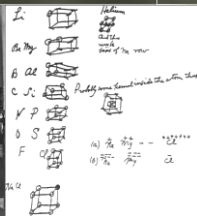
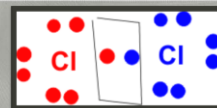


Lewis Dot Diagram

1916



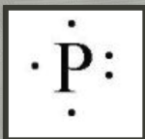
Electron dot diagrams, which are also called Lewis dot diagrams, are very useful tools in Chemistry.



They will give you the ability to *determine the type(s) of covalent bonds* that an element may make in certain situations.

They can also be used to *predict the type of ion that an atom might make when it forms an ion.*

Each dot diagram consists of; an *elemental symbol*, which represents the *center of the atom*, and a *group of 1-8 dots* which shows the *configuration of the outer-most electron shell* of the atom, also called the *valence shell*



The "O" in the example represents the *center of the atom (nucleus)*.



Each of the four "sides" of the symbol represents an *orbital in the outermost energy level of the atom*.

Since each orbital can hold only *two electrons*, the *sides of the dot diagram can only hold up to two dots*. The six dots show the configuration of the valence electrons.

To make a Lewis dot diagram, you need to know how many *electrons are in the valence shell*



The **valence electrons** are the *electrons in the last shell or energy level of an atom*

Begin by filling in *up to two electrons on one side* of the elemental symbol. Place the remaining dots in either a *clockwise or counter clockwise manner*, with *no side receiving two dots until each side gets one*.

Remember that *each side can only hold up to two dots*.

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Homework

ON the back of the *Valence Clues Worksheet*, draw Lewis Dot Diagrams for the following elements:

- 1) Strontium**
- 2) Bismuth**
- 3) Xenon**
- 4) Nitrogen**