Plumbing
Lesson Two: A Plumber’s Tools

Facilitator Guide
Lifeskill Objective: Learners will be able to identify and describe the functions of common plumbing tools.

EFF Skills: Speak So Others Can Understand, Work Together, Cooperate With Others

SCANS Skills: Interpersonal (participate as member of a team; teach others)

Lesson Length: 2-3 hours

Tools

Realia: Pipe Wrench--several sizes, if possible
Adjustable wrench
Rib-joint and Slip-joint pliers
Locking pliers
Screwdrivers--at least one standard flat-bladed and a Phillips
Plunger
Auger
Hacksaw

Activity #1: A Plumber's Tools--cut up into small tool pictures

Activity #2: A Plumber's Tools Handout
How Many Tools Do You Need? Handout

Activity #3: Miguel's Toolbox Handout

Activity #4: Volunteers Needed Overhead
A Plumber's Tools Handout
Poster-sized Blank Paper
Glue sticks, Scissors, and Markers
Masking Tape or Other Material--for hanging posters

Activity #5: Plumbing Puzzle Handout A
Plumbing Puzzle Handout B
Plumbing Puzzle Handout C
Finishing Work:

Essential Plumbing Tools Checklist Handout A
Essential Plumbing Tools Checklist Handout B
Essential Plumbing Tools Checklist Handout C

Optional additional resource:

A Plumber's Glossary
## Target Vocabulary

### Nouns:
- adjustable wrench
- auger
- flat-bladed screwdriver
- hack saw
- Phillips screwdriver
- pipe wrench
- plunger
- rib-joint pliers
- slip-joint pliers
- snake

### Verbs:
- cut
- drive
- grab
- grip
- loosen
- measure
- remove
- replace
- tighten
**Actions**

**Activity #1: Tool Groups: Getting into Groups**

1. Give each learner a small tool picture as they enter the classroom. Tell learners to find their other group members by looking for other tools that look like theirs.

   They are looking for the other tools in their tool family. As the learners are locating their group members, make a chart with two columns, entitled Tool Families, on the board.

2. Label the left column Tools and the right column Uses. When the learners find their group members, ask them to sit down together. Ask each group to tell you the name of their tool family. Write the tool group names in the chart. Then ask the group to tell you what we use these tools for. Write the uses in the other column. Use different colors, if possible, to highlight the different information in each column.

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## Tool Groups

<table>
<thead>
<tr>
<th>Tool Name</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>hammers</td>
<td>drive a nail into another surface</td>
</tr>
<tr>
<td>saws</td>
<td>cut pipes</td>
</tr>
<tr>
<td>wrenches</td>
<td>grab or grip a pipe</td>
</tr>
<tr>
<td>tape measures</td>
<td>measure</td>
</tr>
<tr>
<td>screwdrivers</td>
<td>tighten or loosen screws</td>
</tr>
<tr>
<td>pliers</td>
<td>hold screws, bolts, nuts</td>
</tr>
</tbody>
</table>
### Actions

3. After completing the chart, model each tool name for the learners and ask them to repeat it after you. Then read each tool use, e.g., *to drive a nail*. And ask learners to demonstrate the action described. Then ask learners to repeat the phrase after you.

Tell the learners that today they will learn to identify the names and uses of *common plumbing tools*.

### Activity # 2: How Many Tools?

1. Give each learner the *A Plumber’s Tools* and *How Many Tools Do You Need? Handouts*. Read the list of tools on the first page of *A Plumber's Tools* to the group. Have learners repeat each tool name after you.

Pointing to the chart on the board, ask learners to guess what we use each tool for. Answers can be simple phrases similar to those used in the chart; e.g., to grip. Provide answers for any tool uses that learners are unable to guess.

2. Have a volunteer read the rules in the *How Many Tools Do You Need? Handout* for the plural forms of these words. After learners hear and read each rule, elicit examples from the *A Plumber's Tools Handout* that fit that plural ending. Write learner responses on the board so that the group can see additional examples of the written forms.

3. Ask volunteers to read each completed sentence. Answer questions or have other learners explain answers, if needed.
### Actions

**Activity # 3: How Many Tools Does Miguel Need?**

Give learners the **Miguel's Toolbox Handout**. Have a strong reader read the first three sentences to the group. Check to be sure that all learners understand the situation.

Ask learners to listen as you model the conversation with another learner with strong speaking skills. The first time you read it, learners should just listen and read along silently. Read the conversation again. Learners should write the words they hear on the lines. Read the conversation again, as needed.

