

# **Welcome Back!**

- **Find your new seat – the seating list is outside**
- **Get your notebook from the lab benches**
- **Pick up handouts from my lab bench**
- **Glue in handouts**

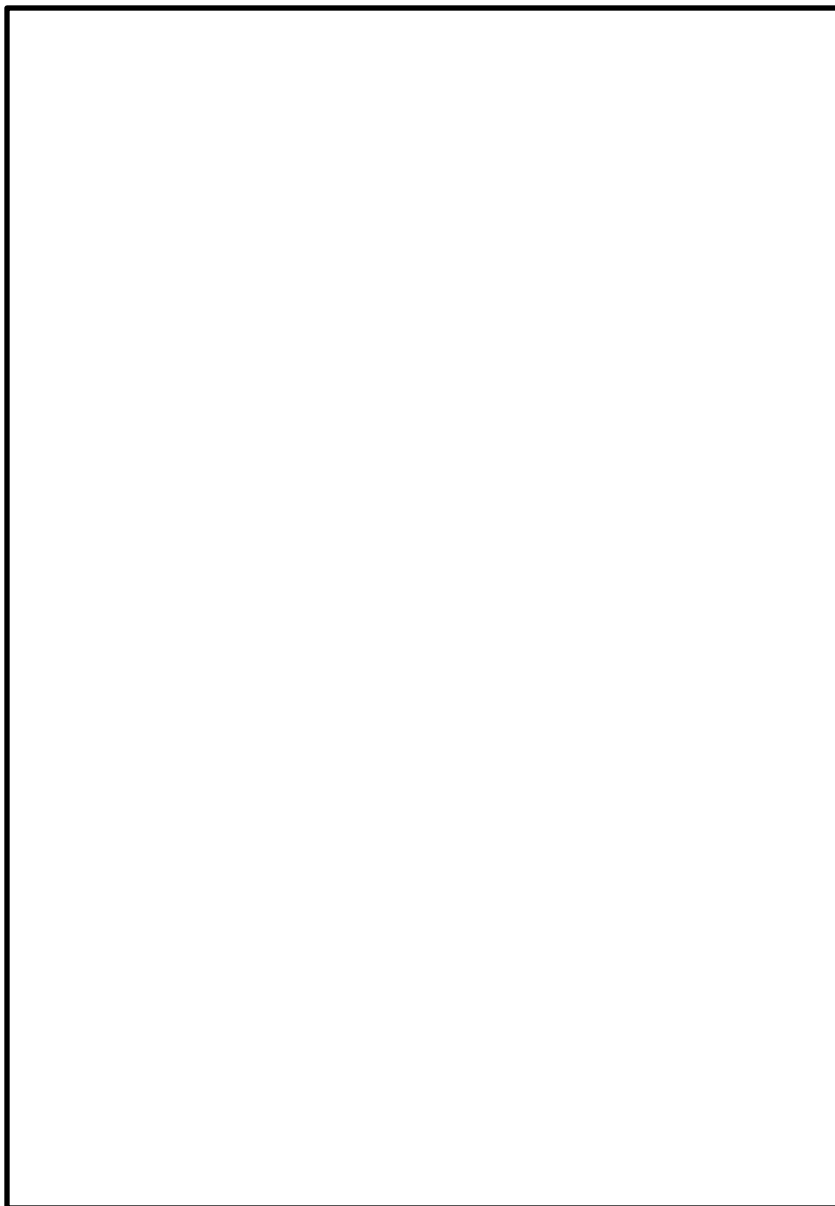
# **Jumpstart 1-A**

- 1) What does it mean if something is symmetrical?**
- 2) Look through your notebook and draw one molecule Lewis Structure that is symmetrical, and one Lewis Structure that is not symmetrical.**

