

Name: \_\_\_\_\_  
 Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Chemistry: Chemical Bonding Activity

### Introduction

When atoms bond together by sharing electrons a covalent bond is formed. Combinations of 2 or more atoms covalently bonded are called molecules. The term "share", when referring to covalent bonds, can be misleading. In many cases electrons are shared unevenly, this is called a Polar Covalent Bond. The opposite arrangement is called a Non-polar covalent bond. So what makes one molecule non-polar and another polar? The answer lies in where an atom is on the periodic table, in other words how electronegative an atom is. The further to the right, the more electronegative (electron loving) an atom is. Similarly, the closer to the top of the periodic table the more electronegative an atom is. Electrons are pulled more by the more electronegative atom. The closer together the non-metals are the less polar the resulting molecule is; the opposite is also true.

Although there is a mathematical way to figure out to calculate polarity, a quick, less accurate way is to count how many boxes separate the atoms: 2 or more = polar molecule.

### Activity

1. bromine and bromine

Atom Name	# Valence Electrons available to share	Electronegativity = > (greater) < (less)	How many atoms needed to make a compound? Use Criss-Cross Method	Chemical Formula Polarity
Bromine	1	=	1	Br -- Br
Bromine	1	=	1	

2. chlorine and fluorine

Atom Name	# Valence Electrons available to share	Electronegativity = > (greater) < (less)	How Many?	Chemical Formula Polarity

3. Fluorine and iodine

Atom Name	# Valence Electrons available to share	Electronegativity = > (greater) < (less)	How Many?	Chemical Formula Polarity