Topic/Objective CHAPTER: 3

Chemistry

NAME:

Pd: 1 2 4 5 other

DATE 7 PH

Essential Question

What are the Elements of the Periodic Table

Cue: Review: Thoughts: Main Idea

NOTE Taking AREA:

92 naturally occuring

↳ There are 92 naturally occuring elements on the Periodic Table

Naturally occuring

↳ made by nature

↳ From these 92 elements about 28 other elements are created.

Total

↳ 118 known elements

Most Abundant

↳ Top 10 Most Abundant Elements

%			%		
46.6	(1)	Oxygen (Breathing)	2.8	(6)	Sodium (potato chips)
27.2	(2)	Silicon (computers)	2.6	(7)	Potassium (energy)
8.1	(3)	Aluminum (foil)	2.1	(8)	Magnesium (Road flares)
5.0	(4)	Iron (stronger weights)	0.4	(9)	Titanium
3.6	(5)	Calcium (Milk)	0.1	(10)	Hydrogen

NOTES CONTINUE ON OTHER SIDE

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Cue: Review:
Thoughts: Main Idea

Atomic #

NOTE Taking AREA:

↳ Table is organized in a particular way.

↳ good accuracy of the physical & Chemical properties of the elements.

↳ Organized according to Atomic #

↳ # of Protons → Also = to the # of e^-

↳ NO 2 elements Have the same Atomic #

↳ usually how you Identify the substance

↳ EACH element is written on a square where you can find the following information.

1) Atomic #
2) Symbol
3) Atomic Mass
4) # of Valence e^-
5) State of Matter @ Room temperature.

Atomic Mass ↳ Atomic weight → Mass #

Atomic Mass = # of Protons + # of neutrons

↖ Plus

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Essential Question

Elements of the Periodic table

pt 3

Cue: Review:
Thoughts: Main Idea

NOTE Taking AREA:

Families

↳ 1869
Dmitri Mendeléev
↳ But was Δ to Atomic #

↳ Families go up & down (columns)

