

**( 8 ) Today**

3.1 Lewis Structures

3.1.1 Resonance and 3.1.3 Formal Charge

3.1.2 Expanded Octets

3.1.4 Failure of Lewis Structures to Predict Unusual Cases

**Next Class ( 9 )**

3.1.4 Failure of Lewis Structures to Predict Unusual Cases

3.2 VSEPR

**(10) Second Class from Today**

3.2 VSEPR

3.3 Molecular Polarity

**Third Class from Today (11)**

4.1 Symmetry elements and Operations

4.2 Point Groups

Pat  
Lewis Structures

table 1

thiocyanate



$$6 + 4 + 5 + 1 = 16/2$$

8 pairs

Connor  
isocyanate

table 2



$$6 + 4 + 5 + 1 = 16/2$$

8 pairs

Emma Fulminate  
Section 3.1

table 3

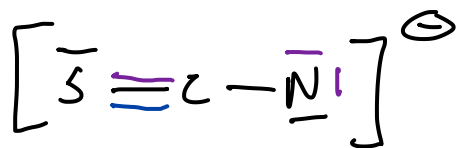
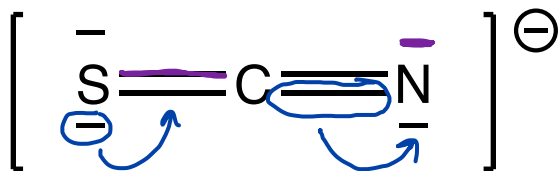
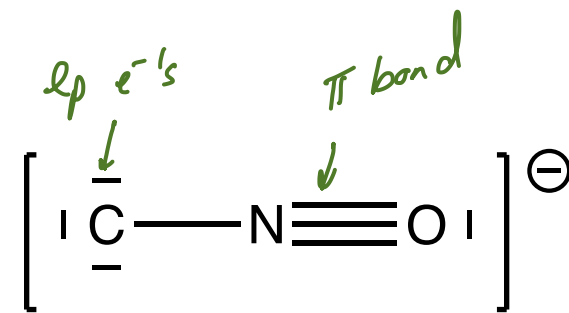
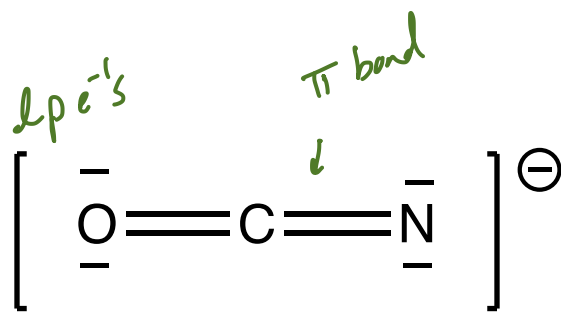
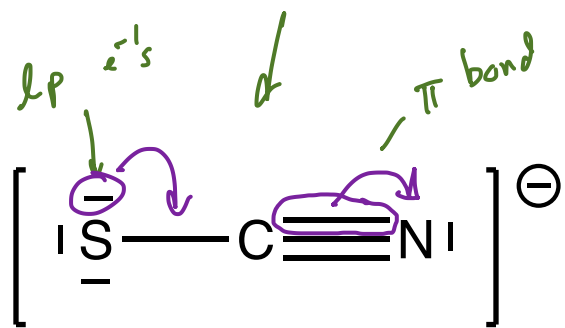


