter board, excavate, layout, pipe route, pull a string line, trench, trench layout, underground layout, wall layout	Agreeing with an opinion

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Scope and Sequence

Unit	Topic	Reading context	Vocabulary	Function
1	Fire-suppression Systems	Website	activation temperature, active fire prevention, deluge system, dry pipe system, fire extinguisher, fire sprinkler, fire-suppression system, foam water sprinkler system, fusible alloy, glass bulb, heat, smoke alarm, trigger, wet pipe system	Describing new technology
2	Septic Systems	Website	chamber, effluent, hatch, leach field, leach pit, on-site sewage facility, percolate, sediment, septic system, septic tank, settle, sewage	Talking about future events
3	Water Service Installation	Email	backfill, burial-depth, incoming, outgoing, sleeve, trench safety, trickle indicator, water main, water meter, water service, water service pipe	Stressing importance
4	Water Distribution Installation	Job listing	drilling, floor penetration, in-wall, load bearing, maximum, minimum, non-load bearing, notching, pipe sizing, sizing calculations, stub out, wall penetration, water distribution system	Describing experience
5	Drainage, Waste, and Vent Installation	Textbook	branch vent, circuit vent, drainage fixture unit (dfu), fixture branch, horizontal branch, individual vent, island venting, loop vent, relief vent, wet venting	Correcting yourself
6	Toilet Installation	Installation guide	bolt, bowl, caulk, closet (toilet) flange, closet bolt, non-corrosive, one-piece, rubber gasket, secure, tank, tank supply, tank-to-bowl gasket, two-piece	Describing an order of events
7	Sink Installation	Work estimate	adhesive latex caulk, cast iron, compression coupling connection, continuous waste, disposal, excess, fastening clip, lavatory supply, pre-molded, slip joint, stainless steel, trap adapter	Describing options
8	Water Heater Installation	Instructions	clearance, dielectric union, drip leg, electrolysis, expansion tank, finished area, gas supply pipe, position, safety pan, service panel, solution, termination point	Describing effects
9	Toilets	Work order	ball float, ballcock, chain, close-couple gasket, fill valve, flush, flush valve, overflow/fill tube, rim, rim holes, tank flush flapper, tank handle	Describing severity
10	Clogs	Book	blockage, cable auger, clear, clog, closet auger, crank, drainpipe, electric power auger, plumber's snake, plunger	Giving advice
11	Faucets and Showers	Website	ball-type faucet, cam washer, cartridge faucet, ceramic disc faucet, compression faucet, cylinder, mineral deposits, o-ring, plumber's grease, scouring pad, seat washer	Asking for a description
12	Pumps	Website	above-ground pump, alignment, faulty, foot valve, impeller, obstruction, plugged, pressure switch, pump house, submersible pump	Offering an explanation
13	Septic Tanks	Magazine article	back up, break down, evaporation, exceed, gallonage, grease, limit, maintenance, pool, pump, root, saturate, scrap	Checking options
14	Pipe Repair	Website	braided-stainless-steel, burr, corrosion, ferrule, flood, overlap, pinch, pinhole, pipe repair clamp, sandpaper, splice, split	Requesting equipment
15	Water Heaters	Checklist	build up, circuit breaker, defective, disconnect, fume, gas regulator, leg, line voltage, odor, reset button, retainer clip, safety guard, volt	Giving a reminder

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Sealants and Compounds: Which one should you use?

Insecure joint fixtures can lead to disaster. You can avoid leaks and bursts by using the right type of sealer. **Sealants** such as **Teflon tape** and **compounds** like **pipe dope** seal the spaces between pipes with threaded connections. These substances are easily applied with **brush applicators**.

When working with copper pipe, you can **solder** pieces together. You will need a **torch** to melt metal components to each other. At lower temperatures, you should use **flux** to help the solder form a solid bond. Always make sure you are using approved solder and flux for pipes used with drinking water. **Brazing**, a soldering technique at high temperatures, is preferable for joining different types of metals to each other.

