Subject; Integrated Science/Chemistry

Level: Form 3

Topic: Naming of simple covalent compounds

Key points:

- Covalent compounds can be named using the number of atoms in the formula. The names of the number of atoms are presented in Table 1 below.

TABLE 1: Name of the number of atoms

Name	Number of atoms
Mono	1
Di	2
Tri	3
Tetra	4
Penta	5
Hexa	6
Septa	7
Octa	8
Nona	9
Deca	10

- The steps in naming simple covalent compounds are illustrated in the diagram below.

1. Analyse the compound to determine the number of atom(s) of each element

2. Write the name of the 1st non-metal

NAMING SIMPLE COVALENT COMPOUNDS

3. Write the name of the2nd non-metal changing the ending to -ide

4. Add prefix to show how many atoms of each element is present. Mono is not always written for the 1st element.If There are 1 atom each of the 2 elements, mono is not used.

For example, CO_2

1. There are one atom of carbon and two atoms of oxygen
2. Carbon
3. Oxygen (oxide)
4. Mono is NOT written for the 1st element, second element- di

Therefore, the name of the compound is carbon dioxide

Activity:

A.) The formulae of five (5) simple covalent compounds are given in Table 2

Using the example given in the key points, name the five (5) simple covalent compounds given.

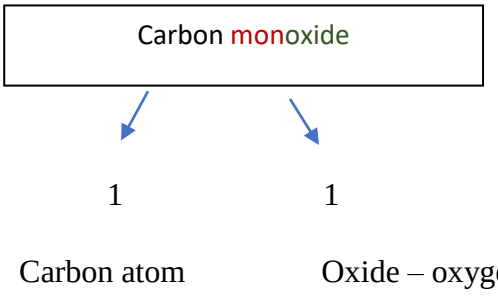
TABLE 2

FORMULA	NAME
CO_2	
PCl_5	
HCl	
SCl_4	
N_2O_4	

B.) The names of five (5) simple covalent compounds are given in Table 3 below.

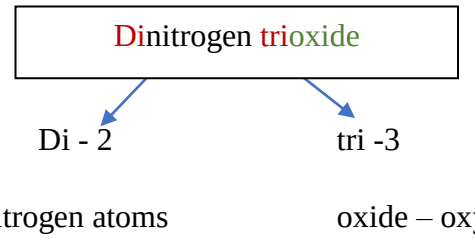
Using the two (2) examples given here, write the formula of each of the compound given in the blank space in Table 3.

Example 1



Therefore, the formula of the compound – CO

Example 2



Therefore, the formula of the covalent compound – N_2O_3

TABLE 3

NAME	FORMULA
Silicon dioxide	
Oxygen gas	
Sulphur trioxide	
Nitrogen monoxide	
Phosphorus trichloride	

Assessment:

Table 4 summarises the naming of simple covalent compounds.

Fill in the blanks to complete the table.

TABLE 4

FORMULA OF COMPOUND	# OF ATOM (s) OF THE 1^{ST} ELEMENT	# OF ATOM(s) OF THE 2^{ND} ELEMENT	NAME OF COMPOUND
PF_3		3	
			Hydrogen iodide
NH_3			Nitrogen trihydride (ammonia)
SCl_6	1		
P_2O_5		5	

Answer Key:

Activity A

TABLE 2

FORMULA	NAME
CO_2	Carbon dioxide
PCl_5	Phosphorus pentachloride
HCl	Hydrogen chloride
SCl_4	Sulphur tetrachloride
N_2O_4	Dinitrogen tetroxide

Activity B

TABLE 3

NAME	FORMULA
Silicon dioxide	SiO_2
Oxygen gas	O_2
Sulphur trioxide	SO_3
Nitrogen monoxide	NO
Phosphorus trichloride	PCl_3

Assessment

TABLE 4

FORMULA OF COMPOUND	# OF ATOM (s) OF THE 1^{ST} ELEMENT	# OF ATOM(s) OF THE 2^{ND} ELEMENT	NAME OF COMPOUND
PF_3	1	3	Phosphorous Trifluoride
HI	1	1	Hydrogen iodide
NH_3	1	3	Nitrogen trihydride (ammonia)
SCl_6	1	6	Sulphur hexachloride
P_2O_5	2	5	Diphosphorus pentaoxide