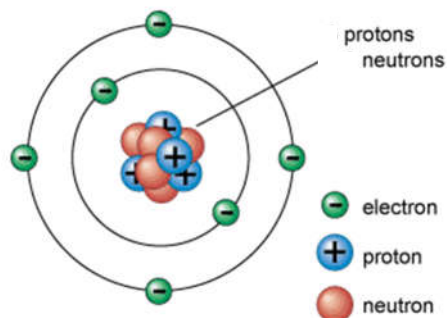


Review: Bohr Model of the Atom



• Electrons are shown in concentric **shells** or **energy levels** around the nucleus

- The first shell can hold up to _____
- The second shell can hold up to _____
- The third shell can hold up to _____
- The fourth shell can hold up to _____
- When filling electrons, you fill the _____ first
- **Valence electrons**= _____

Lewis Structures (Electron Dot Diagrams)

A Lewis structure is in a sense a shortcut for representing the structure of an atom.

A Lewis structure contains 2 parts

1. **element symbol** (representing the nucleus) and 2. **dots** (representing valence electrons)

Ex: N has 5 valence electrons, so it's Lewis structure would look like:

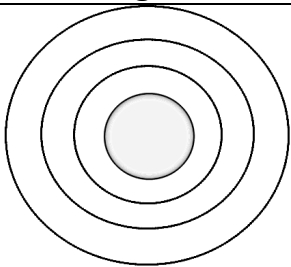
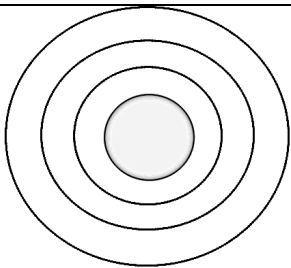
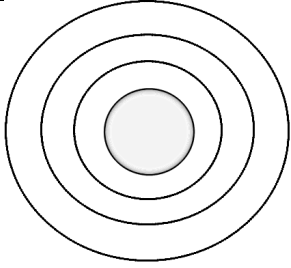
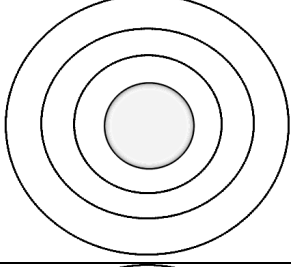
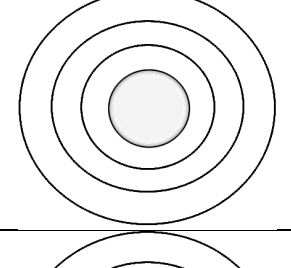
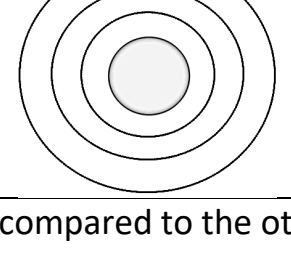


Note: by convention, you should not have more than **2 electrons per "side"**

The maximum number of valence electrons you can have is 8.

Practice: Bohr Diagrams, Electron Configuration, Valence Electrons

Element	Subatomic Particles	Bohr Diagram	# Valence Electrons	Lewis Structure
Carbon ${}^{12}_{6}\text{C}$	# protons=6 # neutrons=6 # electrons=6		4	$\cdot \ddot{\text{C}} \cdot$
Sulfur S	# protons= # neutrons= # electrons=			

Element	Subatomic Particles	Bohr Diagram	# Valence Electrons	Lewis Structure
Helium ${}^4_2\text{He}$	# protons= # neutrons= # electrons=			
N	# protons= # neutrons= # electrons=			
Na	# protons= # neutrons= # electrons=			
Al^{+3}	# protons= # neutrons= # electrons=			
Cl^{-1}	# protons= # neutrons= # electrons=			
Ne	# protons= # neutrons= # electrons=			

*Look at the atomic structure for Neon compared to the other elements. What is different about its outermost shell?

**What happens to the # of valence electrons when an atom becomes an ion?