

## Chemical Families

**Objective:** To study the trends within the periodic table.

Element	Group No.	Reactant	Observations	Rxn? (Y/N)	Equation
Na		H <sub>2</sub> O*			
		CH <sub>3</sub> OH			
Li		H <sub>2</sub> O*			
		CH <sub>3</sub> OH			
Write down the <u>reactivity trend within</u> the above group:					
Mg		H <sub>2</sub> O			
		HCl*			
Ca		H <sub>2</sub> O			
		HCl*			
Write down the <u>reactivity trend</u> within the above group, and, within the above two periods:					

Element	Group No.	Reactant	Observations	Rxn? (Y/N)	Equation
Al		H <sub>2</sub> O			
		HCl*			
		NaOH			
B		H <sub>2</sub> O			
		HCl			
		NaOH			
<b>Write down the <u>reactivity trend</u> <u>within</u> the above group:</b>					
C		H <sub>2</sub> O			
		HCl			
Sn		H <sub>2</sub> O			
		HCl			
Pb		H <sub>2</sub> O			
		HCl			

Test	Halide solution	Halide Ion	Halogen	Colour in the upper layer		Reaction?	
				Initial	Final	Yes	No
1.	KBr	Br <sup>-</sup>	Cl <sub>2</sub>				
2.	KI	I <sup>-</sup>	Cl <sub>2</sub>				
3.	KCl	Cl <sup>-</sup>	Br <sub>2</sub>				
4.	KI	I <sup>-</sup>	Br <sub>2</sub>				
5.	KCl	Cl <sup>-</sup>	I <sub>2</sub>				
6.	KBr	Br <sup>-</sup>	I <sub>2</sub>				

Give the chemical equations for the reactions that **did take place**:

List the halogens in order of decreasing reactivity:

- 1.
- 2.
- 3.

**Conclusion:** Explain the reactivity of elements, **in general**, in a period and down the group.

**Answer Questions 1-3:** You may use the back of this page.