

Apply the VSEPR theory to these molecules and predict the VSEPR shape for each molecule. Look at the structure using the refcode provided to confirm that they are that shape. **NOTE: Some of the transition metal centres have the valence electron count to enable you to answer the question.** Use the tables below as a guide to setting out your answers:

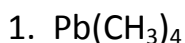
**TOP TIP!**

When looking at some crystal structures on the database there will sometimes be two 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. It is not possible to have 1 ion without the opposite 'counter ion'.



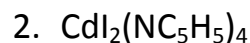
[www.flickr.com/photos](http://www.flickr.com/photos)

Cadmium (Cd) has 6 electrons in its outer shell.



Refcode: *VADRAU*

Formula	
Central Atom	
Valence Electrons	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
No. e-pairs = Base Shape	



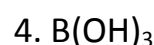
Refcode: *COPGOD*

Formula	
Central Atom	
Valence Electrons	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
No. e-pairs = Base Shape	



Refcode: *ACARBM01*

Formula	
Central Atom	
Valence Electrons	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
No. e-pairs = Base Shape	



Refcode: *JAGREP*

Formula	
Central Atom	
Valence Electrons	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
No. e-pairs = Base Shape	

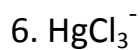
## I2- Using VSEPR to Predict Shapes of Molecules Worksheet



Refcode: *YUHROI*

Osmium (Os) has 4 electrons in its outer shell.

Formula	
Central Atom	
Valence Electrons	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
No. e-pairs = Base Shape	



Refcode: *KUSMAM*

Mercury (Hg) has 2 electrons in its outer shell.

Formula	
Central Atom	
Valence Electrons	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
No. e-pairs = Base Shape	



Refcode: *IYUVAZ*

Formula	
Central Atom	
Valence Electrons	
Surrounding Atoms	
Charge	
Total	
Electron Pairs	
No. e-pairs = Base Shape	