Targets:

- Be able to define & use the periodic trends
  - # of valence e⁻
  - # of energy levels
  - atomic Radii
  - Ionic Radii
  - Ionization Energy
  - Electronegativity
  - Sublevels.

Periodic Table Hmwk answers:

1. Mendeleev
2. atomic mass
3. modern periodic law
4. alkali metals
5. 3
6. transition metals
7. groups valence e⁻
8. halogens
9. element symbol
10. semi-metals

matching

1. c
2. d
3. g
4. e
5. f alkaline earth
6. a
7. b
8. f alkali metals

m.c.

1. c
2. b
3. b
4. d
5. a
6. b
7. c
8. b

Name: _____ Block: ____ Date: _____

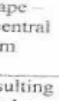
Periodic Trends Worksheet

AR Inc

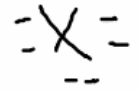
IE & EN Inc

AR Inc.

IE & EN Inc.

	I A	II A	Group B	III A	IV A	V A	VI A	VII A	VIII A
# of Valence Electrons	1	2		3	4	5	6	7	8
Charge	1+	2+		3+	4+ 4-	3-	2-	1-	0
Bonding Capacity	1	2		3	4	3	2	1	0
Shape – if central atom									
Resulting Bond Angle									

Small IE EN

Lewis dot diagram 

A.R. Atomic Radii – increases as # of energy levels ↑

IE. Ionization energy – is ↑ for small atoms ↓ Large

E.N. – electronegativity is ↑ for smalls atoms ↓ large

– No value for Noble Gases.

Name: _____ Block: ____ Date: _____

Periodic Trends Worksheet

A.R. inc

IE & EN inc.

AR inc.

IE & EN inc.

	I A	II A	Group B	III A	IV A	V A	VI A	VII A	VIII A (Smallest highest)
# of Valence Electrons	1	2		3	4	5	6	7	8
Charge	1+	2+		3+	4+ 4−	3−	2−	1−	0
Bonding Capacity	1	2		3	4	3	2	1	0
Shape – if central atom	X·	·X·		·X·	·X·	·X·	·X:	·X:	:X:
Resulting Bond Angle									

Lewis Dot Diagram - diagrams valence e⁻ around element symbol

H· ·X· Exception: He:

A.R. = atomic radii = from the nucleus to the outermost e⁻

Larger to Left Larger – Low

IE = Ionization energy = energy required to remove the most loosely held e⁻

Smaller is stronger * Noble Gases have highest values

Stronger to top right

EN = electronegativity = attraction of an atom to the e⁻ in a covalent bond

Smaller is stronger – except Noble Gases because they don't bond.

Name: _____ Block: ____ Date: _____

Periodic Trends Worksheet

AR inc.

IE & EN inc

A.R. inc.

IE + EN inc.

	I A	II A	Group B	III A	IV A	V A	VI A	VII A	VIII A
# of Valence Electrons	1	2		3	4	5	6	7	8
Charge	1+	2+		3+	4+ 4-	3-	2-	1-	0
Bonding Capacity	1	2		3	4	3	2	1	0
Shape – if central atom	X·	·X·		·X·	·X·	·X·	·X:	·X:	:X:
Resulting Bond Angle									

Lewis Dot Diagram = dots for valence e⁻ around element symbol

H· Exception He: H_2O H:Ö:

AR = Atomic Radii = distance between nucleus + outermost e⁻

Low is Large Left is Large

IE = Ionization energy = energy required to remove the most loosely held e⁻

Smaller is stronger – Noble gases are the highest IE

EN = electronegativity = the attraction of an atom to the electrons in a covalent bond.

Smaller is stronger – Noble gases don't make bonds.

Amber Alert:

Find the 2 missing people by creating a 4×8 or 8×4 "picture" of the family.