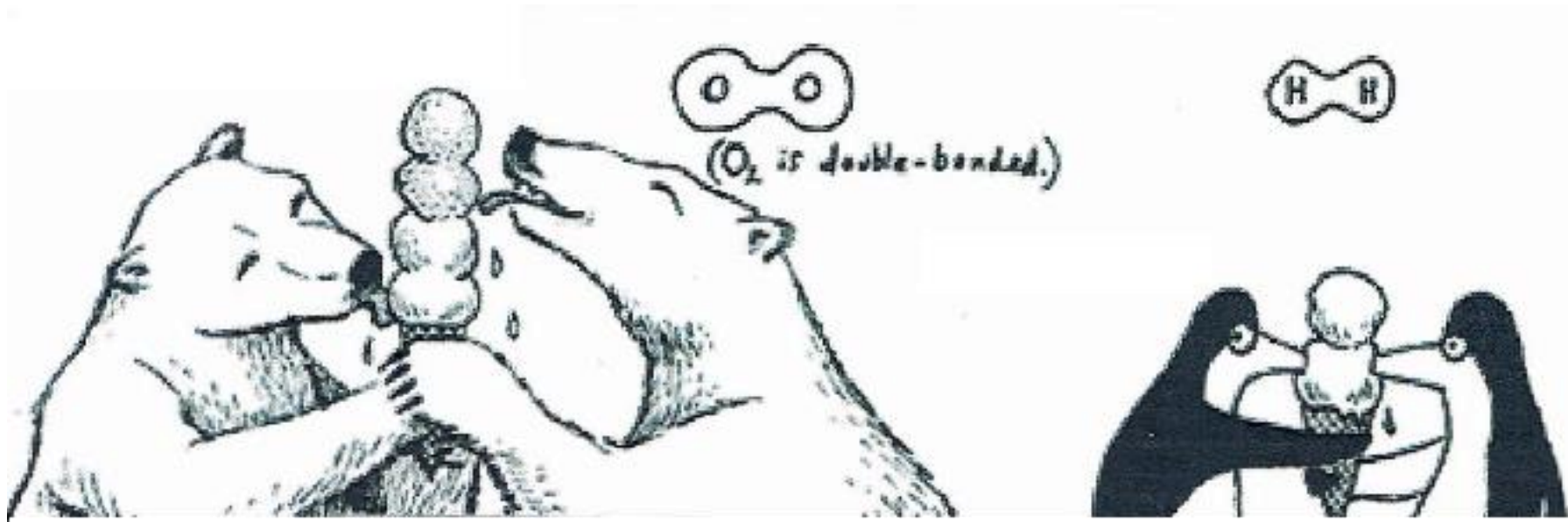


N-20

Polarity

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**



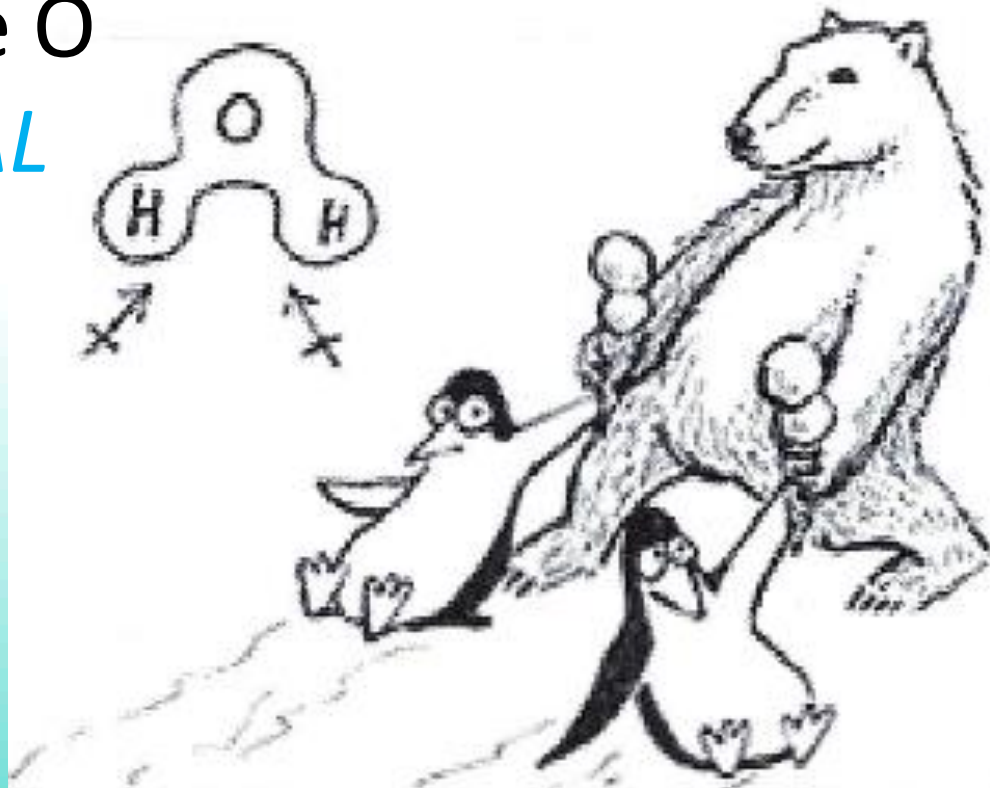
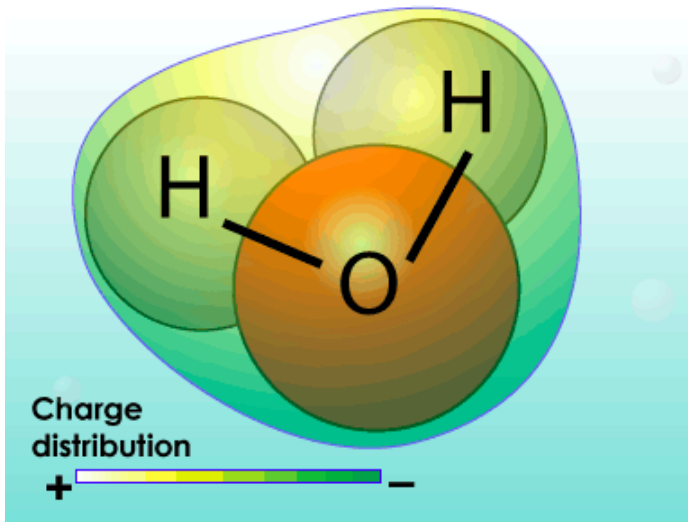