Use **solvent-welding** when you need to join plastic pipes. To ensure a strong **bond**, you will need to use **cleaner** to prepare the surfaces. Then apply a **primer** to aid the bonding process before applying the final **glue**.



torch



solvent-welding



glue

Get ready!

1 Before you read the passage, talk about these questions.

- How are pieces of pipes or parts joined together?
- Why is using the right sealer for a particular job important?

Reading

2 Read the magazine article on sealants and compounds. Then, mark the following statements as true (T) or false (F).

- A brush applicator is used to apply solder.
- Different types of metals can be brazed together.
- Soldering is the preferred method for joining plastic pipes.

Vocabulary

3 Write a word that is similar in meaning to the underlined part.

- The plumber used a method for joining plastic parts with chemicals to install the new pipes.
_ _ l _ _ n _ - w _ _ d i _ _
- Sealants are applied to threaded connections with a bristled tool.
b _ _ _ h _ _ p p _ _ c _ _ o r
- We need a compound used for threaded connections to finish the project.
_ _ p e _ _ o _ e
- The joint might leak if you don't use a substance that removes grease or debris first.
c _ e a _ _ r
- The chemical company released a new substance formed with two or more parts for sealing something.
_ o m _ _ _ n _
- Sam used a metal compound to join the copper pipes.
s _ _ _ e r

4 Read the sentence pair. Choose where the words best fit the blanks.

1 glue / primer

- A When solvent-welding, the _____ is applied first.
- B When solvent-welding, the _____ is applied last.

2 braze / solder

- A For a strong bond, use flux before you _____.
- B You need especially high temperatures to _____ a joint.

3 sealant / torch

- A The joint leaked because the plumber used the wrong _____.
- B This _____ is not hot enough for brazing.

4 flux / Teflon tape

- A _____ helps the solder stick.
- B _____ is used mainly for threaded connections.

5 Listen and read the article on sealants and compounds again. What is a danger of using the wrong sealing product?

Listening

6 Listen to a conversation between a customer and a clerk. Choose the correct answers.

- 1 Why does the clerk suggest a different product?
 - A the glue does not work on plastics
 - B the customer does not need a sealant
 - C the pipes need a flexible glue
 - D CPVC is the wrong pipe for the project
- 2 What will the customer likely do next?
 - A look for a stronger primer
 - B buy the recommended glue
 - C get a new type of pipe
 - D purchase a soldering torch

7 Listen again and complete the conversation.

Customer: I need something for 1 _____ - _____ two pieces of CPVC.

Clerk: Oh, 2 _____ want that glue.

Customer: Really? 3 _____ that it's for plastic piping.

Clerk: 4 _____, _____ it's only for PVC.

Customer: Sorry, I don't know much about 5 _____ . What's the difference?

Clerk: CPVC expands and contracts with 6 _____ water. Your glue needs to be more flexible to accommodate that.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

- I need something for ...*
- It says here ...*
- I don't know much about ...*

Student A: You are a customer. Talk to Student B about:

- your project
- the right glue
- types of pipe

Student B: You are a store clerk. Talk to Student A about the right glue for a project.

Writing

9 Use the conversation from Task 8 to fill out the store clerk's recommendation.

Irwin's Hardware

Product Recommendation

Type of project: _____

Materials used: _____

Product recommendation and why: _____



PLUMBING AT HOME

Sink Installation
PART III

Preparing the pipes

First, **measure** the correct length of pipe. Choose where to **cut** the pipe and **mark** the spot. To **slice** the pipe, we recommend a pipe cutter.

Slide the piece of pipe into the pipe cutter. **Adjust** the pipe cutter to fit the pipe. Then **turn** the wheels until the blade touches the pipe. Be sure that the pipe is straight. If the pipe **tilts** in the pipe cutter, it will not cut properly.

To **saw** through the pipe, **rotate** the pipe cutter. Remove any rough edges inside the pipe. Measure the new pipe **segment** to ensure it is correct.

