

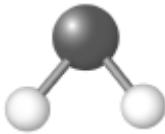

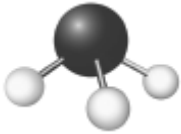
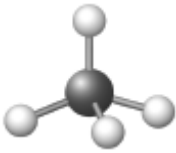
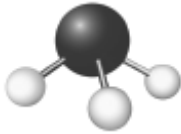


CHAPTER 1	Investigation 1.A Modelling Molecules Answer Key	BLM 1.1.6A
ANSWER KEY		

Lewis Structures and Molecular Shapes of Some Simple Molecules Built Using a Model Kit

Name	Formula	Lewis Structure of Compound	Three Dimensional Sketch of Model
Hydrogen	H ₂	H : H	
Chlorine	Cl ₂	$ \begin{array}{c} \cdot\cdot \\ :\text{Cl} : \text{Cl} : \\ \cdot\cdot \end{array} $	
Water	H ₂ O	$ \begin{array}{c} \text{H} \\ \cdot\cdot \\ :\text{O} : \text{H} \\ \cdot\cdot \end{array} $	
Carbon dioxide	CO ₂	$ \begin{array}{c} \cdot\cdot \\ :\text{O} :: \text{C} :: \text{O} : \\ \cdot\cdot \end{array} $	
Ammonia	NH ₃	$ \begin{array}{c} \cdot\cdot \\ \text{H} : \text{N} : \text{H} \\ \cdot\cdot \\ \text{H} \end{array} $	
Carbon tetrachloride	CCl ₄	$ \begin{array}{c} \cdot\cdot \\ :\text{Cl} : \\ \cdot\cdot \\ :\text{Cl} : \text{C} : \text{Cl} : \\ \cdot\cdot \\ :\text{Cl} : \\ \cdot\cdot \end{array} $	
Nitrogen trifluoride	NF ₃	$ \begin{array}{c} \cdot\cdot \quad \cdot\cdot \quad \cdot\cdot \\ :\text{F} : \text{N} : \text{F} : \\ \cdot\cdot \quad \cdot\cdot \quad \cdot\cdot \\ :\text{F} : \\ \cdot\cdot \end{array} $	

Answers to Analysis Questions

1. Distinguish between differences caused by errors and differences in the view taken of the structure. (One being the upside-down version of the other, etc.)
2. The three-dimensional nature of the structures and the relative lengths and angles of bonds may be better represented by models than by Lewis structures.

CHAPTER 1	Investigation 1.A Modelling Molecules Answer Key (cont'd)	BLM 1.1.6A
ANSWER KEY		

3.

Strengths of using molecular kits	Limitations of using molecular kits	What can be deduced from the models	Features not deduced from the models
<ul style="list-style-type: none"> model is three-dimensional 	<ul style="list-style-type: none"> model is not an accurate representation of molecular structure (it does not accurately portray what atoms and bonds look like) 	<ul style="list-style-type: none"> general shape of the molecule number and ratio of atoms in the molecule direction and number of the bonds 	<ul style="list-style-type: none"> actual appearance of molecules position of non-valence electrons strength of the bonds actual size of the atoms