

VSEPR Theory

What it says...

valence shell electron pair repulsion

What it means...

→ e⁻ (bonds/lone pairs) push away from each other ⇒ shape + structure

Some definitions...

things: bonded atoms or lone pairs $H-2 = 0$

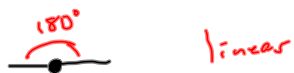
Structure: where the things are

Shape: where the atoms are

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Things and Structure

2

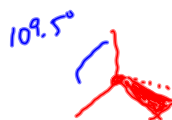


3



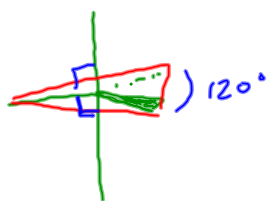
4

tetrahedron



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5 trigonal bipyramid



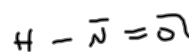
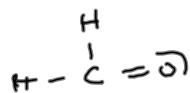
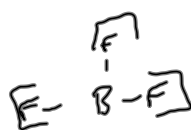
6 octahedron



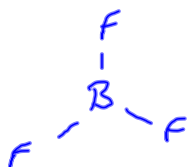
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Structure, electron pairs and shape

BF_3 , CH_2O , HNO



all \approx trigonal planar (structure)

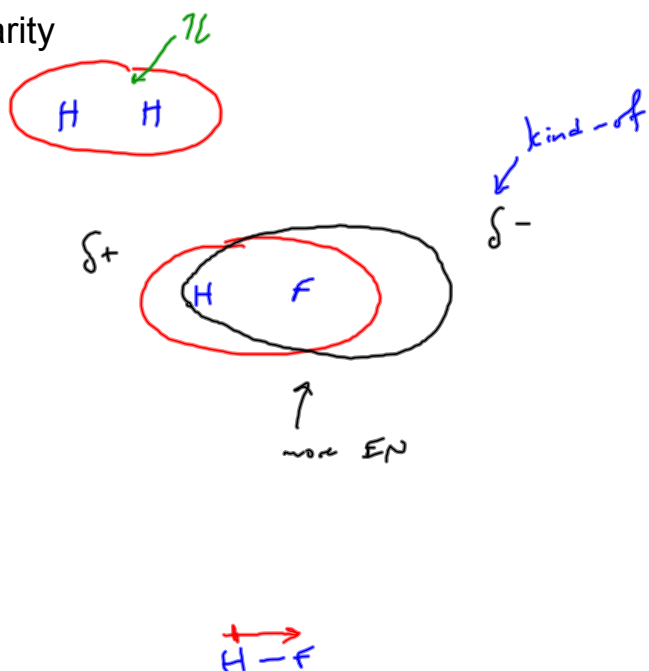


Some images...

The sheet...

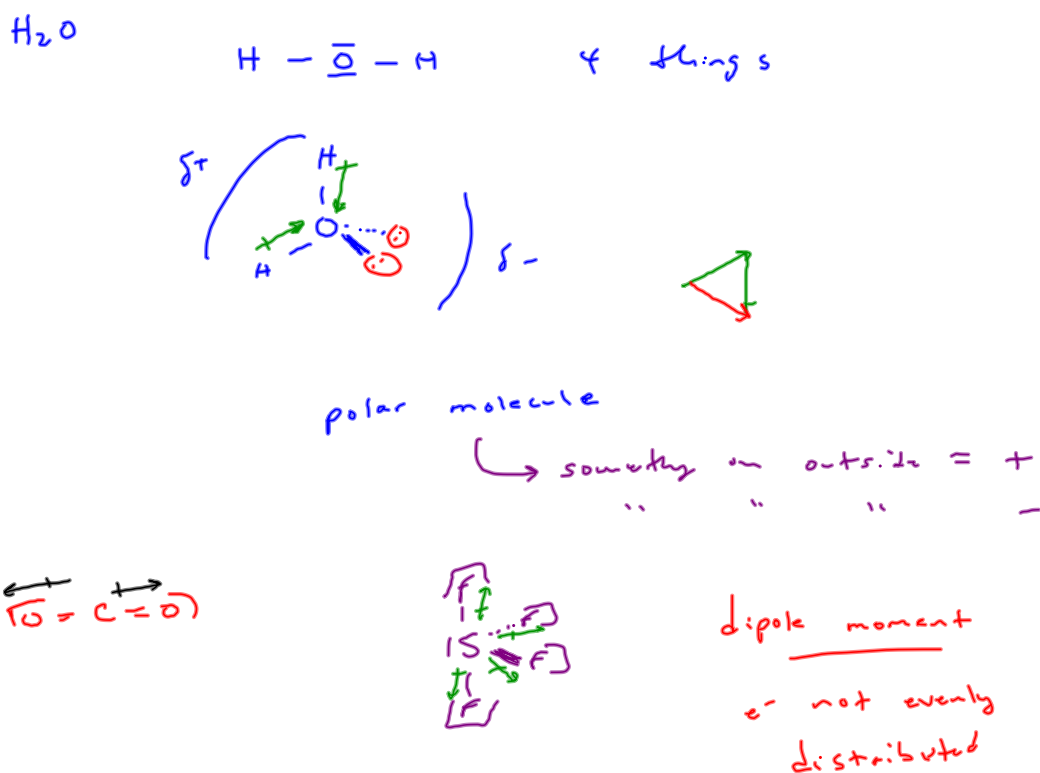
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Bond polarity



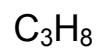
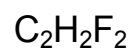
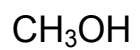
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Tying everything (LDS, VSEPR, polarity) together



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Some for you to try...



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