Polar molecules with more than 2 atoms

Water has:

2 H's willing to almost give up electrons

1 electronegative O

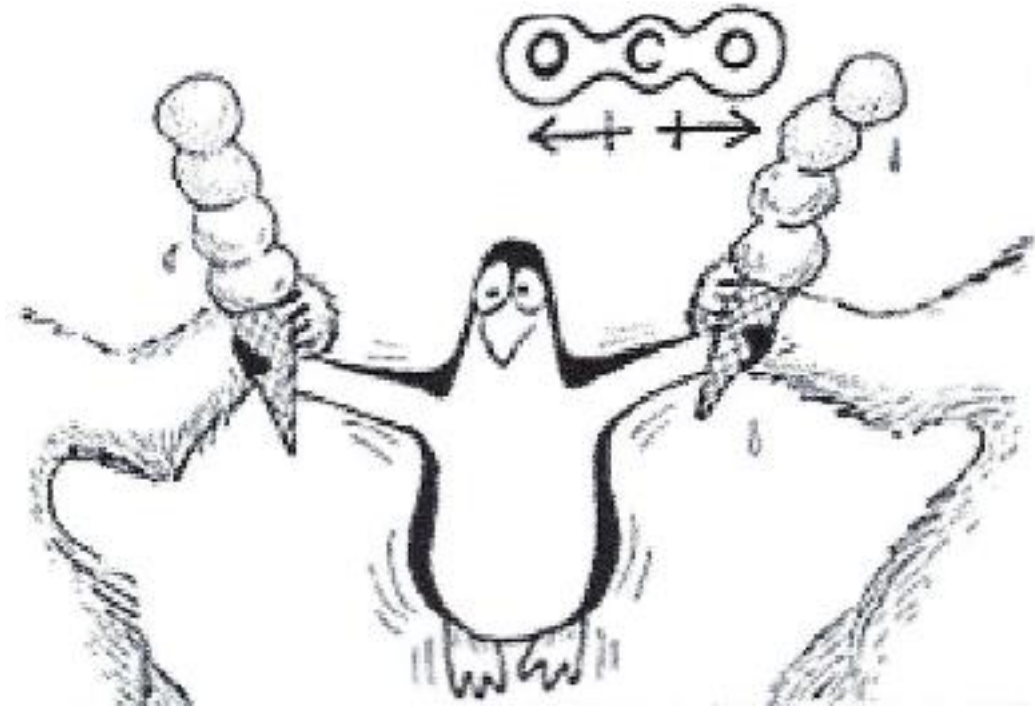
Ends up UNEQUAL



Symmetry...the pole destroyer!

