

# Ionic Structures

Unit 3: Ionic Compounds

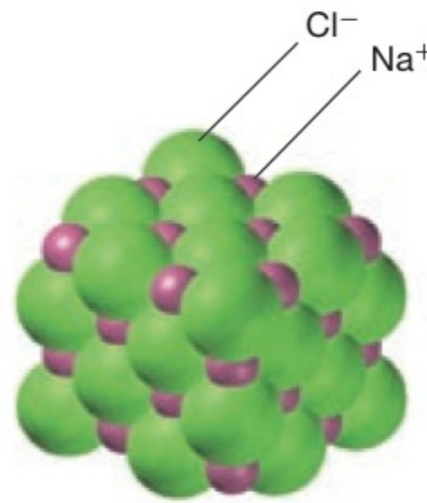
crystal lattice - structure formed by ionic compounds

crystal - solid with repeating arrangement of atoms, ions, or molecules.

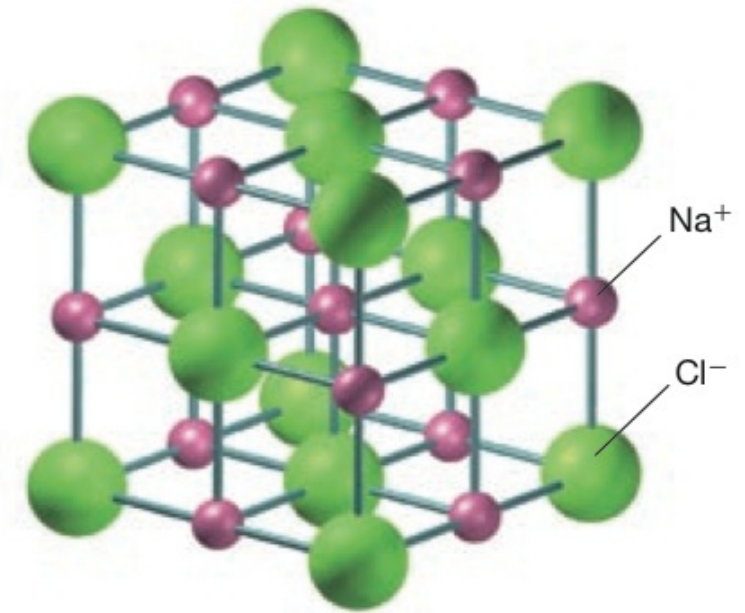
lattice - structure that has a regular geometric arrangement

FIGURE 3.3

**Crystal Structure of NaCl** Two models of the crystal structure of sodium chloride are shown.

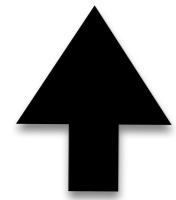


(a) To illustrate the ions' actual arrangement, the sodium and chloride ions are shown with their electron clouds just touching.

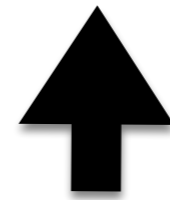


(b) In an expanded view, the distances between ions have been exaggerated in order to clarify the positioning of the ions in the structure.

# Bond Strength



bond strength



melting point



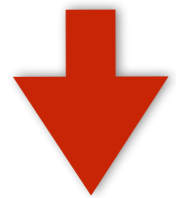
ionic charge



bond strength

*directly proportional*

**(higher charge = stronger magnet)**



size



bond strength

*inversely proportional*

**(smaller = ions can pack in tighter)**

# Practice

Which pair would have the higher melting point? Explain.

a. LiF or LiBr

b. CaCl<sub>2</sub> or CuCl<sub>2</sub>

c. CaS or Fe<sub>2</sub>O<sub>3</sub>

**Complete in  
class! Leave 1  
line under each.**