**Symmetrical**

**Not Symmetrical**

# **Polarity**



**Target: I can identify if a molecule is polar or non-polar based on structure**

**Polarity Flow  
Chart  
Handout**

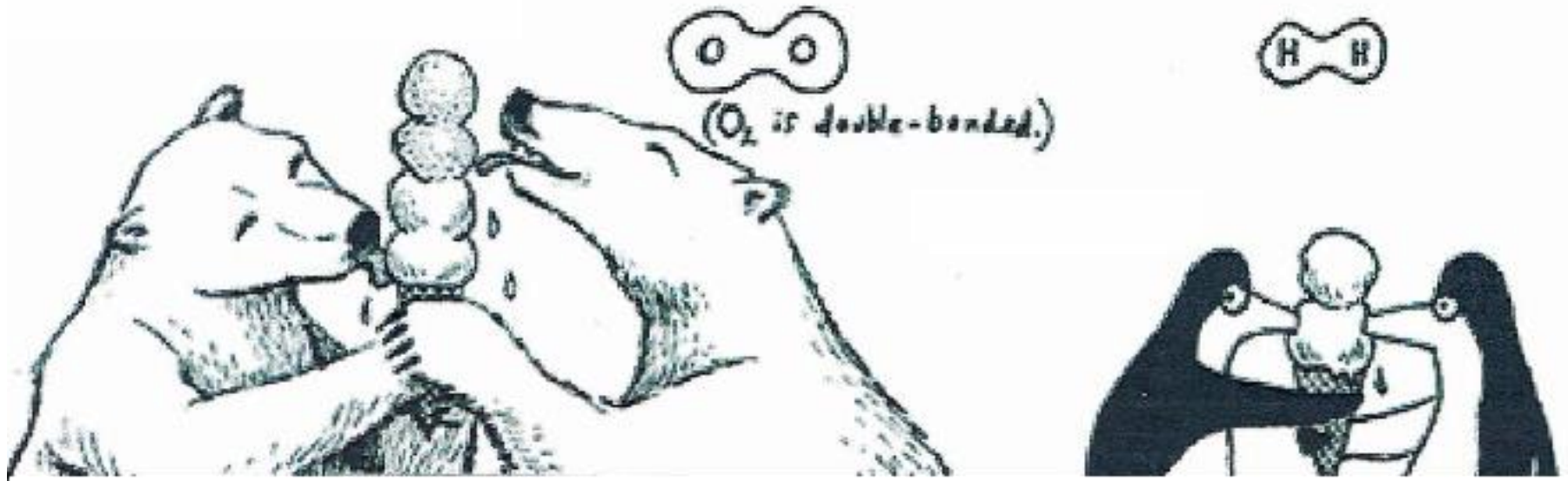
K

C

Q

# What's happening inside covalent molecules like $O_2$ or $H_2$ ?

Electrons are shared *equally*



Example: HF

HF is covalent  
but electrons  
