



# Plumbing

## Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet (book). No one can add or subtract from the Boy Scout Requirements #33215.

. Requirements revised: 2005, Workbook updated: August 2008.

Scout's Name: \_\_\_\_\_ Unit: \_\_\_\_\_

Counselor's Name: \_\_\_\_\_ Counselor's Ph #: \_\_\_\_\_

### 1. Do the following:

a Describe how a properly working plumbing system protects your family's health and safety. \_\_\_\_\_

---

---

---

---

---

---

---

---

b List five important local health regulations related to plumbing and tell how they protect health and safety.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

c Describe the safety precautions you must take when making home plumbing repairs. \_\_\_\_\_

---

---

### 2. Do the following:

a Make a drawing and explain how a home hot- and cold-water supply system works.

Tell how you would make it safe from freezing. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b Make a drawing and explain the drainage system of the plumbing in a house.

Show and explain the use of drains and vents. \_\_\_\_\_

\_\_\_\_\_

3. Show how to use five important plumber's tools.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. Identify and describe the use of each of the following:

washer, \_\_\_\_\_

retaining nut, \_\_\_\_\_

plunger (rubber force cup), \_\_\_\_\_

solder, \_\_\_\_\_

flux, \_\_\_\_\_

elbow, \_\_\_\_\_

tee, \_\_\_\_\_

nipple, \_\_\_\_\_

coupling, \_\_\_\_\_

plug, \_\_\_\_\_

union, \_\_\_\_\_

trap, \_\_\_\_\_

\_\_\_\_\_

drainpipe, \_\_\_\_\_

and water meter. \_\_\_\_\_

5. Name the kinds of pipe that are used most often in a plumbing system. Explain why these pipes are used.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. Cut, thread, and connect two pieces of steel pipe.

7. Under the supervision of a knowledgeable adult, solder three copper tube connections using a gas torch. Include one tee, two straight pieces, and one coupling.

8. Do the following:      a. Replace a washer in a faucet.                      b. Clean out a sink or lavatory trap.

Online Resources (Use any Internet resource with caution and only with your parent's or guardian's permission.)

Boy Scouts of America: ► [scouting.org](http://scouting.org)   ► [Guide to Safe Scouting](#)   ► [Age-Appropriate Guidelines](#)   ► [Safe Swim Defense](#)  
    ► [Scout](#)      ► [Tenderfoot](#)      ► [Second Class](#)   ► [First Class](#)      📺 [Rank Videos](#)      ► [Safety Afloat](#)

Boy Scout Merit Badge Workbooks: [usscouts.org](http://usscouts.org) -or- [meritbadge.org](http://meritbadge.org)    Merit Badge Books: [www.scoutstuff.org](http://www.scoutstuff.org)  
[ExpertVillage First Aid Videos](#)   📺 [Make a First Aid Kit](#)   📺 [Basics](#)   📺 [Basics2](#)   📺 [CPR Basics](#)   📺 [Venomous Snake Bite](#)  
    📺 [Plumbing Repairs](#)   📺 [Leaky Faucet](#)   📺 [Garbage Disposal](#)   📺 [Toilet](#)   📺 [Replace a Sink](#)   📺 [Copper Tubing](#)

American Society of Plumbing Engineers: <http://www.aspe.org>

International Association of Plumbing and Mechanical Officials: <http://www.iapmo.org>

Mechanical Contractors Association of America: <http://www.mcaa.org>

Plumbing-Heating- Cooling Contractors: <http://www.phccweb.org>

United Association of Plumbers and Pipefitters: <http://www.ua.org>