

**Exercise 4 data sheet (page 1 of 4)**

Chemical formula	Lewis dot structure	Number of bonds ( <b>bonded pairs</b> ) around central atom	Number of <b>lone pairs</b> around central atom	Description of electron pair arrangement	Molecular <b>shape</b> prediction	Sketch of model (please indicate if the <b>angles</b> made by bonds coming off the central atom will be ideal, less than ideal or more than ideal)	<b>Polar?</b> (if yes, sketch the direction of the dipole moment)
NH <sub>3</sub>	H:N:H H	3	1	tetrahedral	trigonal pyramidal	Less than ideal	Yes
H <sub>2</sub> S							
PBr <sub>3</sub>							
SiCl <sub>4</sub>							

Exercise 4 data sheet (Page 2 of 4)

Chemical formula	Lewis dot structure	# of bonds around central atom	# of lone pairs	Description of electron pair arrangement	Molecular shape prediction	Sketch of model and bond angle assessment	Polar? (if yes, sketch the dipole moment)
SO <sub>2</sub>							
CO <sub>3</sub> <sup>2-</sup>							
SO <sub>3</sub> <sup>2-</sup>							
NO <sub>3</sub> <sup>-</sup>							

Exercise 4 data sheet (page 3 of 4)

Chemical formula	Lewis dot structure	# of bonds around central atom	# of lone pairs	Description of electron pair arrangement	Molecular shape prediction	Sketch of model and bond angle assessment	Polar? (if yes, sketch the dipole moment)
$\text{NO}_2^-$							
$\text{NO}_2^+$							
$\text{NO}_2$ (treat the lone $e^-$ as a lone pair)							
$\text{H}_2\text{O}$							

Exercise 4 data sheet (page 4 of 4)

Chemical formula	Lewis dot structure	# of bonds around central atom	# of lone pairs	Description of electron pair arrangement	Molecular shape prediction	Sketch of model and bond angle assessment	Polar? (if yes, sketch the dipole moment)
CH <sub>3</sub> CH <sub>2</sub> OH (ethanol)							
C <sub>6</sub> H <sub>14</sub> (hexane)							

Sketch of the different mixtures (clearly show any **immiscibility** lines):

Water/ethanol

Water/hexane

Ethanol/hexane