If it is, turn to Part 4: Fittings.



Get ready!

1 Before you read the passage, talk about these questions.

- 1 What are some tools that can be used to cut a pipe into two pieces?
- 2 What are the steps a plumber should take when cutting a pipe with a pipe cutter?

Reading

2 Read the chapter from a book on plumbing at home. Then, complete the chart.

Pipe Preparation: Steps	
Step 1	_____ and _____ the pipe.
Step 2	_____ the pipe into a pipe cutter.
Step 3	Be sure that the pipe does not _____.
Step 4	_____ the pipe cutter to _____ through the pipe.

Vocabulary

3 Match the words (1-6) with the definitions (A-F).

- | | |
|--------------|------------|
| 1 __ measure | 4 __ slide |
| 2 __ tilt | 5 __ cut |
| 3 __ rotate | 6 __ mark |

- A to place a sign on something
 B to turn something over or around
 C to determine the physical properties of an object
 D to move something along a surface
 E to separate or divide something with a blade or edge
 F to lean in a direction

4 Read the sentence pair. Choose where the words best fit the blanks.

1 adjust / slice

- A Turn the wheel to _____ the wrench.
 B Be careful with that knife or you'll _____ your hand.

2 saw / turn

- A _____ through the pipe with this tool.
 B _____ the screwdriver clockwise to tighten the screw.

5 Listen and read the chapter on pipe preparation again. What actions do plumbers take before cutting pipes?

Listening

6 Listen to a conversation between two plumbers. Mark the following statements as true (T) or false (F).

- 1 ___ The man needs assistance.
 2 ___ The woman will measure the pipe.
 3 ___ The man lost his pipe cutter.

7 Listen again and complete the conversation.

Plumber 1: Hey, Carol. Can you **1** _____ with something?

Plumber 2: Oh, of course. What do you need?

Plumber 1: I'm **2** _____ this pipe. But I need help measuring it.

Plumber 2: **3** _____. Should I hold the pipe or use the tape measure?

Plumber 1: Just hold it, thanks. **4** _____.

Plumber 2: Sure thing. Do you have something to **5** _____ it?

Plumber 1: Oh, I forgot. Let me grab one.

Plumber 2: Don't **6** _____ it. You can borrow my pen.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

- Hey, can you ...?*
Should I ... or ...?
Do you have something to ...?

Student A: You are a plumber. Talk to Student B about:

- getting help cutting a pipe
- measuring the pipe
- marking the pipe

Student B: You are a plumber. Talk to Student A about cutting a pipe.

