CONCEPT: MULTIPLE BONDS

- In order to draw a correct Lewis Structure, multiple bonds between elements are sometimes necessary.
  - □ **Single Bond**: The _____ and _____ form of a covalent bond that directly connects elements together.
    - Has _____ *bond energy* and _____ *bond stability*.
    - **Bond Energy:** energy required to break a bond in kJ and determines *bond stability*.

Multiple Bonds			
Bond Type	**Single Bond**	**Double Bond**	**Triple Bond**
Bond Length	C——C	C=C	C≡C
Valence electrons shared	____ (1 electron pair)	____ (2 electron pairs)	____ (3 electron pairs)
Bond Strength	_____	_____	_____
Bond Energy & Stability	_____	_____	_____

EXAMPLE: Which of the following statements best describes the relationship between bond length and bond strength for a series of compounds involving bonds between the same two atoms?

a) The greater the bond strength, the longer the bond.

b) The greater the bond strength, the shorter the bond.

c) Bond length and bond strength are not related.

d) The relationship between bond length and bond strength depends on other factors.

PRACTICE: Identify the least stable covalent bond.

a) N—C b) F—Na c) N=C d) N≡C e) all same strength