are not shared  
equally

Molecules become  
***POLAR*** when electrons  
are **not shared equally**



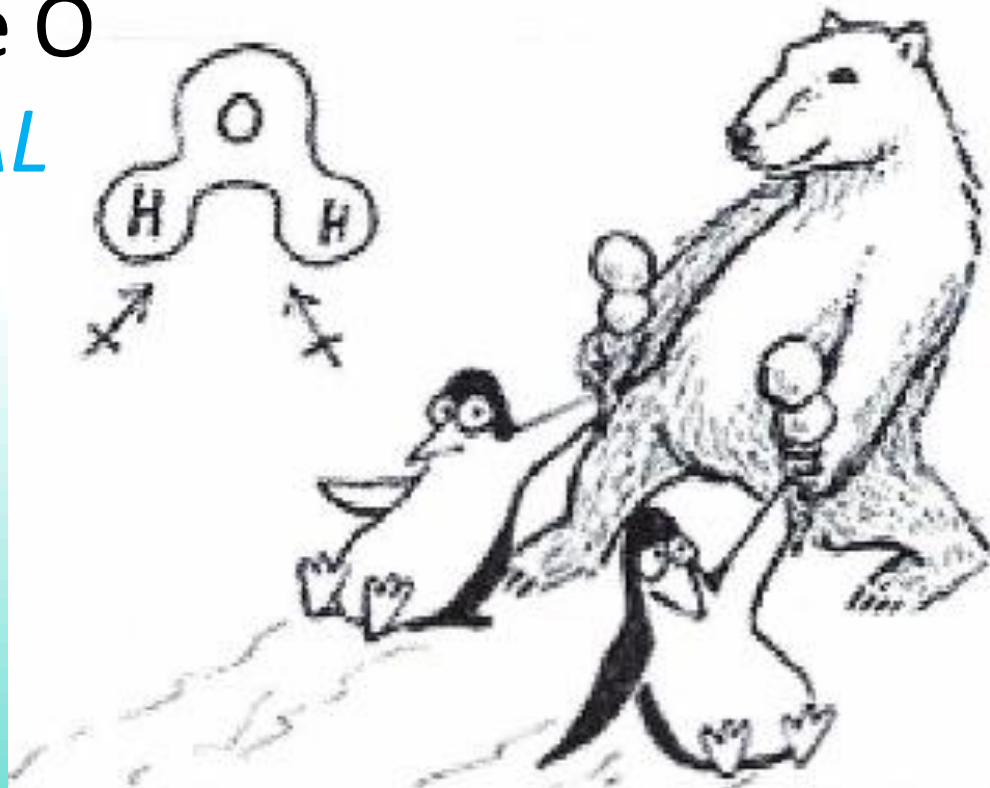
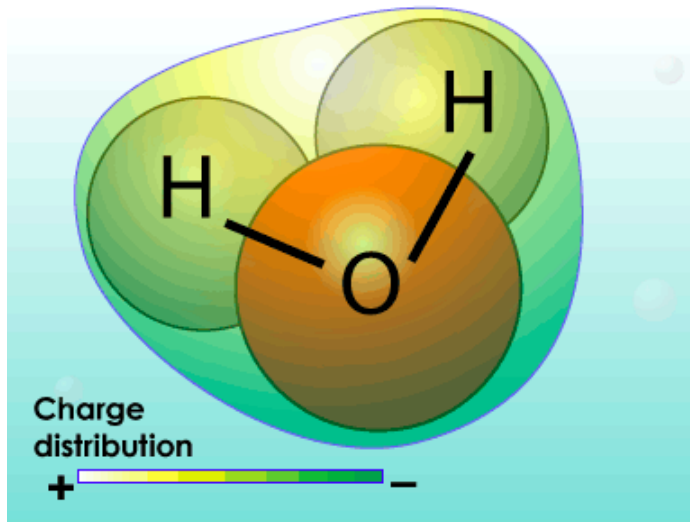
# Polar molecules with more than 2 atoms

## Water has:

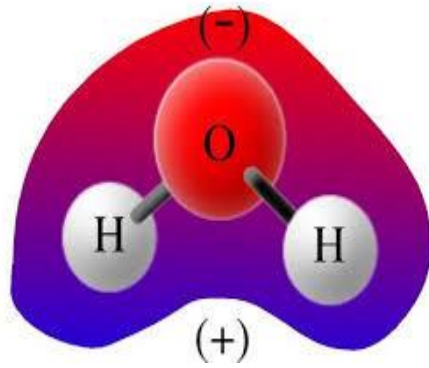
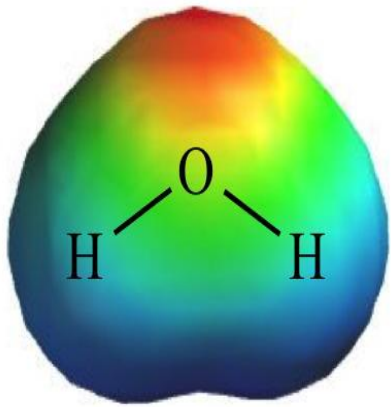
2 H's willing to almost give up electrons

