

Experiment worksheet

3.6 Non-metals combine to form covalent compounds

Pages 80–81 and 199

Challenge 3.6: Modelling covalent molecules

Aim

To model the sharing of electrons in covalent molecules.

What you need

- Molecular modelling kits (or use different coloured marshmallows and toothpicks)

What to do

- 1 Choose three different colours to represent carbon, hydrogen and oxygen.
- 2 For each of the molecules shown in the results table:
 - a state the numbers of each atom
 - b make and draw a model of the molecules
 - c draw the number of electrons in the valency shell of each atom including the shared electrons.

Results

Copy and complete the following table.

Molecule	Atoms present	Numbers of each atom	Drawing of model	Electron dot diagrams
H ₂				
H ₂ O				
CH ₄				
CO ₂				
CHCl ₃				

Discussion

- 1 What type of bond occurs between a metal and a non-metal?

- 2 What type of bond occurs between two non-metals?



Name:

Class:

3 What is a valency shell?

4 What is meant by the term 'sharing electrons' in covalent bonds?

Conclusion

What do you know about covalent bonds?