

**Goal** • Demonstrate your understanding of the periodic table.

### What to Do

Use your periodic table to answer the following questions.

1. Identify each element.

- (a) The element in group 5 and period 5 \_\_\_\_\_
- (b) Only halogen that is a liquid at room temperature and pressure Bromine, Br
- (c) Alkali metal with the most massive atoms \_\_\_\_\_
- (d) Synthetic element in period 5 Technetium, Tc
- (e) Metal in group 16 and period 5
- (f) Alkaline earth element with the least massive atoms \_\_\_\_\_
- (g) Noble gas that has atoms with 54 protons \_\_\_\_\_

2. Complete the following table. The first row is completed as an example.

Name of Element	Atomic Number	Number of Protons	Number of Electrons
silicon	14	14	14
	8		
chromium			
sodium			
		13	
			19

3. Shade in the following chemical families, as indicated, on the outline of the periodic table.



halogens



noble gases



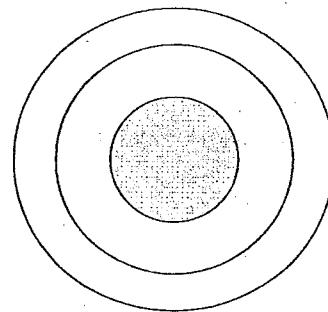
alkali metals



alkaline earth metals

## Part A: Atomic Structure

1. Draw five protons in the nucleus of the atom. Label them with their charge.
2. Draw six neutrons in the nucleus of the atom.
3. Draw two electrons in the first energy level and label them with their charge.
4. Draw three electrons in the second energy level and label them with their charge.
5. What element is represented by the diagram? \_\_\_\_\_



## Part B: Atomic Calculations

6. Label the information provided in the periodic table.

8	← _____
O	← _____
Oxygen	← _____
15.999	← _____

7. What does the atomic number represent?

\_\_\_\_\_ or \_\_\_\_\_

8. What does the atomic mass represent?

\_\_\_\_\_ + \_\_\_\_\_

9. How would you figure the number of protons or electrons in an atom?
10. How would you figure the number of neutrons in an atom?
11. Use your knowledge of atomic calculations to complete the chart.

Element	Atomic Number	Atomic Mass	Protons	Neutrons	Electrons
<b>Li</b>	3	7			
<b>P</b>	15	31			
<b>Cl</b>		35	17		
<b>Ni</b>	28			31	
<b>K</b>		39			19
<b>Ag</b>	47			61	
<b>H</b>		1	1		
<b>Si</b>				14	14
<b>W</b>			74	110	
<b>Ne</b>				10	10