Worksheets Video-Lesson 6

Key Ideas

- Covalent bonds, which is a chemical bond that allows non-metals to bond with non-metals.
- Covalent bonding is when atoms share electrons
- The atoms share electrons in a way that makes them achieve stability, like that of a noble gas.
- They share electrons so that their valence shell are full, with eight electrons. Two in the case of hydrogen.
- When drawing Lewis diagrams, it is all about the valence electrons.

The five steps in drawing Lewis diagrams:

1. Count the valence diagrams
2. Determine the central atom
3. Draw single bonds
4. Draw all remaining valence electrons as lone pairs
5. Turn lone pairs into double or triple bonds to satisfy the octet rule (duet for hydrogen)
    a. One line = single bond = 2 electrons
    b. Two lines = double bond = 4 electrons
    c. Three lines = triple bond = 6 electrons

Complete:

Table 6.a. Draw the Lewis diagrams for the following atoms.

1	Hydrogen	
2	Carbon	
3	Nitrogen	
4	Oxygen	
5	Fluorine	
6	Phosphorus	
7	Sulfur	
8	Chlorine	

Table 6.b. Draw the Lewis diagrams for the following diatomic molecules. Diatomic = 2 atoms that are the same.

1	Hydrogen	
2	Nitrogen	
3	Oxygen	
4	Fluorine	
5	Chlorine	

Table 6.c. Draw the Lewis diagrams for the following molecules. One is very fresh smelling, one is odourless, and three are quite smelly, one which smells like rotten eggs.

1	H_2O Water	
2	CO_2 Carbon dioxide	
3	O_3 Ozone	
4	NH_3 Ammonia	
5	H2S Hydrogen sulphide	
6	CH4 Methane	

Congratulations!
You completed everything.