Have each learner work with a partner from their tool families to check their answers. Circulate and answer questions, as needed.

If time permits, learners can practice this conversation out loud with a partner or make up their own conversations, using the other tools on the **A Plumber's Tools Handout**.

<table>
<thead>
<tr>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity # 3: How Many Tools Does Miguel Need?</strong></td>
</tr>
<tr>
<td>Give learners the <strong>Miguel's Toolbox Handout</strong>. Have a strong reader read the first three sentences to the group. Check to be sure that all learners understand the situation.</td>
</tr>
<tr>
<td>Ask learners to listen as you model the conversation with another learner with strong speaking skills. The first time you read it, learners should just listen and read along silently. Read the conversation again. Learners should write the words they hear on the lines. Read the conversation again, as needed.</td>
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<tr>
<td>Have each learner work with a partner from their tool families to check their answers. Circulate and answer questions, as needed.</td>
</tr>
<tr>
<td>If time permits, learners can practice this conversation out loud with a partner or make up their own conversations, using the other tools on the <strong>A Plumber's Tools Handout</strong>.</td>
</tr>
</tbody>
</table>

### Materials

- **Miguel's Toolbox Handout**
### Actions

**Activity # 4: Volunteering to Help**

Determine groups of four based on English skill level. Ask the learners in those groups to sit down together.

Explain to the learners that in this activity, they (in their small groups) will be packing tools in a van they are taking to another area in their state to assist people in a small town a few hours away to rebuild after a terrible storm destroyed much of their town. As you are telling them this story, you can show slides or photos of scenes from the Gulf Coast or other U.S. areas devastated by weather events--available everywhere on the Web.

Tell the learners that they will be working as "volunteers" in this area for 10 days. Ask a learner to explain the word *volunteer*. To clarify the meaning, elicit examples of the kinds of activities they can volunteer to do in their area.

Katrina or the Asian tsunami will most likely come up in the discussion. If not, tell learners that one thing groups often do is to go to another place and help communities clean up and build again after a bad storm.

Tell the learners that they only need to bring work clothes and their own tools; food, a place to sleep, and most large plumbing supplies will be available there. The group needs to decide what tools to bring with them so that they will all be able to do the work.

Place the *Volunteers Needed Overhead* on the OHP. These are the jobs that the teams will be doing to rebuild parts of the town. Assign the beginner group to Team #3 and have other groups select one of the other three team assignments. Leave this transparency on the OHP so that groups can refer to it throughout the activity.

Give each group a poster-size sheet of paper, a pair of scissors, a glue stick, and a marker. From each group, appoint a strong speaker as the driver and the others as plumber's helpers. The driver holds the paper in front of him or her on the table. Tell the drivers to draw a large van on their papers to cover most of the sheet. Draw an example on the board.

Holding up the *A Plumber's Tools Handout*, tell the groups to refer to the tools on this list when they discuss which tools (at least 10) are the most important for them to take with them to their volunteer work. Ask the groups to cut out and glue the pictures of

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<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity # 4: Volunteering to Help</strong></td>
<td><strong>Volunteers Needed—Overhead</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Poster-sized Blank Paper</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Glue Sticks</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Scissors</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Markers</strong></td>
</tr>
<tr>
<td></td>
<td><strong>A Plumber's Tools Handout</strong></td>
</tr>
</tbody>
</table>
**Actions**

the tools they selected inside the truck outline.

As the groups are working on "equipping their vans," write the following sample chart on the board:

<table>
<thead>
<tr>
<th>Number</th>
<th>Tool Name</th>
<th>Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>We are taking</td>
<td>two</td>
<td>hack saws</td>
</tr>
<tr>
<td>We are taking</td>
<td>two sets of</td>
<td>wrenches</td>
</tr>
</tbody>
</table>

Ask the "drivers" from each group to hang their van pictures on the walls around the room, using masking tape or other sticky material provided, and stand next to their picture. Tell the class that each driver is going to explain which tools their group chose to put in their van and why. Read the sample sentences you wrote on the board. Point out that they need three pieces of information in each sentence. Drivers can use the sentence structure you wrote on the board or make up their own.

Model what drivers will do. Following the example in the chart, point to a tool on one group's chart and model one sentence for the group.

