

Shapes of Molecules

On the central atom of the Lewis diagram, there are

STUDENT NOTE
 If you cannot draw or interpret a Lewis diagram, I have videos on these on my YouTube page.

The links shown on this poster are YouTube video links and are case sensitive.

Molecules with names in red are the parent shapes of molecules shown in that row.

Molecules shown are examples only. These are the same molecules found in the videos.

YouTube videos for the Level 2 molecules (first 3 rows) have been scripted to be repetitive so particular sound-bites are easier for you to recall.

TEACHER NOTE
 I have deliberately avoided direct references to VSEPR theory so students do not write "because of VSEPR theory" during assessments.

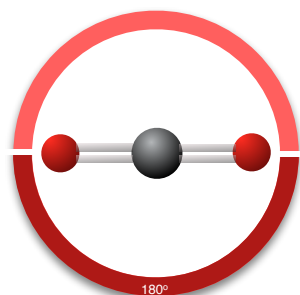
I will also leave the "VSEPR theory" conversation to you and your own students.

Level 3 Chemistry >

2 regions of electron density

<https://youtu.be/QX9HNsM6NzA>

- How to count regions of electron density
- Maximum separation as regions of electron density are negative

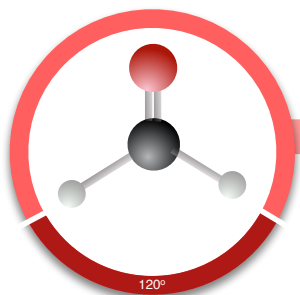


Linear

3 regions of electron density

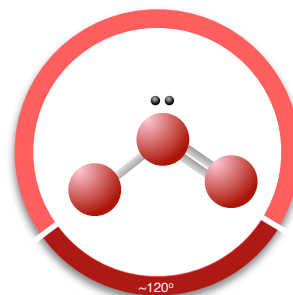
<https://youtu.be/QX9HNsM6NzA?t=2m9s>

- This continues from the video above, this time applying concepts to Lewis diagrams with regions of electron density around the central atom.



Trigonal Planar

where 1 is a lone pair

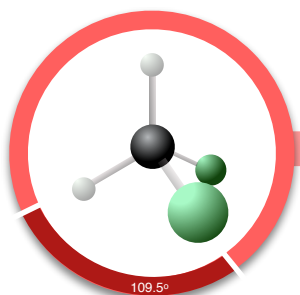


Bent

4 regions of electron density

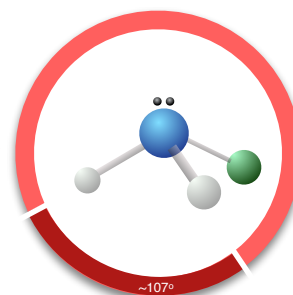
<https://youtu.be/yfsrkn2gELA>

- As we move to Lewis diagrams with 4 regions of electron density around the central atom, we begin to construct possible writing frames.



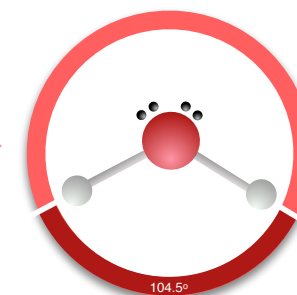
Tetrahedral

where 1 is a lone pair



Trigonal Pyramid

where 2 are lone pairs

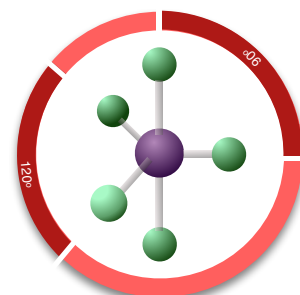


Bent

5 regions of electron density

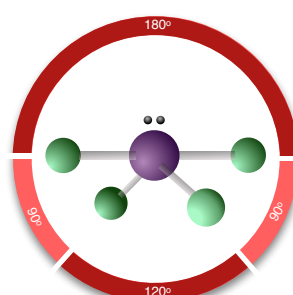
<https://youtu.be/o113GZN5NVk>

- The reasoning behind shapes is similar to what you covered last year in Level 2.
- This video skips the basics and tries to help you see similarities between these molecules to make it easier to remember angles.



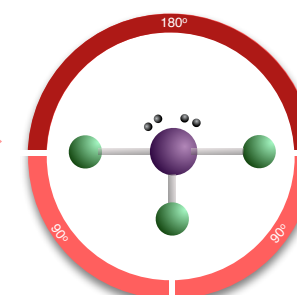
Trigonal Bipyramid

where 1 is a lone pair



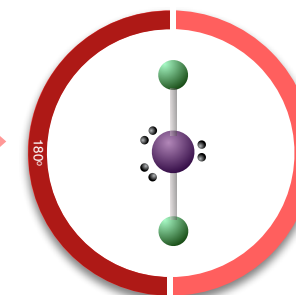
See-Saw

where 2 are lone pairs



T-Shape

where 3 are lone pairs

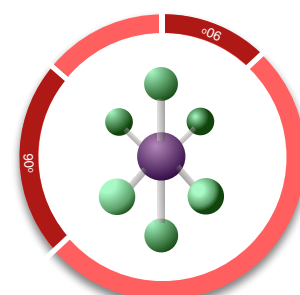


Linear

6 regions of electron density

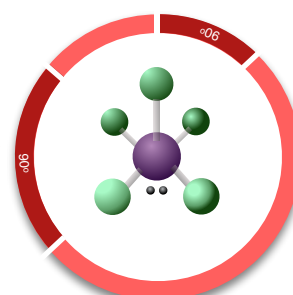
<https://youtu.be/X91t42zjDkc>

- Similar to above.



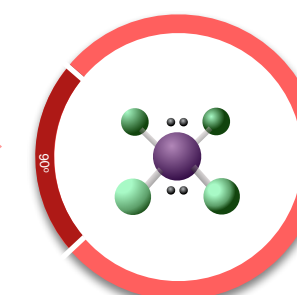
Octahedral

where 1 is a lone pair



Square Pyramidal

where 2 are lone pairs



Square Planar