

Apply the VSEPR model to these molecules and predict the shape of the molecules. Look at the structure using the refcode provided and prove why they are that shape. Use the tables below as a guide to set out your answers:

TOP TIP!

When looking at some crystal structures on the database sometimes there will be 2 species on a refcode but you may only need to look at one of them. The two species are ions; one is a positive ion and the other is a negative ion. So there always has to be a positive & negative ion. It is not possible to have 1 ion without the opposite 'counter ion'.



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TOP TIP!

Only count charges on the central atom not charges on the bonded atoms. Also remember that some of the molecules may have lone pairs

1. SO_2

Refcode: *DADXOW*

Formula	
Central Atom	
Valence Shells	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
-1 electron pair for each double bond	
Electron Regions/Shape	

3. $[\text{NO}_2]^-$

Refcode: *VAJRIH*

Formula	
Central Atom	
Valence Shells	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
-1 electron pair for each double bond	
Number of Electron Regions/Shape	

2. $[\text{ClO}_4]^-$

Refcode: *CRAMCB10*

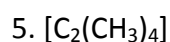
Formula	
Central Atom	
Valence Shells	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
-1 electron pair for each double bond	
Number of Electron Regions/Shape	

4. $[\text{CO}_2(\text{OH})]^-$

Refcode: *BASPAN*

Formula	
Central Atom	
Valence Shells	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
-1 electron pair for each double bond	
Number of Electron Regions/Shape	

I10- VSEPR- Multiple Bonds Worksheet



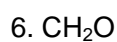
Refcode: *PAPVAD*

Formula	
Central Atom	
Valence Shells	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
-1 electron pair for each double bond	
Number of Electron Regions/Shape	



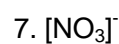
Refcode: *ABIZER*

Formula	
Central Atom	
Valence Shells	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
-1 electron pair for each double bond	
Number of Electron Regions/Shape	



Refcode: *GURNEN*

Formula	
Central Atom	
Valence Shells	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
-1 electron pair for each double bond	
Number of Electron Regions/Shape	



Refcode: *AEUNIC*

Formula	
Central Atom	
Valence Shells	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
-1 electron pair for each double bond	
Number of Electron Regions/Shape	