Continue to have all the drivers of the groups, in turn, explain the tools in their pictures. Leave pictures hanging in place for several weeks, if possible.
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<thead>
<tr>
<th>Actions</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity #5: Plumbing Puzzle (Review of Vocabulary from Lessons 1 &amp; 2)</strong></td>
<td><strong>Plumbing Puzzle Handout A</strong></td>
</tr>
<tr>
<td>Give each learner a version of the Plumbing Puzzle Handout (A—beginning, B—mid-level and C—higher level) depending on his or her English skills.</td>
<td><strong>Plumbing Puzzle Handout B</strong></td>
</tr>
<tr>
<td>Explain that students can work the puzzle alone or with a partner who has a handout with the same letter at the top on this practice to review the tool names and spellings.</td>
<td><strong>Plumbing Puzzle Handout C</strong></td>
</tr>
<tr>
<td>Ask learners to show with their hands what <em>across</em> and <em>down</em> mean and then point to the spaces for #1 Across on their Handouts.</td>
<td></td>
</tr>
<tr>
<td>Assist beginners or those unfamiliar with crossword puzzle format in starting their puzzles.</td>
<td></td>
</tr>
</tbody>
</table>
## Actions

1. Go to a building supply store (e.g. Home Depot, Lowe's) near you. Go to the tool section of the store and look at the different kinds of tools in each tool group.

2. Go to the Plumbing supply aisle of a building supply store. Make a list of the types of products available.

3. **Essential Plumbing Tools Checklist** (extra practice): A new homeowner moved into the old house next door to yours. He has no tools but wants to learn to fix things in his house. He finds out that you are working as a plumber/plumbing helper and asks for your advice. Complete the checklist for your neighbor, filling in the missing words in the blanks.

4. Visit these websites to learn more about the variety of plumbing tools on the market:
   - [http://www.acchardware.com](http://www.acchardware.com)
   - [http://www.coastaltool.com](http://www.coastaltool.com)
   - [http://www.homedepot.com](http://www.homedepot.com)
   - [http://www.lowes.com](http://www.lowes.com)

## Materials

- **Essential Plumbing Tools Checklist**
  - Handout A

- **Essential Plumbing Tools Checklist**
  - Handout B

- **Essential Plumbing Tools Checklist**
  - Handout C
Plumbing
Lesson Two: A Plumber’s Tools

Facilitator Materials
# A Plumber's Tools: Tool Families

<table>
<thead>
<tr>
<th>Pliers</th>
<th>Wrenches</th>
<th>Plungers</th>
<th>Saws</th>
<th>Hammers</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Pliers" /></td>
<td><img src="image2.png" alt="Wrenches" /></td>
<td><img src="image3.png" alt="Plungers" /></td>
<td><img src="image4.png" alt="Saws" /></td>
<td><img src="image5.png" alt="Hammers" /></td>
</tr>
</tbody>
</table>

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Plumbing A Plumber's Tools Virginia Adult Learning Resource Center Lesson Two Facilitator Materials
A Plumber's Tools: Tool Families

<table>
<thead>
<tr>
<th>Tool Families</th>
<th>Tool Images</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIPE CUTTERS</td>
<td><img src="image1.png" alt="Pipe Cutters" /></td>
</tr>
<tr>
<td>TAPE MEASURES</td>
<td><img src="image2.png" alt="Tape Measures" /></td>
</tr>
</tbody>
</table>

Series:
- SERIES 61
- SERIES 46
- SERIES 19
VOLUNTEERS NEEDED!

WE NEED YOU!

Team # 1  Rebuild Community Center Plumbing
  • lay pipes in ground outside the building.
  • hang pipes inside for clean water and waste.

Team # 2  Repair Plumbing in Old Homes
  • unclog drain pipes inside houses
  • install new appliances in flooded homes

Team # 3  Install Fixtures in New Apartments
  • toilets  • hot water heaters
  • sinks    • washers
  • bathtubs • refrigerators

Team # 4  Repair Waste and Water Pipes
  In Old Neighborhoods
  • open blocked sewer pipes outside homes
  • fix broken water pipes in ground
Activity #2
How Many Tools Do You Need?

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>NUMBER WORD OR EXPRESSION</th>
<th>NOUN</th>
<th>HOW IT WORKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a</td>
<td>hammer</td>
<td>We use “a” in front of a singular (one) noun.</td>
</tr>
<tr>
<td>1</td>
<td>an</td>
<td>auger electric drill</td>
<td>We use “an” in front of nouns that begin with a vowel sound.</td>
</tr>
<tr>
<td>1</td>
<td>a pair of</td>
<td>work gloves pliers safety glasses</td>
<td>This is one object with two parts. We add “s” or “es” at the end of the word.</td>
</tr>
<tr>
<td>2 or 3</td>
<td>a few some</td>
<td>plungers</td>
<td>We add “s” or “es” to plural nouns.</td>
</tr>
<tr>
<td>3 or more</td>
<td>several a set of</td>
<td>pipe cutters drill bits wrenches</td>
<td>We add “s” or “es” to plural nouns.</td>
</tr>
</tbody>
</table>

Let’s Practice

Write the correct form of each word. First, look at the example.

