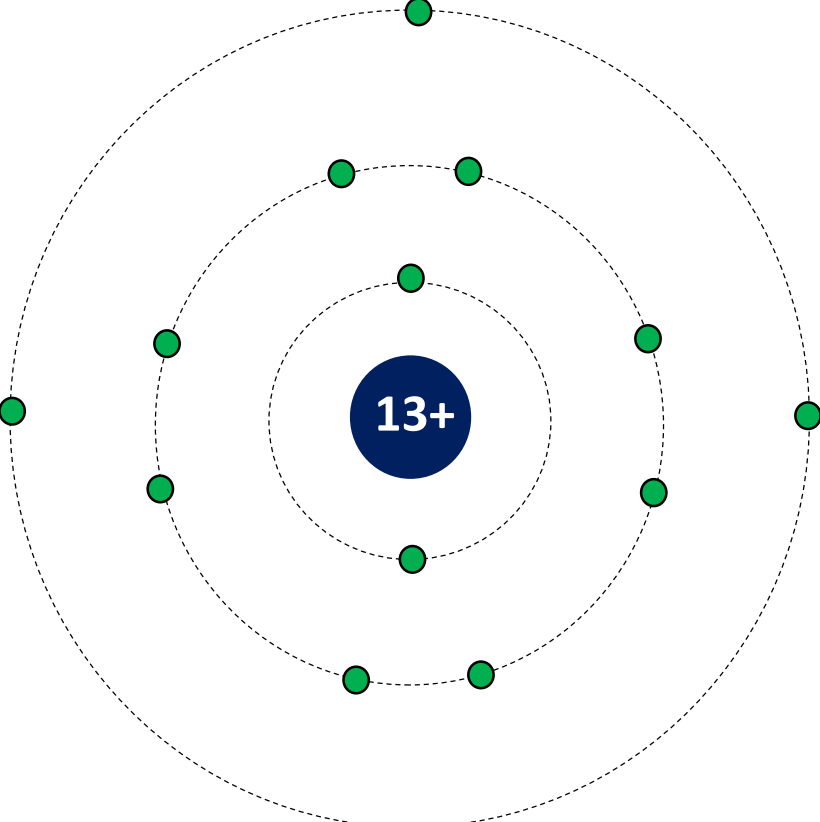
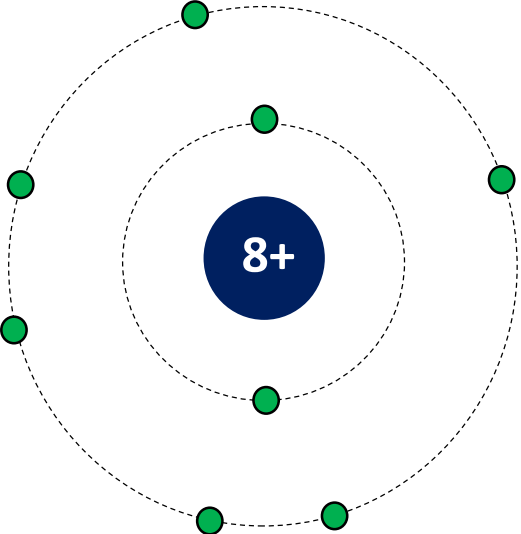


