



Chemistry Basics

Merit Requirements Checklist

The following merit requirements must be successfully completed for a boy to be awarded the official Royal Rangers Chemistry Basics merit award. Each requirement must be approved by the boy's group leader or his designee. Content relating to each requirement may be found in the Learning about Chemistry Basics section of this Merit Activity Guide.

#	Requirement	Leader's Initials
1.	Define the following terms: <ol style="list-style-type: none"> a. Chemistry b. Matter c. Mass d. Volume e. Element f. Atom g. Molecule h. Ion 	
2.	List and give examples of the (3) states of matter.	
3.	List the (3) basic subatomic particles, giving the charge for each. Which (2) particles comprise the nucleus of an atom?	
4.	Draw a basic Bohr model diagram of the oxygen element (oxygen-16 or O-16) with the appropriate number of protons and neutrons in the nucleus and the appropriate number of electrons at each energy level.	
5.	Explain the origins and purpose of the Periodic Table of Elements and use it to describe and locate each of the following element categories: <ol style="list-style-type: none"> a. Alkali metals b. Halogens c. Noble gases d. Metals e. Nonmetals f. Rare-earth elements g. Lanthanoids h. Actinoids 	
6.	Complete any (4) of the following experiments. For each one, state a hypothesis describing your expected outcome before you begin. After each one, discuss what happened, whether your hypothesis proved correct, and what you learned. <ol style="list-style-type: none"> a. Elephant's toothpaste b. Under pressure c. Invisible ink 	

	<ul style="list-style-type: none"> d. Rock formation e. Cleaning Lincoln f. Hot and cold g. Slime it up h. Density column 	
	MERIT COMPLETED – Date:	

The Chemistry Basics merit patch, representing the completion of this merit, may be purchased from MyHealthyChurch.com and worn on the official Royal Rangers awards vest.

Visit RoyalRangers.com/uniforms for details.