Determining Bond & Molecular Polarity: Bonds & molecules are either **Polar** or **Non-Polar**.

1 Complete the chart below (except the last column)

Use Phet Molecule Shapes & http://bit.ly/2Za8zLb chart to help with shape names and determining symmetry.

Compound	Atom with greater EN	EN Difference	Type of Bond(s)	Shape	Electron Symmetry *(yes/no)*	Polar or Non-Polar Molecule?
HCl						
H_2S						
CaO						
PCl_3						

Molecule Polarity Determined by:

a) If all of the bonds are all ionic the polarity is just "**Ionic**"

b) If all of the bonds are non-polar covalent then the molecule is **"Non-Polar"**

*** Unless there are unbound electrons ***

c) If the only bond is polar then the molecule is **"Polar"**

d) If one or more of the bonds are polar then look at symmetry of electron distribution:

- If the polar covalent bonds are arranged in a way that causes them to cancel each other out (ie. linear, tetrahedron, or trigonal planar and all bonds are the same) then the molecules is **"Non-Polar"** due to symmetry
- If the polar covalent bonds or lone pairs of electrons do not cancel each other out (ie. pyramid, linear, or bent) then the molecule is **"Polar"**

2. Label the last column in the chart above "Polar or Non-Polar?" and complete the chart.

3. Complete the chart below.

Compound	Molecule Dot Diagram	Type of Bond(s)	Shape	Electron Symmetry *(yes/no)*	Polar or Non-Polar Molecule?
H_2					
N_2					

Compound	**Molecule Dot Diagram**	**Type of Bond(s)**	**Shape** **Use Phet to help**	**Electron Symmetry** *(yes/no)*	**Polar or Non-Polar Molecule?**
O_2					
$CaCl_2$					
CH_4					
CO_2					
NH_3					
NCl_3					
CF_4					
CCl_4					
NaCl					
H_2O					