1 electronegative O

*Ends up UNEQUAL*





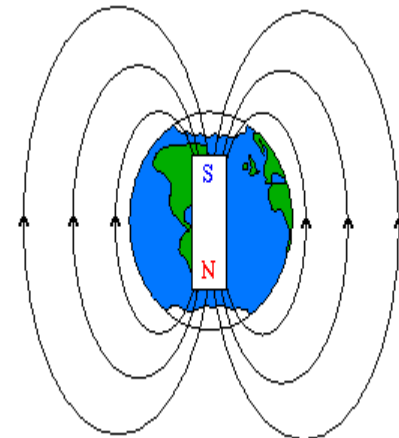
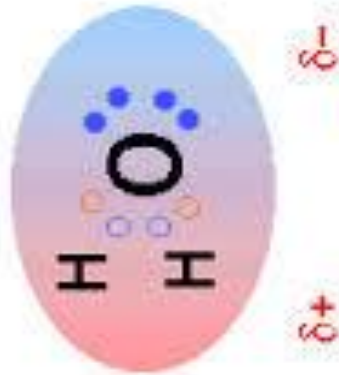
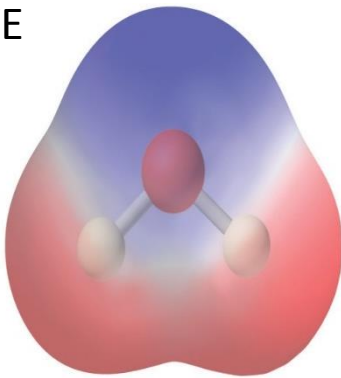


