

Prepare Your Own Summary

In this chapter, you investigated atomic theory, chemical bonding, compounds, and balancing chemical equations. Create your own summary of the key ideas from this chapter. You may include graphic organizers or illustrations with your notes. (See Science Skill 11 for help with graphic organizers.)

Use the following headings to organize your notes:

1. Atomic Theory and the Periodic Table
2. Bohr Diagrams and Lewis Diagrams of Compounds
3. Names and Chemical Formulas of Ionic Compounds
4. Names and Chemical Formulas of Covalent Compounds
5. Balancing Chemical Equations

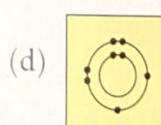
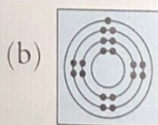
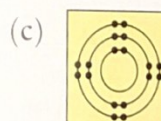
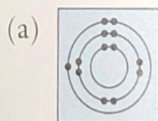
Checking Concepts

1. Copy and complete the following chart in your notebook.

Property	Proton	Electron	Neutron
Relative mass		1	
Charge	+		
Location in the atom			

2. (a) List the names of four chemical families in the periodic table.
(b) State the group number of each family.
(c) Describe a special property of each family.
3. (a) Explain how metal atoms become ions.
(b) Explain how non-metal atoms become ions.
4. Define "stable octet."
5. (a) Define "multivalent."
(b) Name one metal ion that is multivalent.
(c) Name one metal ion that is not multivalent.
6. Name and give the symbol for each of the following.
 - (a) the element in period 3 and group 2
 - (b) the halogen in period 4
 - (c) the element in period 6 and group 11
 - (d) the alkali metal in period 2
 - (e) the noble gas in period 1

7. Draw a Bohr diagram of the protons and electrons in each of the following.
 - (a) an atom of magnesium
 - (b) a chloride ion, Cl^-
 - (c) a calcium ion, Ca^{2+}
 - (d) an atom of argon
 - (e) the ionic compounds lithium fluoride, LiF , and beryllium chloride, BeCl_2
 - (f) the covalent compounds ammonia, NH_3 , and methane, CH_4
8. Draw a Lewis diagram for each of the following.
 - (a) one atom of each of the elements in the second period
 - (b) one atom of each of the elements in the halogen family (group 17)
 - (c) the molecules H_2 and F_2
 - (d) the covalent compounds HF , H_2O , and OBr_2
9. Identify the following atoms from their Bohr diagram.



10. (a) Identify the following compounds as ionic or covalent from their Lewis diagram.
(b) Write a formula for a compound that they might represent using elements with an atomic number less than 21.

