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TOPIC 2.2

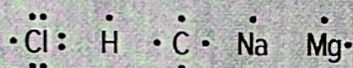
Extending the Connections: Lewis Diagrams

BLM 2.2-3

Extending the Connections

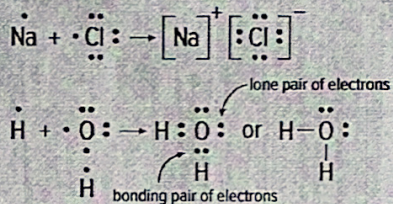
Lewis Diagrams

A common way to model electrons in an atom and the arrangement of atoms in a molecule or formula unit is with Lewis diagrams. They show only the valence electrons. Lewis diagrams consist of an element's chemical symbol surrounded by dots that represent its valence electrons. For helium, the dots are paired. Starting with second-period elements, dots are placed singly around the symbol at the points of a compass until the fifth one.



Then they are paired. In Lewis diagrams for molecules, each bonding pair of electrons is represented with a single line. Lewis diagrams that represent bonding in sodium chloride and water are shown below.

Draw the Lewis diagram for Cl_2 . What is an advantage to using Lewis diagrams instead of Bohr diagrams? What is a limitation?



Questions:

1. Draw Lewis diagrams for atoms of the elements from H to Ar.

H							He
Li	Be	B	C	N	O	F	Ne
Na	Mg	Al	Si	P	S	Cl	Ar

2. Draw the Lewis diagram for Cl_2 . What is an advantage to using Lewis diagrams instead of Bohr diagrams? What is a limitation?