Valence Electrons & Lewis (Dot) Diagrams

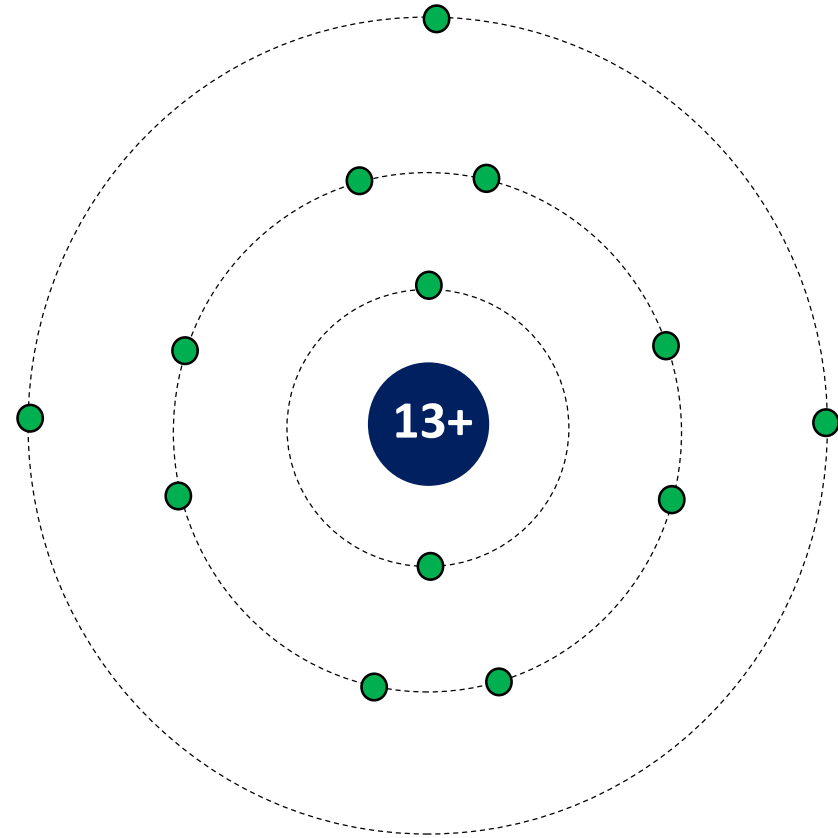
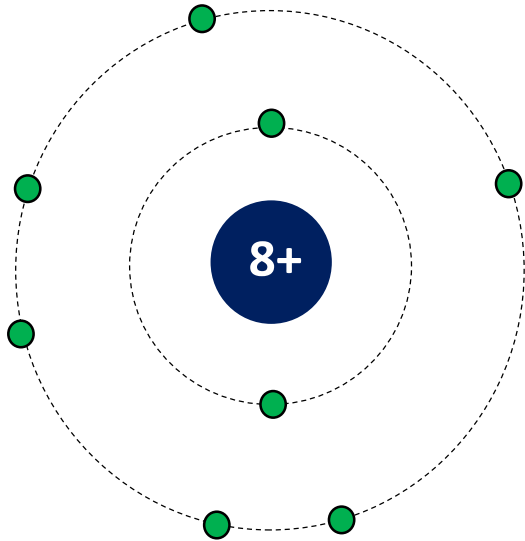


Gilbert Lewis
(1875 – 1946)

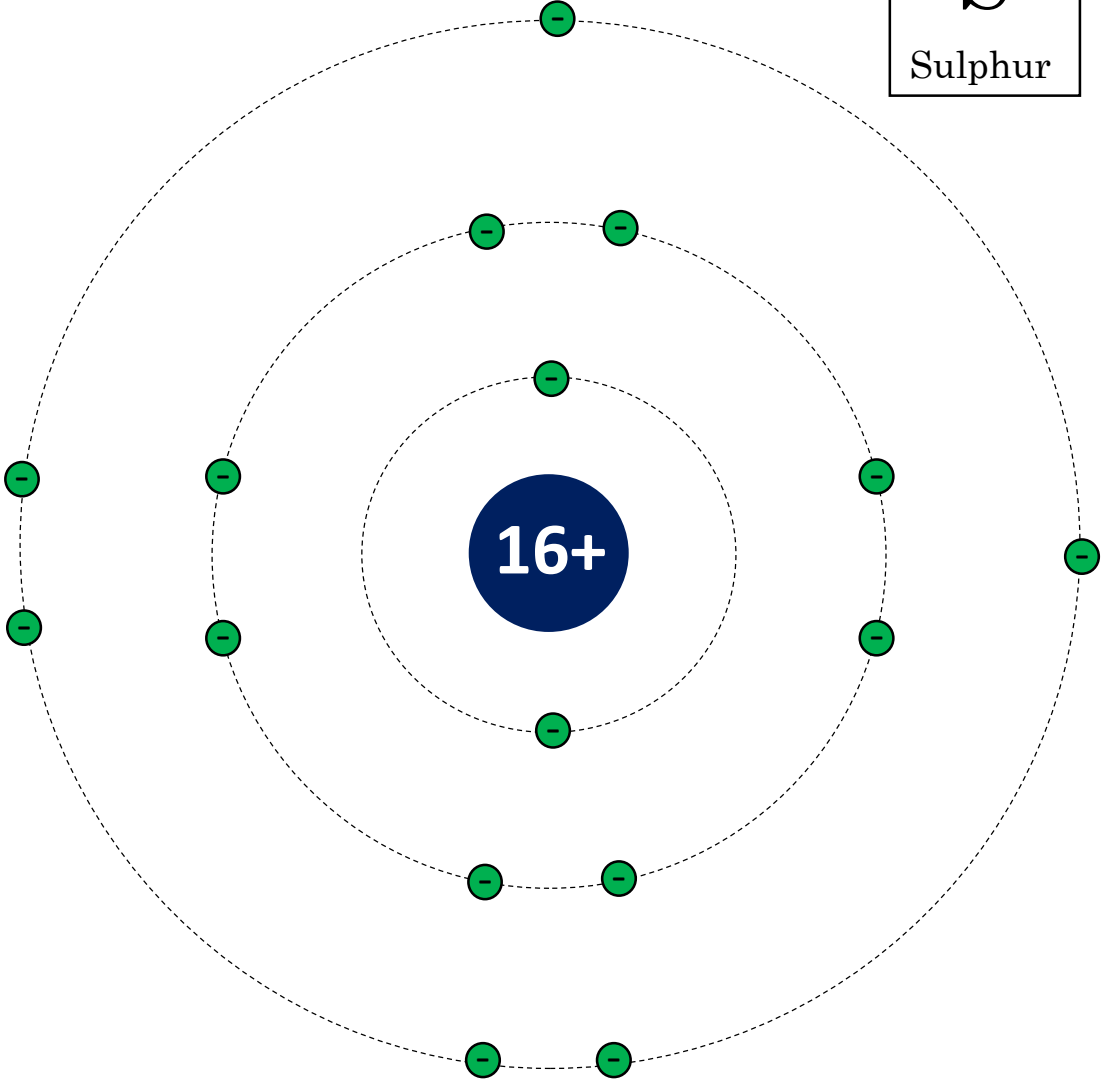
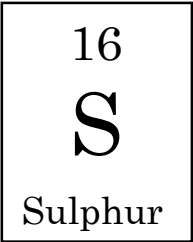
Valence electrons:



