Name: _____ Date: _____ Pd: _____

LECTURE NOTES: Periodic Trends & Electron Configurations

NOTES ~ **Name:** _____ **Date:** _____ **Period:** _____

Topic/Objective:	**Essential Question(s):**

Questions & Cues:	**Notes ~ Highlights ~ Facts**

Summary:

Name _____ Date _____ Pd _____

Periodic Trends & Electron Configurations (part #1)

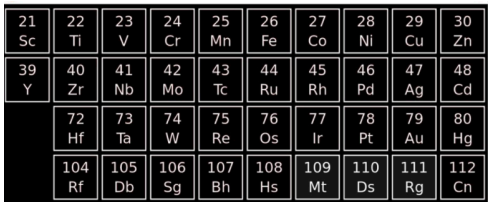
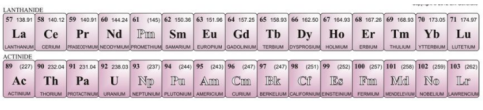
Essential Question(s)	Learning Target(s)

Divisions of the Periodic Table

What are the characteristics of Metals?	Give a specific example of a **METAL** and how it is used in a real-world setting.
What are the characteristics of Nonmetals?	Give a specific example of a **NONMETAL** and how it is used in a real-world setting.
What are the characteristics of Metalloids	Give a specific example of a **METALLOID** and how it is used in a real-world setting.

Families, Groups & Periods

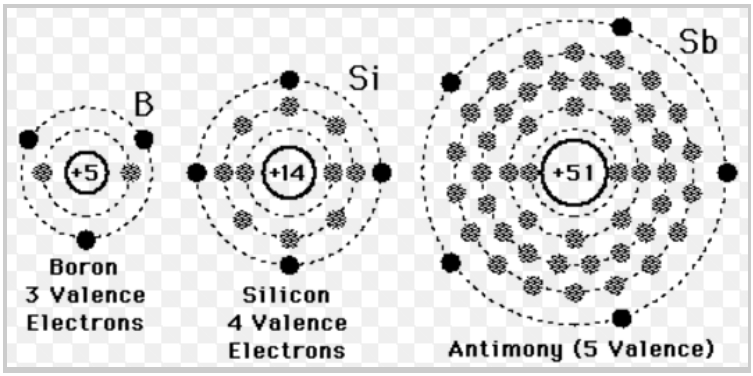
Name all of the categories of elements/elemental Families

Group #1:	Group #2:	Group #3 - 12:
_____	_____	_____
		
Group #17:	Group #18:	Group:
_____	_____	_____
		

Periodic Trends & Electron Configurations (part #2)

Learning Target(s)

Families, Groups & Periods

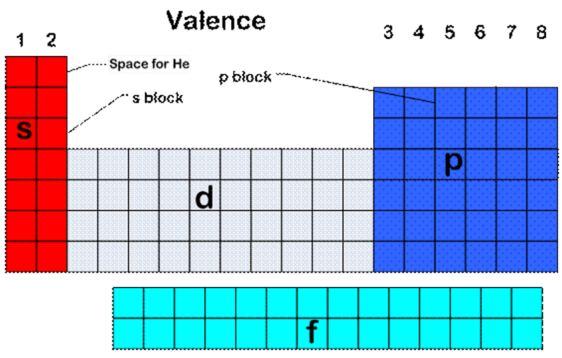
Core Electrons:	
Valence Electrons?	

How many core electrons does Silicon have in the Bohr Diagram? _____

Energy Levels / Orbitals

What was Erwin Schrodinger's contribution to the discovery of the atom?	What do Principle Quantum Numbers relate to on the periodic table?

How would you describe Energy Levels / Orbitals of atoms?



