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Please submit errors, omissions, comments or suggestions about this **workbook** to: Workbooks@USScouts.Org

Comments or suggestions for changes to the **requirements** for the **merit badge** should be sent to: Merit.Badge@Scouting.Org

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 1. Do the following:

 a Describe how a properly working plumbing system protects your family’s health and safety.

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

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

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 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.

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

Explain the drainage system of the plumbing in a house

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* Show and explain the use of drains and vents.

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

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 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.

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| Washer: |  |
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| Retaining nut: |  |
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| Plunger (rubber force cup): |  |
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| Solder: |  |
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| Flux: |  |
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| Elbow: |  |
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| Tee: |  |
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| Nipple: |  |
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| Coupling: |  |
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| Plug: |  |
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| Union: |  |
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| Trap: |  |
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| Drainpipe: |  |
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| Water meter: |  |
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 5. Name the kinds of pipe that are used most often in a plumbing system. Explain why these pipes are used.

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⬜ 6. Cut, thread, and connect two pieces of metal 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.

**When working on merit badges, Scouts and Scouters should be aware of some vital information in the current edition of the *Guide to Advancement* (BSA publication 33088). Important excerpts from that publication can be downloaded from** [**http://usscouts.org/advance/docs/GTA-Excerpts-meritbadges.pdf**](http://usscouts.org/advance/docs/GTA-Excerpts-meritbadges.pdf)**.**

**You can download a complete copy of the *Guide to Advancement* from** [**http://www.scouting.org/filestore/pdf/33088.pdf**](http://www.scouting.org/filestore/pdf/33088.pdf)**.**