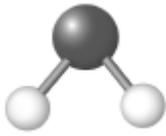
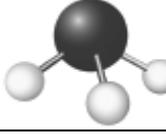
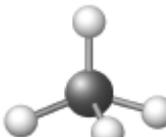
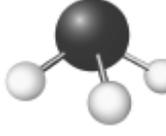


CHAPTER 1	Investigation 1.A Modelling Molecules Answer Key	BLM 1.1.6A
ANSWER KEY		

### 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 <sub>2</sub>	H:H	
Chlorine	Cl <sub>2</sub>	$\begin{array}{c} \cdot\cdot \\ : \text{Cl} : \text{Cl} : \\ \cdot\cdot \end{array}$	
Water	H <sub>2</sub> O	$\begin{array}{c} \text{H} \\ \cdot\cdot \\ : \text{O} : \text{H} \\ \cdot\cdot \end{array}$	
Carbon dioxide	CO <sub>2</sub>	$\cdot\cdot \text{O} :: \text{C} :: \text{O} \cdot\cdot$	
Ammonia	NH <sub>3</sub>	$\begin{array}{c} \cdot\cdot \\ \text{H} : \text{N} : \text{H} \\ \cdot\cdot \\ \text{H} \end{array}$	
Carbon tetrachloride	CCl <sub>4</sub>	$\begin{array}{c} \cdot\cdot \\ : \text{Cl} : \\ \cdot\cdot \\ : \text{Cl} : \text{C} : \text{Cl} : \\ \cdot\cdot \\ : \text{Cl} : \\ \cdot\cdot \end{array}$	
Nitrogen trifluoride	NF <sub>3</sub>	$\begin{array}{c} \cdot\cdot \cdot\cdot \cdot\cdot \\ : \text{F} : \text{N} : \text{F} : \\ \cdot\cdot \cdot\cdot \cdot\cdot \\ : \text{F} : \\ \cdot\cdot \end{array}$	

### 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.

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

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"> <li>▪ model is three-dimensional</li> </ul>	<ul style="list-style-type: none"> <li>▪ model is not an accurate representation of molecular structure (it does not accurately portray what atoms and bonds look like)</li> </ul>	<ul style="list-style-type: none"> <li>▪ general shape of the molecule</li> <li>▪ number and ratio of atoms in the molecule</li> <li>▪ direction and number of the bonds</li> </ul>	<ul style="list-style-type: none"> <li>▪ actual appearance of molecules</li> <li>▪ position of non-valence electrons</li> <li>▪ strength of the bonds</li> <li>▪ actual size of the atoms</li> </ul>