Example: Give me several wrenches.

1. Please hand me a set of wrenches.
2. I need a few bolts.
3. We need a 6ft snake to clear this drain.
4. I have a pair of glasses if you need them.
5. Can you give me some saws, please?
Miguel is going to fix a problem with the bathroom sink at his friend’s house. Before he leaves, he needs to pack his toolbox. Miguel tells his daughter, Elena, which tools he needs. Elena is putting the tools in his toolbox.

Read Miguel and Elena’s conversation and write the correct words on the lines after each picture.

Elena: What tools do you need, dad?

Miguel: I need a wrench and a pair of safety glasses.

Elena: What else do you need?

Miguel: I need a wrench and a pair of pliers.

Elena: Which wrench do you want?

Miguel: Put in an adjustable wrench and a locking wrench.

You can also throw in a set of socket wrenches.

Elena: Anything else?

Miguel: Let’s see. I will need a flashlight, a tape measure, an electric drill and a set of drill bits.

Elena: Okay, Dad. I hope that’s all. Your toolbox is full.
Activity #3: Plumbing Puzzle

Handout A

```
  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23
1  w  a  s  h  e  r
2          n
3          i
4  t  e  s
5  o  s  n  a  k  e
6  d  r  a  i  n
7  i  n  s  t  a  l  l
8          p
9          h
10         l
11  l  o  w  e
12         k
13         o
14         g
15  e  r  p
16         w  r  e  n  c  h  n
17  l  r  e  u
18         g
19         t  a  p  e
20  l  o  c  k  i  r  u
21         n
22         f
23         t  u  b
```

Plumbing
A Plumber's Tools
Virginia Adult Learning Resource Center
Plumbing Puzzle Handout A
Lesson Two Facilitator Materials
Activity #3: Plumbing Puzzle

Handout A

Words that you write **ACROSS** → **DOWN**

1. You use this appliance to wash your clothes.
2. A hot water_________heats the water in a building.
3. The water in your sink goes down the_______.
4. Two commodes is the same as two___________.
5. A long tool that goes down a pipe to clean it.
6. You cut pipes with a hack___________.
7. A word that means “to put in a new appliance.”
8. a
9. Another word for a plumber’s snake is an___________.
10. This man is using a___________.
11. water pressure means very little water.
12. A___________.
13. Plumbers use this tool to hold or turn pipes.
14. You can________pipe with a pipe cutter.
15. You use this tool to turn screws.
16. When water does not go down a drain, the drain has a___________.
17. This pipe has a___________.
18. A bath_________is very heavy.
19. You need a_________measure to find out the length of a pipe.
20. ________pliers hold screws and bolts tightly.
21. A_________toilet has moving water all the time.
22. A plumber can______a pipe with a crack in it.
Activity #3: Plumbing Puzzle

Handout B

A Plumber’s Tools
Virginia Adult Learning Resource Center

Plumbing
Lesson Two Facilitator Materials
### Activity #3: Plumbing Puzzle

**Handout B**

<table>
<thead>
<tr>
<th>DOWN</th>
<th>ACROSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A faucet will _________ when it is not working correctly.</td>
<td>4. We use this to force a blocked drain or pipe to open.</td>
</tr>
<tr>
<td>2. If a pipe is loose, you need to _________ it.</td>
<td>5. If your shower sprays just a little water, the problem could be low water _________</td>
</tr>
<tr>
<td>3. You can use _________ to grip a bolt, nut, or screw.</td>
<td>7. The type of wrench that fits different sizes of nuts, bolts or fittings with flat sides.</td>
</tr>
<tr>
<td>5. This pipe doesn't fit. It's too long. Do you have a _________?</td>
<td>8. A plumber puts a _________ down a pipe to clean out a block.</td>
</tr>
<tr>
<td>6. Another word for a break in a pipe is a _______.</td>
<td>9. To remove a nut or bolt, you _________ it.</td>
</tr>
<tr>
<td>9. When water runs down or sprays from a pipe, the pipe has a ________.</td>
<td>11. Another word for unblock is _________.</td>
</tr>
<tr>
<td>10. If your pipes freeze when it is very cold, they can _________.</td>
<td>13. To cut pipes, you can use a _________ saw.</td>
</tr>
<tr>
<td>12. Another word for grab or hold is _______.</td>
<td>14. To learn the length of a pipe, you use a tape _________.</td>
</tr>
</tbody>
</table>
Activity #3: Plumbing Puzzle