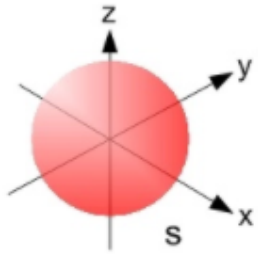
Energy Levels / Orbitals

(s) Orbital

Shape: _____

# of Orbitals: _____

# of Electrons: _____

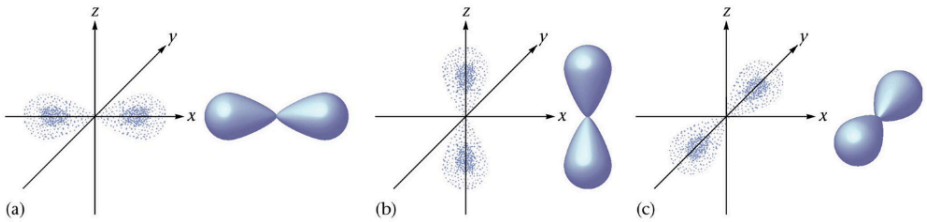


(p) Orbital

Shape: _____

# of Orbitals: _____

# of Electrons: _____

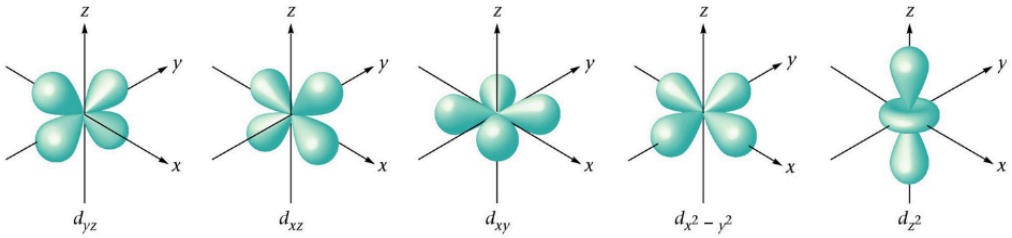


(d) Orbital

Shape: _____

# of Orbitals: _____

# of Electrons: _____

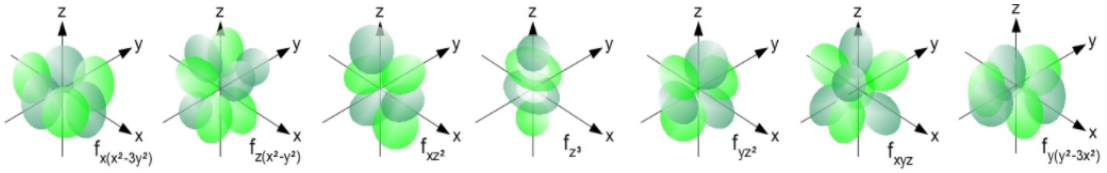


(f) Orbital

Shape: _____

# of Orbitals: _____

# of Electrons: _____



Electron Orbital Diagrams & Configuration

How would you describe an electron orbital diagram? What does it represent?

What is the electron configuration of….

15
P
Phosphorus
30.97

_____

How would you start with the shortened electron configuration? Circle the element you would use!

8	9	10
O	**F**	**Ne**
Oxygen	Fluorine	Neon
16.00	19.00	20.18
16	17	18
S	**Cl**	**Ar**
Sulfur	Chlorine	Argon
32.07	35.45	39.95

_____

The Aufbau Principle -

Hund's Rule -

Pauli Exclusion Principle -

Periodic Trends & Electron Configurations (part #3)

Learning Target(s)

Periodic Trends

<u>Trend #1</u>: Atomic Size (radius)	
<u>Definition</u>:	Fact #1
	Fact #2
	Fact #3
Moving horizontal across a PERIOD (row).... **<u>ATOMIC RADIUS INCREASES FROM RIGHT TO LEFT!!!</u>**	Why #1
	Why #2
	Why #3
Moving vertical down a GROUP (column).... **<u>ATOMIC RADIUS INCREASES FROM TOP TO BOTTOM!!!</u>**	Why #1
	Why #2
	Why #3

<u>Trend #2</u>: Electronegativity

<u>Definition</u>:	Fact #1
	Fact #2
	Fact #3
Moving horizontal across a PERIOD (row).... **<u>ELECTRONEGATIVITY INCREASES FROM LEFT TO RIGHT!!!</u>**	Why #1
	Why #2
	Why #3
Moving vertical down a GROUP (column).... **<u>ELECTRONEGATIVITY INCREASES FROM BOTTOM TO TOP!!!</u>**	Why #1
	Why #2
	Why #3

<u>Trend #3</u>: Ionization Energy

<u>Definition</u>:	Fact #1
	Fact #2
Moving horizontal across a PERIOD (row).... **<u>IONIZATION ENERGY INCREASES FROM LEFT TO RIGHT!!!</u>**	Why #1
	Why #2
	Why #3
Moving vertical down a GROUP (column).... **<u>IONIZATION ENERGY INCREASES FROM BOTTOM TO TOP!!!</u>**	Why #1
	Why #2
	Why #3