

# Chemistry Cycle Sheet

April 6, 2020 thru April 10, 2020



**Goals:** TLW discover the importance of the Chemical Families and the Periodic trends.

**Monday:** Class @1:00 – 2:15 PM  
Warm ups 80/81  
Periodic Trends

**Homework:** Do worksheet  
“Periodic Trends”

**Tuesday:** Watch Videos  
Warm ups 82/83

**Homework:** Warm ups 85/86

**Wednesday:** No Meeting. Watch Videos.

**Homework:** Do worksheet  
“Periodic Table II”

**Thursday:** Class @1:00 – 2:15 PM  
Warm ups 87/88

**Homework:** Warm ups 89/90

**Friday:** Good Friday

**Homework:** none

## Vocabulary

group	family	transition metals
period	metal	atomic mass unit
luster	ductile	nonmetals
corrosion	malleable	metalloid

## Know the following

periodic law	alkali metals	alkaline earth metals
periodic table	noble gases	<b>valence electrons</b>
halogens	semi-metals	electron configurations
chalcogens	<b>octet rule</b>	<b>Lewis dot symbols</b>

## Periodic Table

One of the greatest scientific discoveries, the periodic table is a classification system for the elements. It is organized in a logical, useable, and meaningful way.

## The Periodic Law

The chemical and physical properties of the elements are periodic functions of their atomic numbers.

## Periodic Trends

Variations in physical properties that depend on the electron configuration and help predict chemical behavior.

## Atomic Radius

It is half the distance between the nuclei of two atoms of the same element.

## Ionization Energy

The minimum amount of energy required to **remove** an electron from an atom.

## Electronegativity

It is the measure of the ability of an element to **attract** electrons.

## Electron Affinity

The amount of energy released when an electron is added to a neutral atom.

## Core Electrons

The inner electrons between the nucleus and the valence electrons.

### Shielding

An interference between the valence electrons and the nucleus caused by the core electrons.

### Chemical Bond

It's an electrostatic attraction between two atoms strong enough to act as a unit.

### Ionic Bond

A chemical bond created by the transfer of one or more electrons.

### Covalent Bond

A chemical bond created by the sharing of one or more electrons.

### Polar Bond

It's a covalent bond with a partial positive end and a partial negative end

### Metallic Bond

This a bond between atoms of a metal created by sharing free outer shell electrons.

### Polar Molecule

This is a molecule with a partial positive end and a partial negative end

### Dipole

A dipole is a polar covalent molecule.

### Molecule

A molecule is the simplest form of a covalent compound.

### Formula Unit

A formula unit is the simplest form of an ionic compound.

### Coordinate Covalent Bond

It's a covalent bond in which both electrons come from the same atom.

### 7 Diatomic Elements

hydrogen	H <sub>2</sub>	chlorine	Cl <sub>2</sub>
nitrogen	N <sub>2</sub>	bromine	Br <sub>2</sub>
oxygen	O <sub>2</sub>	iodine	I <sub>2</sub>
fluorine	F <sub>2</sub>		

### Checkpoint #70

Write the MODERN periodic law.

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### Checkpoint #71

Using the periodic table: **(1)** classify each of the following as a metal, non-metal or semimetal. **(2)** list the family name.

1. arsenic \_\_\_\_\_
2. sodium \_\_\_\_\_
3. krypton \_\_\_\_\_

### Checkpoint #72

Which family would form XH<sub>2</sub> hydrides?

### Checkpoint #73

Determine the best family .

- \_\_\_\_\_ 1. forms **1-** anions and has 1 bond
- \_\_\_\_\_ 2. also known as the **inert** gases
- \_\_\_\_\_ 3. forms **1+** cations and has one bond
- \_\_\_\_\_ 4. is also known as the **d-block**
- \_\_\_\_\_ 5. usually has **four** (4) bonds
- \_\_\_\_\_ 6. forms **2-** anions and has two bonds
- \_\_\_\_\_ 7. has 2 bonds and forms **2+** cations