Valence electrons: Electrons that are located in the outermost energy level.



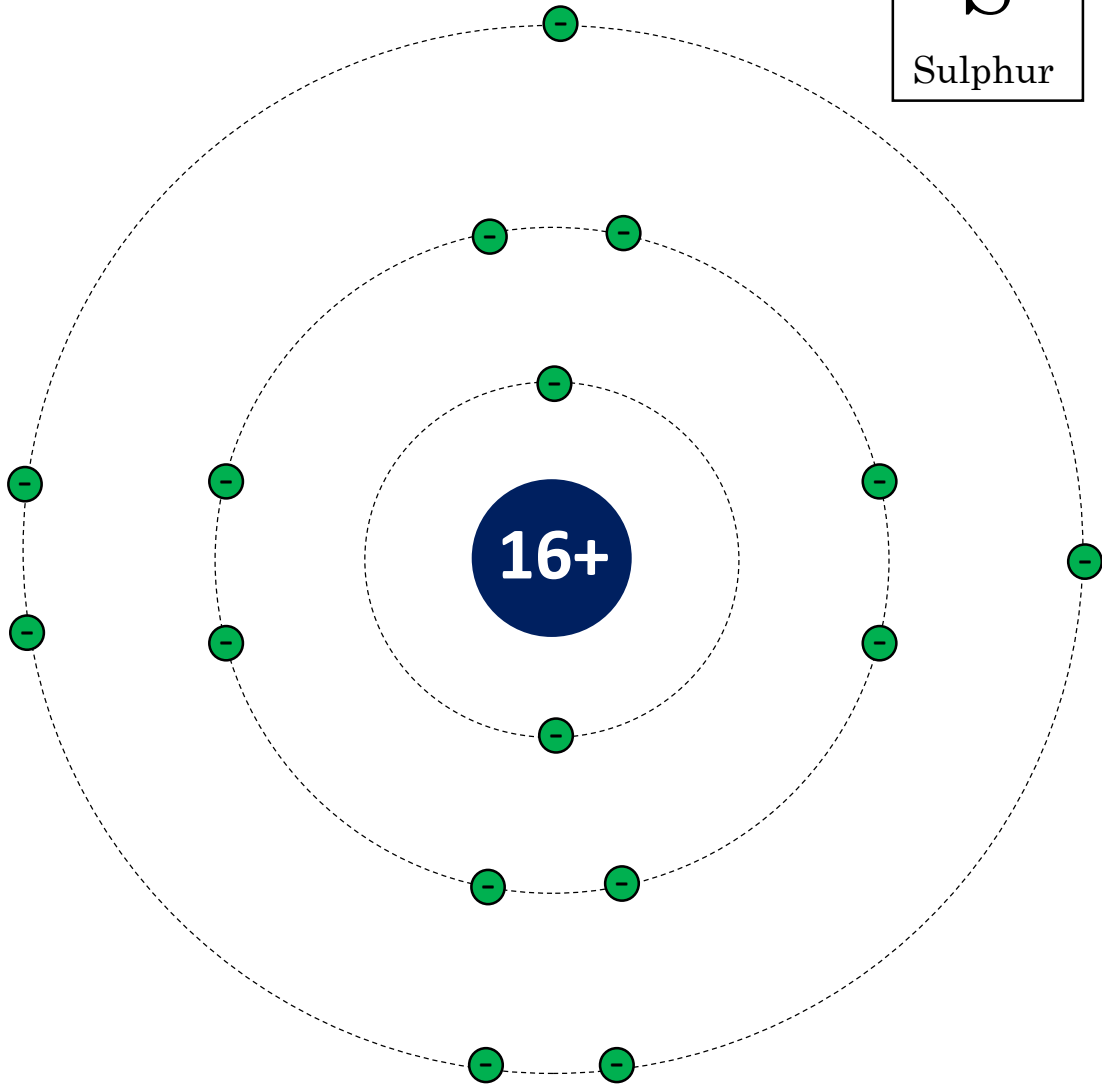
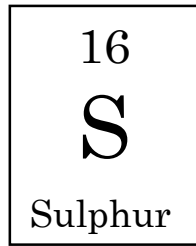
Recall: Bohr–Rutherford Diagrams



But I don't want to draw all those circles of electrons...