CO₂

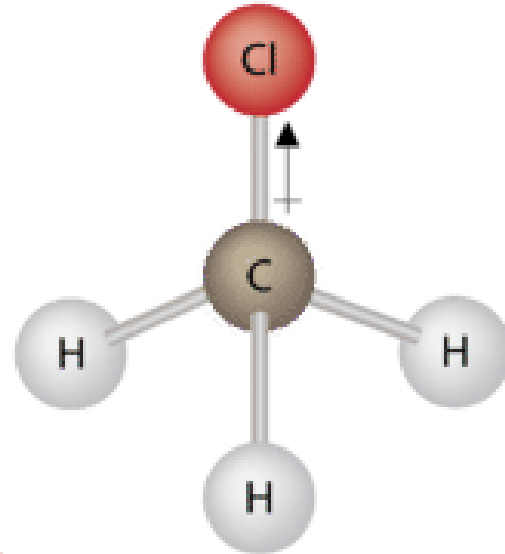
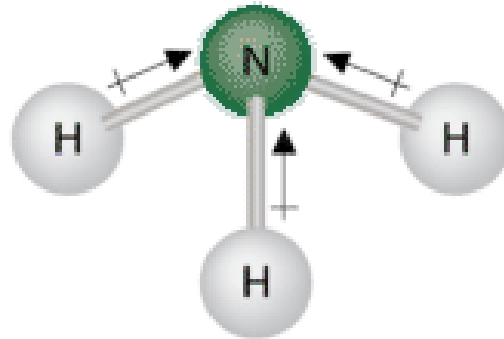
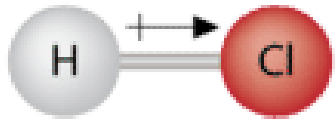
Has 1 carbon surrounded by 2 electronegative Oxygens, but is **NOT** polar?!?!



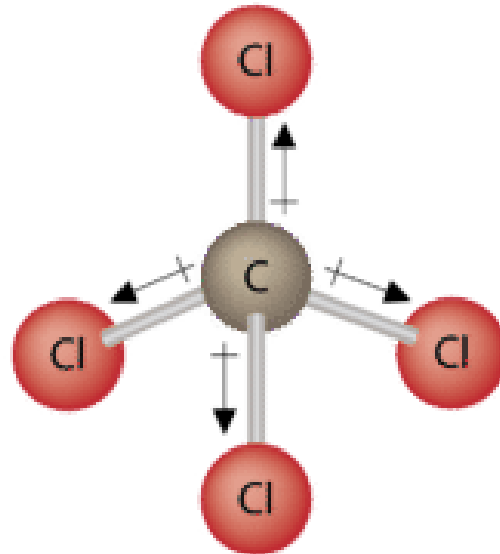
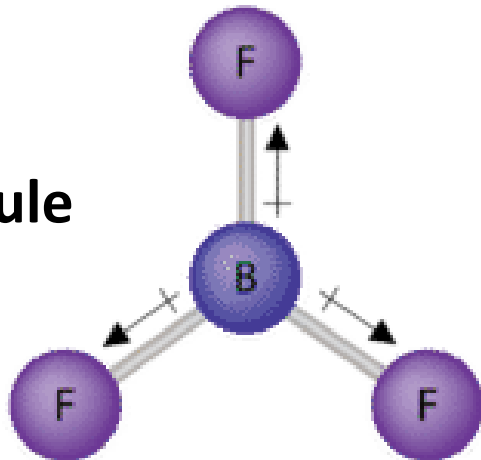
Electron density is still SYMMETRICAL which makes it non-polar

Careful about polar BOND versus polar MOLECULE

Polar bond AND
Polar molecule



Polar
bond AND —
NON-
polar
molecule



Three ways to diagram “dipoles”

