



Royal Rangers

Merit Requirements: Silver-Bordered Merit

PLUMBING MERIT

1. Read a book on basic plumbing. Write a report about the material covered in the book. Include the following information in your report:
 - a. Bibliographic information (title, author, publisher, and date of publishing)
 - b. Outline of subjects covered
 - c. Description of three things you learned: Each description should be about a hundred words long.
2. Diagram the plumbing in a full bathroom. Show the route of the hot and cold water pipes to the tub, shower, sink, and commode from the water meter or incoming valve of the house.
3. Explain how to protect the water system in your home from freezing weather so that the plumbing is not damaged.
4. Diagram the drainage system in your home and explain how it works. Include the purpose of the laboratory trap in your explanation.
5. List six tools that are specific to plumbing and explain each tool's purpose. Demonstrate to your commander or to an adult who is familiar with the tool how to use it.
6. Explain what each of the following parts is and each part's purpose.
 - a. Washer
 - b. Closet flange
 - c. Elbow
 - d. Nipple
 - e. Plug
 - f. Union
 - g. Drainpipe
 - h. Air chambers
 - i. Float
 - j. Flux
 - k. Tee
 - l. Reducer
7. Do at least TWO of the following projects. Bring an exhibit if doing choice "a" Write a report and be prepared to answer questions about your experiences. Include what tools were used, and what parts were purchased (if applicable), what learning experience was gained, and whether your project worked after you finished.
 - a. Cut in half, thread, and join two pieces of black or galvanized pipe with a coupler. Bring this exhibit to your commander for his review.
 - b. Remove and clean out a lavatory trap.
 - c. Replace a washer in a faucet.
 - d. Replace a float in a commode.
 - e. Locate your water meter and explain how to turn the main valve off and on.
8. Join two plastic pipes together by using a coupler. These parts should be cemented together with the appropriate solvent under adult supervision. Display the completed sample for your commander. Be ready to explain the procedure you used.
9. Join copper pipes together using a gas torch, flux, and solder using the proper method and under adult supervision. Use at least one tee, three straight pieces, a nipple, and a cap.
10. Explain eight important local health regulations related to plumbing.
11. Explain what kinds of pipe are most often used in home construction and explain why.

12. Interview a plumber and ask questions about a career in plumbing. Use the following as a guide and write a report of the plumber's responses.
 - a. What are the positive and negative aspects of this job?
 - b. Is it hard to enter this trade? Why or why not?
 - c. What type of training is required?
 - d. Is on-the-job training available?
 - e. What type of license is required?
 - f. Is a contractor's license required to work as an independent plumber?
 - g. What is the salary range for plumbers?
 - h. Add any other relevant information from your conversation.