↳ similar but not identical properties

i.e. Li, Na, K, and IA are all soft, white, shiny, metals

↳ have the same # of valence e⁻

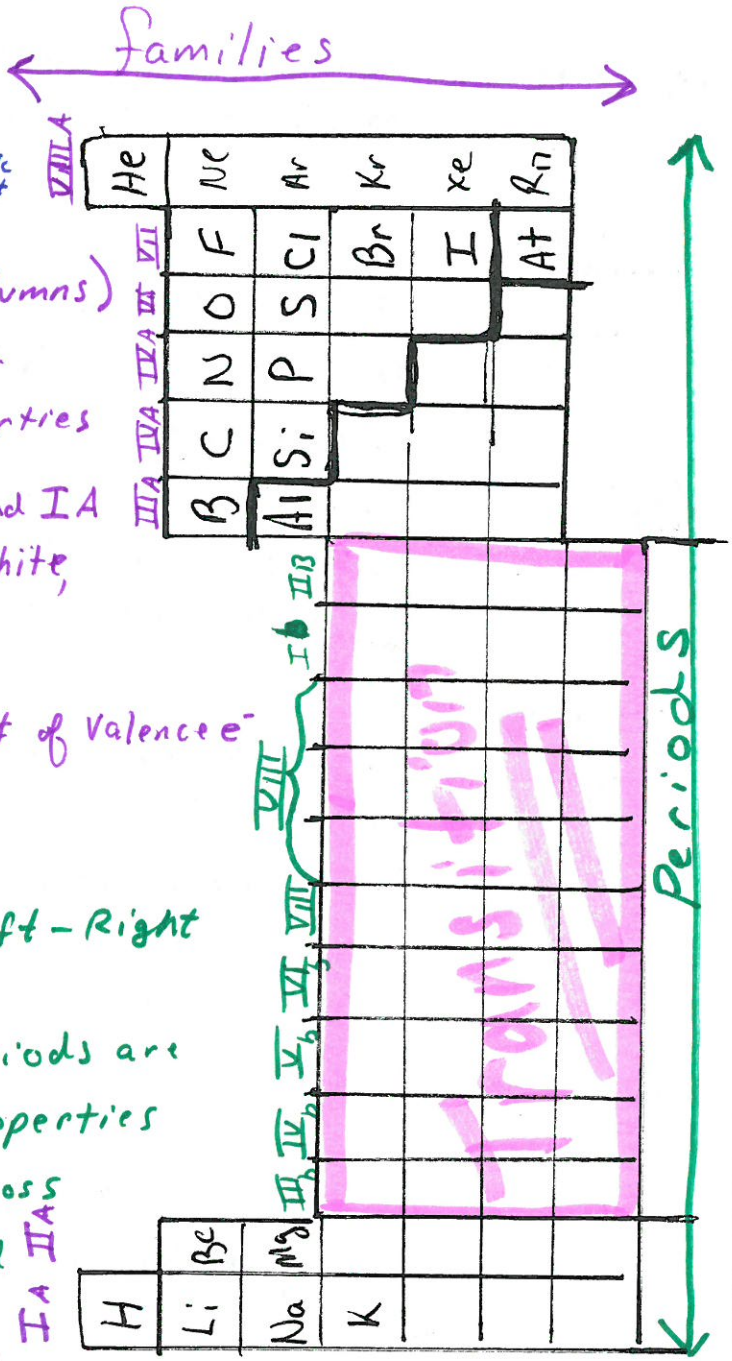
Periods

↳ Periods go Left-Right (Rows)

↳ elements in periods are not alike in properties

↳ Δ as you go across

↳ 1 element in Period is Always extremely Active solid.
Last is inactive gas



NOTES CONTINUE ON OTHER SIDE

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Cue: Review: Thoughts: Main Idea	NOTE Taking AREA:
Hydrogen	↳ is its own class ↳ gas @ Room Temp.
Alkali IA	↳ have 1 e^- in valence shell to give ↳ Shiny, clay-like, easy to cut ↳ most Reactive metals ↳ Violenty w/H_2O ↳ Never found as Free elements in Nature always bonded w/Another element
Alkaline IIA	↳ Never found uncombinded in nature ↳ Have 2 valence e^- (give up => +2 ion) ↳ EARTH Metals
Transition Metals	↳ The "B" family ↳ good conductors of heat & electricity ↳ usually brightly colored & often in paint ↳ have properties similar to 1 another

↳ Many transition metals combine chemically w/oxygen to form compounds called: Oxides

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Essential Question

Elements of Periodic Table

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Cue: Review:
Thoughts: Main Idea

NOTE Taking AREA:

Boron
IIIA

↳ Named after the 1ST element in the family

↳ Atoms in this family have 3 valence electrons

↳ This family includes a metalloid (Boron) and the rest are metals.

↳ The family includes the most abundant metal in the earth's crust (Aluminum)

Carbon
IVA

↳ have 4 valence e⁻

↳ mostly non-metal, metalloids, and metals

↳ Carbon is the "Basis of life"

↳ organic chemistry is devoted to carbon compounds for life

↳ if it is involving neither organic

NOTES CONTINUE ON OTHER SIDE

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Cue: Review: Thoughts: Main Idea	NOTE Taking AREA:
Nitrogen family VA	↳ named after the element that makes up 78% of our atmosphere ↳ This family includes nonmetal, metalloids, metals. ↳ Have 5 valence electrons which tend to share electrons.
Oxygen family VI A	↳ has 6 valence electrons ↳ most elements share electrons ↳ Most abundant element in the ⊕'s crust
Halogen family VII A	↳ have 7 valence electrons making them the most active non-metals ↳ NEVER found free in nature F, Cl, Br, I, As
SUMMARY:	↳ React w/Alkali metals to form SALTS
Noble gases VIII A	↳ extreamely unreactive → A.K.A. Inert ↳ Valence shell is Full ↳ found in small amounts in ⊕ Atmosphere He, Ne, Ar, Kr, Xe, Rn