$$4 + 5 + 6 + 1 = 16/2$$

8 pairs

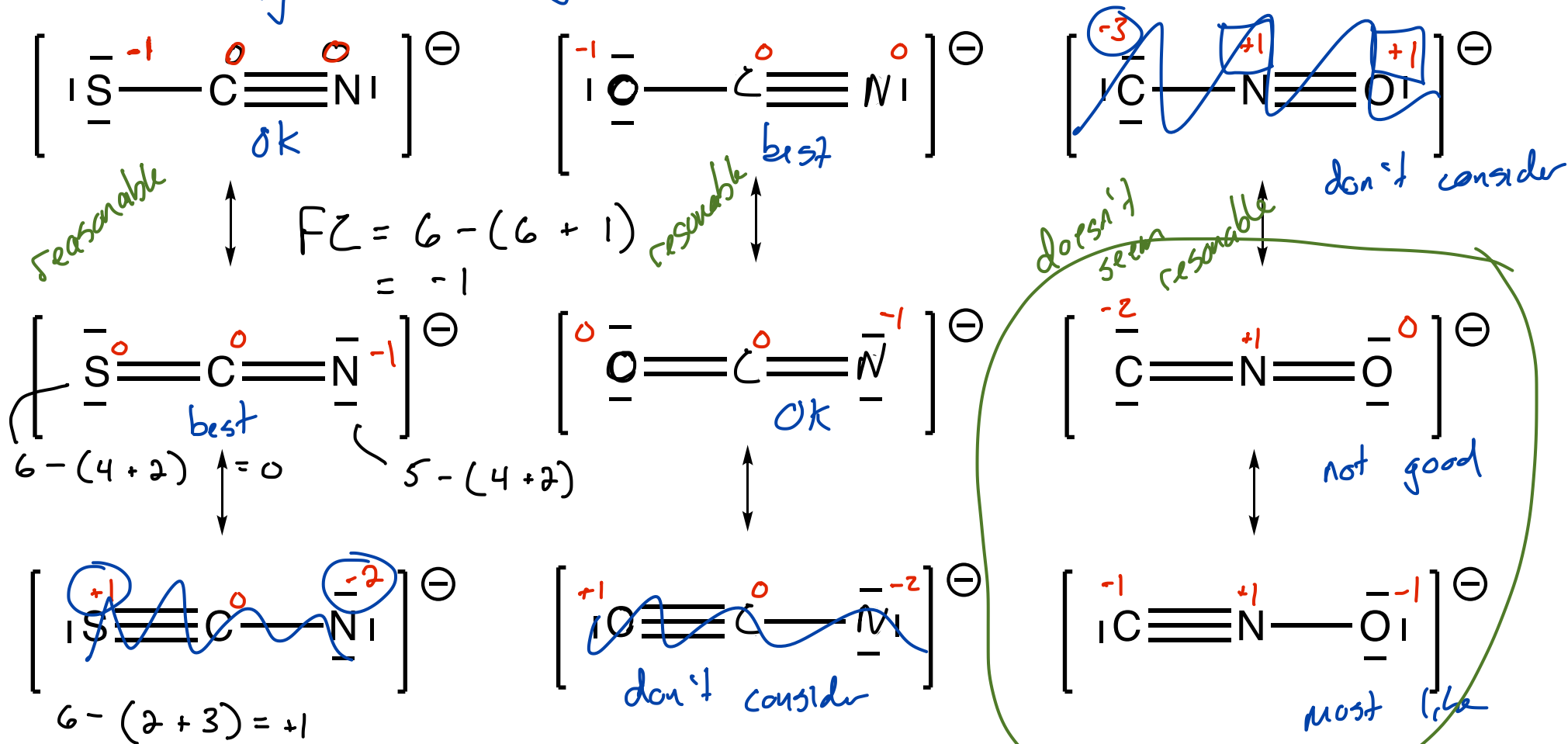
Lewis Structures: Resonance + electron delocalization

Section 3.1.1



isoelectronic      same # of atoms  
 same # of e<sup>-</sup>

Lewis Structures: Formal Charge each contributor is drawn Section 3.1.3  
 to contribute to our understanding of the molecule  
 but they don't always contribute equally



Things that increase the energy of the contributor & make it less important

charge separation, incomplete octets, "wrong" or "unexpected" charges

# Lewis Structures: "Expanded" Shells

## Section 3.1.2

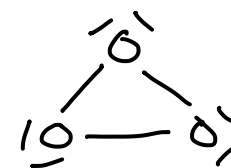
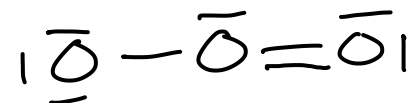
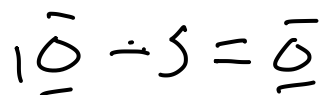
18/2    9 pairs

SO<sub>2</sub>

vs

18/2    9 pairs

O<sub>3</sub>



bond angle = 60° ... no way





1

2

3

4



5

6

7

8