**WATER IS  
A POLAR  
MOLECULE**

NEGATIVE



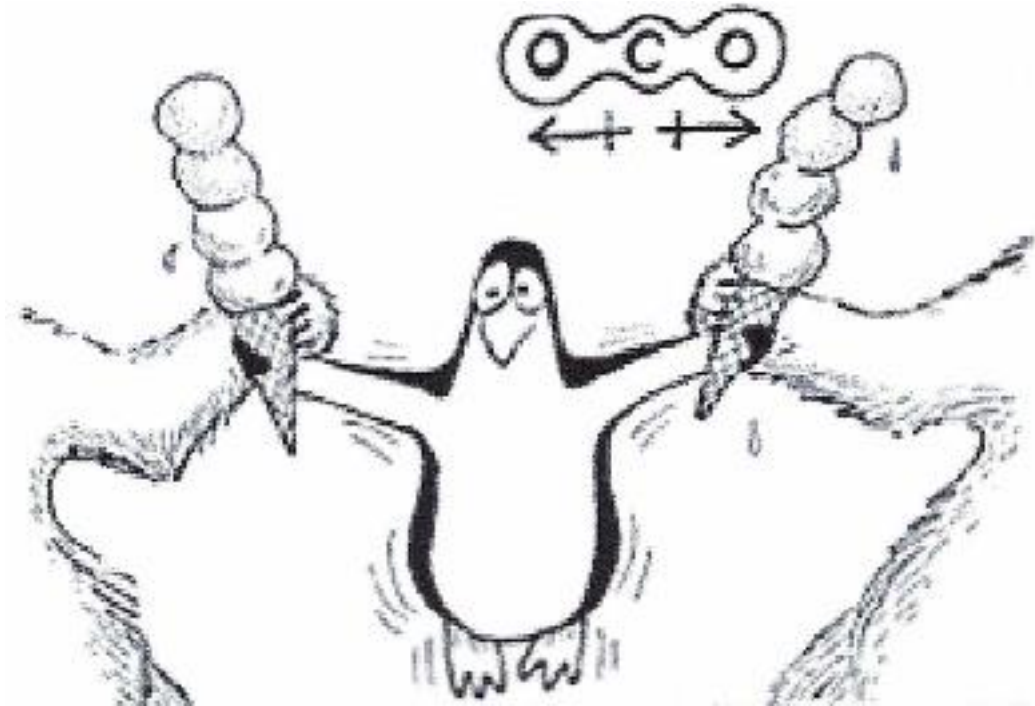
POSITIVE



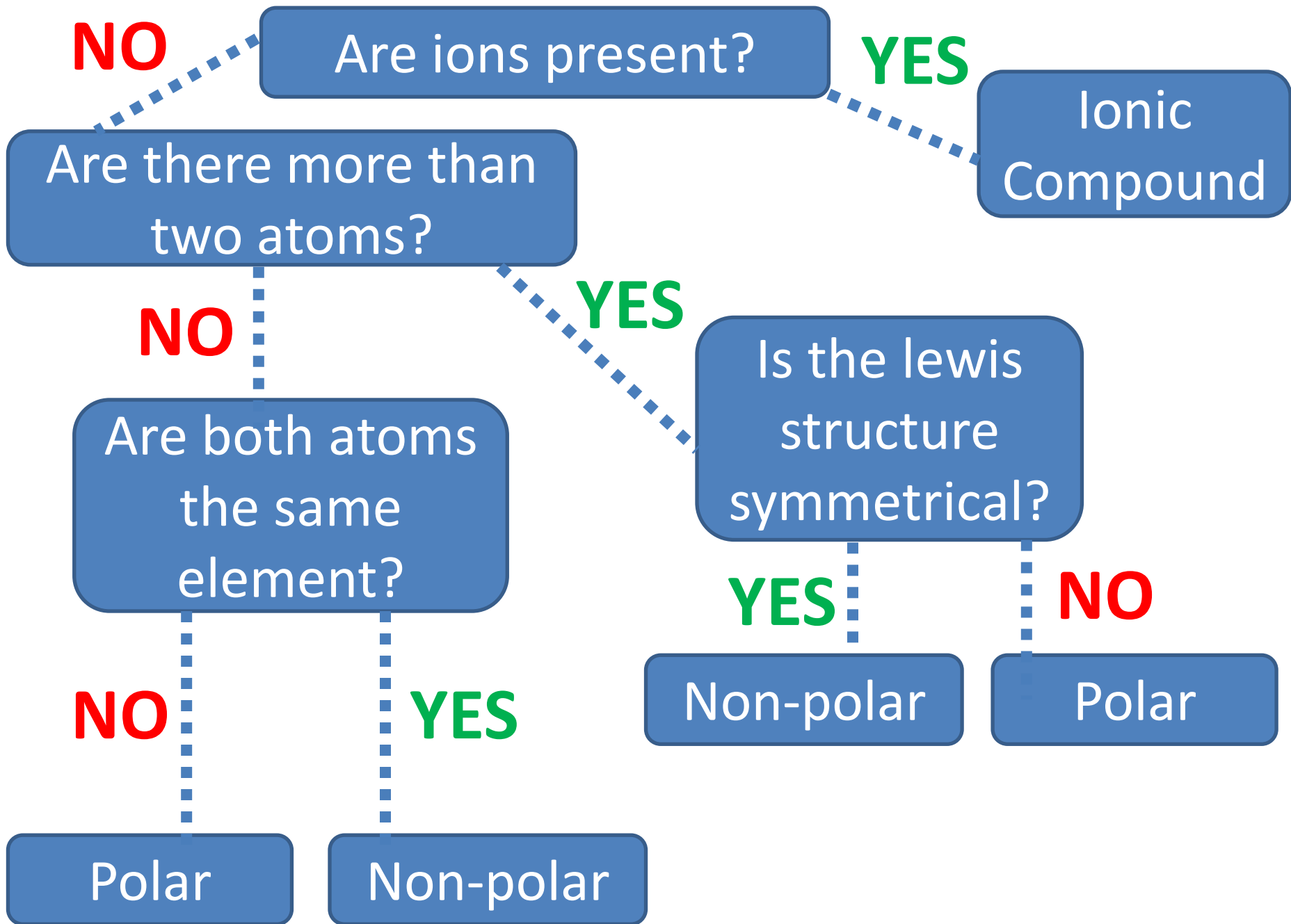
# Symmetry...the pole destroyer!