Handout C

ACROSS
1. When very little water comes out of a fixture, the water pressure might be ________.
2. The place where waste water goes is a ________.
3. A ________ wrench is used to grip or turn pipes.
6. The type of wrench that fits many sizes of nuts and bolts with flat sides.
8. The fixture on a sink where the water flows from.
10. This tool tightens and loosens screws.
11. Another word for fix is ________.
12. Another word that means “to hold something tightly.”
14. Another word for snake is ________.
16. The place where two pipes meet is the ________.
17. Plumbers put this down pipes to remove clean out clogs.
19. To put the parts of something together is to ________.

DOWN
1. Water coming out of a pipe or joint is a ________.
2. This is an appliance that chops up food waste into very small pieces.
4. This is used to find out the length of a pipe.
7. Another word for a clog is a ________.
9. This is used to cut pipes.
13. This is used over drains to force clogs through the pipes.
15. This is a problem with a toilet. Water continues to flow from the tank to the bowl.
18. You turn this to close and open a drain or pipe.
## Essential Tools for Plumbing Checklist

### Handout A

<table>
<thead>
<tr>
<th>TOOLS</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. a set of screwdrivers, Phillips and flat-bladed</td>
<td>to assemble fixtures, turn screws</td>
</tr>
<tr>
<td>2. a pipe wrench</td>
<td>to grip or turn pipes or fittings</td>
</tr>
<tr>
<td>3. a hacksaw</td>
<td>to cut pipes</td>
</tr>
<tr>
<td>4. a snake</td>
<td>to clean out a blocked pipe</td>
</tr>
<tr>
<td>5. tape measure</td>
<td>to find out the length of a pipe</td>
</tr>
<tr>
<td>6. a pipe cutter</td>
<td>to cut pipes</td>
</tr>
<tr>
<td>7. a plunger</td>
<td>to remove a clog from a drain</td>
</tr>
<tr>
<td>8. an adjustable wrench</td>
<td>to tighten or loosen screws, bolts, and pipes with flat sides</td>
</tr>
<tr>
<td>9. locking pliers</td>
<td>to grip or hold screws, bolts, or fittings</td>
</tr>
<tr>
<td>10. rib-joint pliers</td>
<td>to grip or turn pipes, nuts and fittings</td>
</tr>
</tbody>
</table>
## Essential Tools for Plumbing Checklist

### Handout B 🏡🔧

<table>
<thead>
<tr>
<th>TOOLS</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. a set of screwdrivers,</td>
<td>to assemble fixtures, turn screws</td>
</tr>
<tr>
<td>Phillips and flat-bladed</td>
<td></td>
</tr>
<tr>
<td>2. a pipe wrench</td>
<td>to grip or turn pipes or fittings</td>
</tr>
<tr>
<td>3. a hacksaw</td>
<td>to cut pipes</td>
</tr>
<tr>
<td>4. a snake</td>
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</tr>
<tr>
<td>8. an adjustable wrench</td>
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<td>9. locking pliers</td>
<td>to grip or hold screws, bolts or fittings</td>
</tr>
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<td>to grip or turn pipes, nuts and fittings</td>
</tr>
</tbody>
</table>

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**Plumbing**  
**A Plumber's Tools**  
**Virginia Adult Learning Resource Center**  
**Essential Tools Checklist Handout B**  
**Lesson Two Facilitator Materials**
## Essential Tools for Plumbing Checklist

### Handout C

<table>
<thead>
<tr>
<th>TOOLS</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a set of screwdrivers</td>
<td>to assemble fixtures, turn</td>
</tr>
<tr>
<td>1. Phillips and flat-bladed</td>
<td>screws</td>
</tr>
<tr>
<td>a pipe wrench</td>
<td>to grip or turn pipes or fittings</td>
</tr>
<tr>
<td>a hacksaw</td>
<td>to cut pipes</td>
</tr>
<tr>
<td>a snake</td>
<td>to clean out a blocked pipe</td>
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<td>an adjustable wrench</td>
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<td>rib-joint pliers</td>
<td>to grip or turn pipes, nuts or fittings</td>
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