Writing

9 Use the conversation from Task 8 to fill out the chapter summary.

Preparing Pipes Chapter Summary

Before cutting, _____

If you have a partner, you might want to _____

To cut, _____



Glossary

- above-ground pump** [N-COUNT-U12] An **above-ground pump** is a pump system for a well located above ground or away from the well.
- activation temperature** [N-COUNT-U1] An **activation temperature** is the point at which the temperature is high enough to set off a sprinkler system.
- active fire prevention** [N-UNCOUNT-U1] **Active fire prevention** is a method of controlling and stopping fires using moving objects and devices.
- adhesive latex caulk** [N-UNCOUNT-U7] **Adhesive latex caulk** is a substance used to seal the edges of a sink to a countertop.
- alignment** [N-UNCOUNT-U12] **Alignment** is the state of parts being adjusted so that they are in the correct position.
- auger** [N-COUNT-U10] An **auger** is a tool used to remove materials from a pipe.
- back up** [N-COUNT-U13] A **back up** is a situation that occurs when a pipe system becomes clogged and material is pushed back toward where it came from.
- backfill** [N-UNCOUNT-U3] **Backfill** is loose soil that is placed into a dug-out area to fill it up.
- ball float** [N-COUNT-U9] A **ball float** is a hollow, sealed ball that floats on the water surface in a toilet tank and triggers the fill valve to start or stop the flow of water.
- ballcock** [N-COUNT-U9] A **ballcock**, also called a fill valve, is a mechanism that controls the water level in a toilet tank.
- ball-type faucet** [N-COUNT-U11] A **ball-type faucet** is a faucet with a single handle that moves over a ball-shaped cap above the base of the spout.
- blockage** [N-COUNT-U10] A **blockage** is an obstruction in a drain or other piping system.
- bolt** [N-COUNT-U6] A **bolt** is a metal rod that is inserted through a hole and secured with a nut on the other side, used to fasten two objects together such as a toilet tank and toilet bowl.
- bowl** [N-COUNT-U6] A toilet **bowl** is the bottom piece of the toilet into which waste is deposited and then flushed with water.
- braided-stainless-steel** [N-UNCOUNT-U14] **Braided-stainless-steel** is a strong, flexible material used in some tubes and hoses.
- branch vent** [N-COUNT-U5] A **branch vent** is a vent that connects one or more individual vents with a stack.
- break down** [V-I-T-U13] To **break down** is to separate into pieces or component parts.
- build-up** [N-UNCOUNT-U15] **Build-up** is the increased presence of a substance in a particular place.
- burial-depth** [N-UNCOUNT-U3] **Burial-depth** refers to how deep underground a pipe is placed.
- burr** [N-COUNT-U14] A **burr** is a rough edge on a piece of metal.
- cable auger** [N-COUNT-U10] A **cable auger** is a tool for clearing obstructions in a drain system. It consists of a coiled flexible cable with a corkscrew tip and a cranking device to extend it spinning through the system to push or pull the obstruction out of place.
- cam washer** [N-COUNT-U11] A **cam washer** is a small metal ring found near the ball in a ball-type faucet.
- cartridge faucet** [N-COUNT-U11] A **cartridge faucet** is a faucet with a cartridge that moves up and down to control the flow of water.
- cast iron** [N-UNCOUNT-U7] **Cast iron** is a combination of iron, carbon, and silicon that is made into shapes using a mold.
- caulk** [N-UNCOUNT-U6] **Caulk** is a substance used to create a waterproof seal, such as between the base of a toilet and the floor.
- ceramic disc faucet** [N-COUNT-U11] A **ceramic disc faucet** is a faucet with a single lever over a tall, round body.
- chain** [N-COUNT-U9] A **chain** is a metal part that connects a toilet's tank handle to the tank flapper so that the flapper is lifted when the handle is pressed.
- chamber** [N-COUNT-U2] A **chamber** is an enclosed space.
- circuit breaker** [N-COUNT-U15] A **circuit breaker** is a device that stops an electrical current that has become too strong and might be dangerous.

The logo for 'Career Paths' is located in the top left corner. It features the words 'CAREER' and 'PATHS' stacked vertically in a bold, italicized, sans-serif font. The text is white with a yellow outline and is set against a background of three vertical orange stripes.

Plumbing

Career Paths: Plumbing is a new educational resource for plumbing professionals who want to improve their English communication in a work environment. Incorporating career-specific vocabulary and contexts, each unit offers step-by-step instruction that immerses students in the four key language components: reading, listening, speaking, and writing. **Career Paths: Plumbing** addresses topics including common tools, pipes, appliance installations, septic systems, and troubleshooting problems.

The series is organized into three levels of difficulty and offers a minimum of 400 vocabulary terms and phrases. Every unit includes a test of reading comprehension, vocabulary, and listening skills, and leads students through written and oral production.

Included Features:

- A variety of realistic reading passages
- Career-specific dialogues
- 45 reading and listening comprehension checks
- Over 400 vocabulary terms and phrases
- Guided speaking and writing exercises
- Complete glossary of terms and phrases

The **Teacher's book** contains a full answer key and audio scripts.

The **audio CDs** contain all recorded material in American English and British English.

Books 1-3 of **Career Paths: Plumbing** are rated for the Common European Framework of Reference for Languages at A1, A2 and B1 respectively.



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