**CO<sub>2</sub>**

Has 1 carbon surrounded by 2 electronegative Oxygens, but is **NOT** polar?!?!



Electron density is still SYMMETRICAL which makes it non-polar



Three ways to diagram polarity  
(done on the whiteboard – ask a friend  
if you were absent)

Molecule	Lewis Structure	Polar or non polar?
H <sub>2</sub> O		
Br <sub>2</sub>		
CH <sub>4</sub>		
NH <sub>3</sub>		
CS <sub>2</sub>		
CH <sub>3</sub> Br		

**Target: I can identify if a molecule is polar or non-polar based on structure**

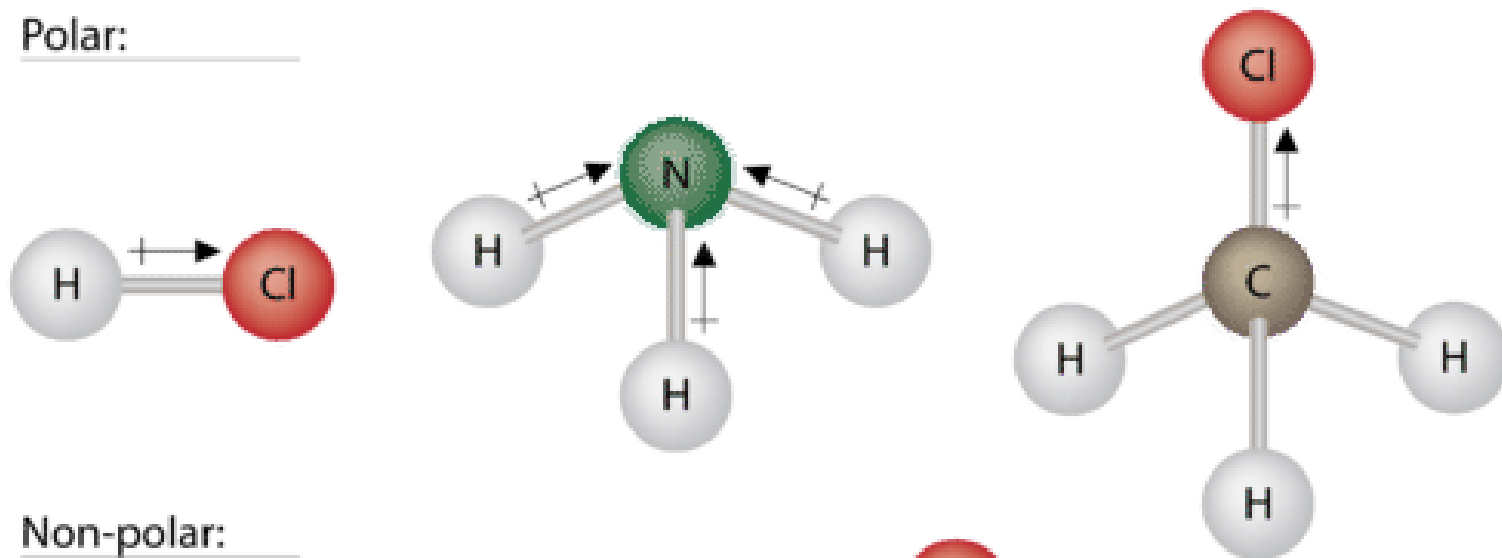
**Polarity Flow Chart Handout**

K

C

Q

Polar: \_\_\_\_\_



Non-polar: \_\_\_\_\_