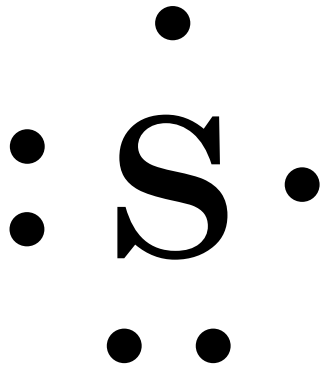
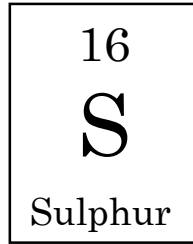
Recall: Bohr–Rutherford Diagrams



The most important electrons are the **valence** electrons.



Lewis (Dot) Diagram:



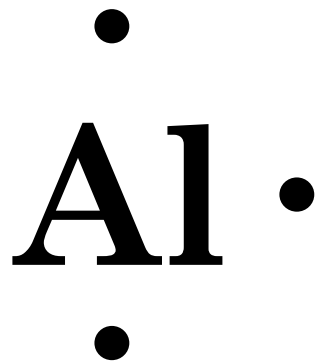
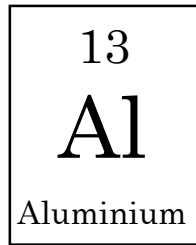
Let's just draw the chemical symbol and the valence electrons.

Each dot around the chemical symbol will represent a valence electron.

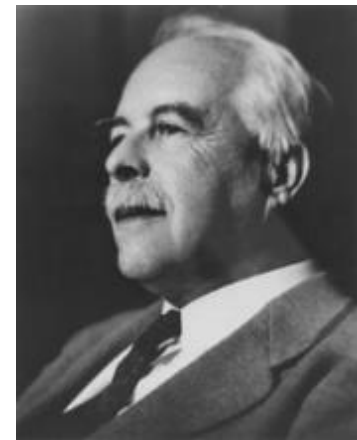


Lewis (Dot) Diagram:

Example 2: Aluminium

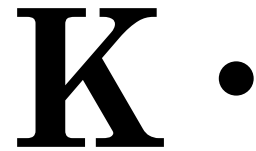
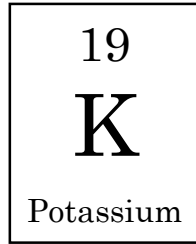


Aluminium atoms have
3 valence electrons.



Lewis (Dot) Diagram:

Example 3: Potassium

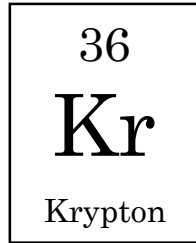
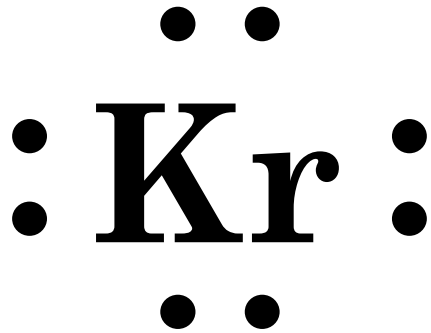


Potassium atoms only
have **1 valence** electron.



Lewis (Dot) Diagram:

Example 4: Krypton



Even atoms with more than 20 electrons are easy.

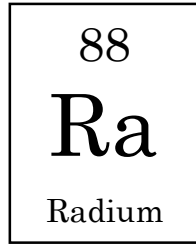
Krypton is in group 8A.

Krypton atoms have **8 valence** electrons.



Lewis (Dot) Diagram:

Example 5: Radium

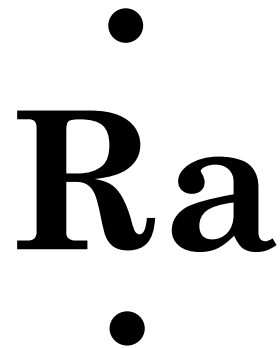
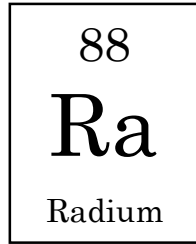


Radium is in group 2A.
Radium atoms have **2**
valence electrons.



Lewis (Dot) Diagram:

Example 5: Radium



I wonder what a Bohr-Rutherford diagram of radium would look like.



