



PERIODIC TRENDS INQUIRY LAB

**Let's investigate some
interesting periodic
relationships**

WHAT IS A TREND?

Provide at least one example of the latest “trends” in today’s society.

Type Here

Explain how we identify trends in a science or math classroom.

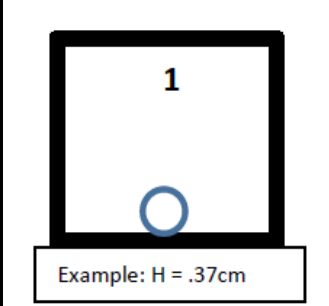
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LET'S CONSIDER A FEW TRENDS WE HAVE ALREADY OBSERVED ON THE PERIODIC TABLE

Identify trends we have already explored on the periodic table in the space below.

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Part 1-
Atomic Radius in Angstroms
Draw a circle that represents the
relative size of the atom. Use the data in
the chart to determine the radius. Each
tick is 0.50 Angstroms. I have done
Hydrogen and Potassium for you!



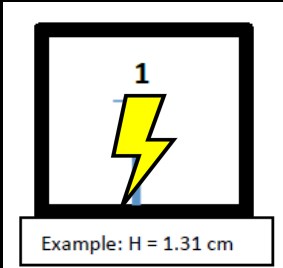
NOW WE WILL LOOK AT SOME OTHER
TRENDS –USE YOUR SHAPES TOOLS TO
HELP YOU VISUALIZE THE TRENDS

Atomic #		Atomic Radius	Atomic #		Atomic Radius
1	H	0.37	14	Si	1.18
2	He	0.31	15	P	1.10
3	Li	1.52	16	S	1.03
4	Be	1.12	17	Cl	1.00
5	B	0.85	18	Ar	0.98
6	C	0.77	19	K	2.27
7	N	0.75	20	Ca	1.97
8	O	0.73			
9	F	0.72			
10	Ne	0.71	31	Ga	1.35
11	Na	1.86	32	Ge	1.22
12	Mg	1.60	33	As	1.20
13	Al	1.43	34	Se	1.19
			35	Br	1.14
			36	Kr	1.12

Define the term Atomic Radius
Type Here

1 1A											18 8A
2 2A	13 3A	14 4A	15 5A	16 6A	17 7A						
3	4	5	6	7	8	9	10				
11	12	13	14	15	16	17	18				
19	20	31	32	33	34	35	36				

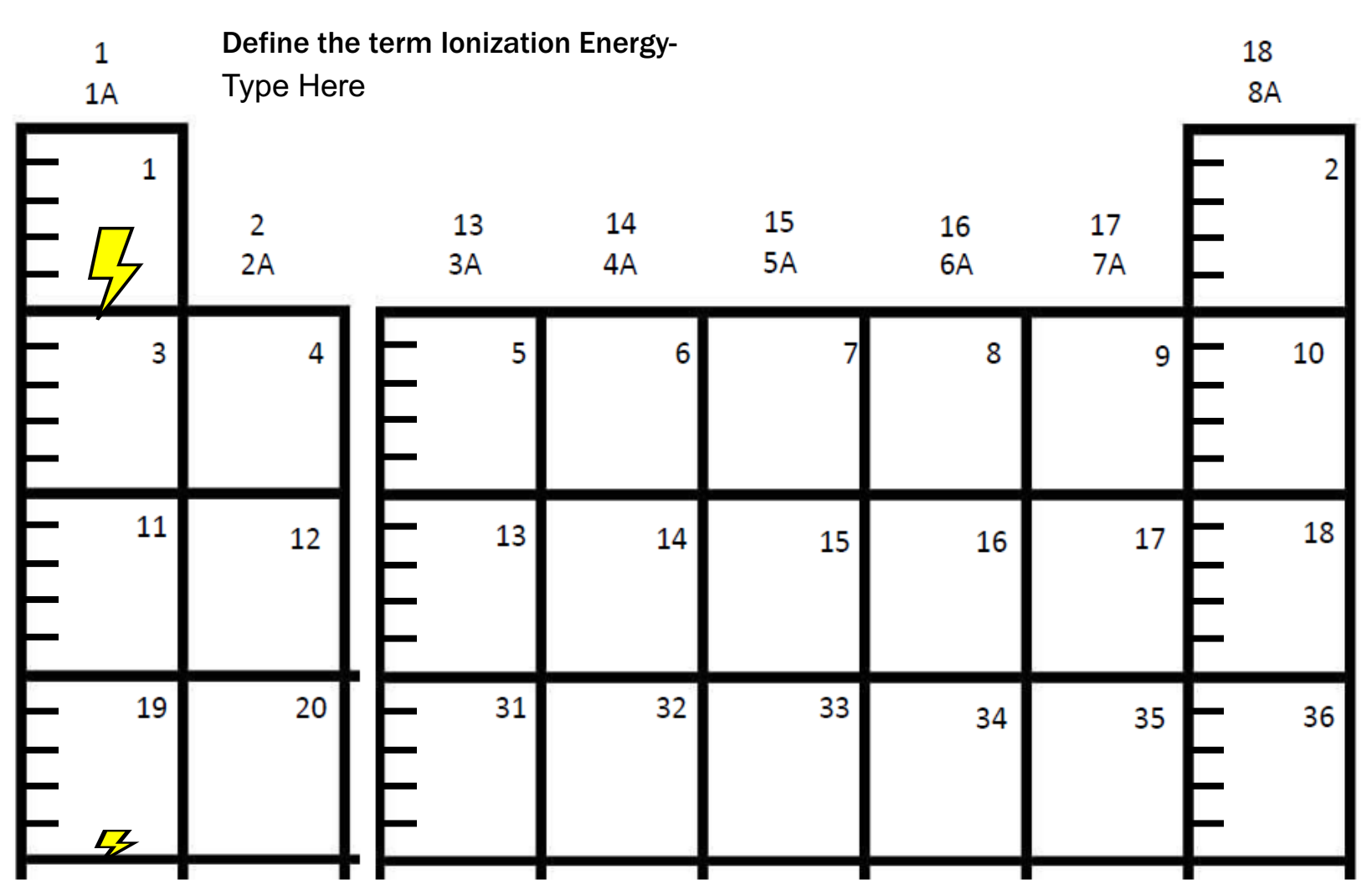
Part 2-
Ionization Energy in kJ/mol
Draw an lightening bolt that
represents the relative ionization
energy. Use the data in the chart to
determine the ionization energy. Each
tick marks 0.75 kJ/mol.



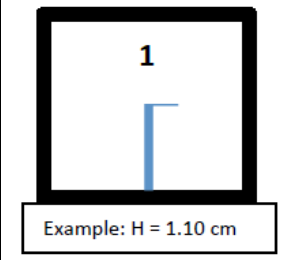
NOW WE WILL LOOK AT SOME OTHER TRENDS –USE YOUR SHAPES TOOLS TO HELP YOU VISUALIZE THE TRENDS

Atomic #		Ionization Energy
1	H	1.31
2	He	2.40
3	Li	0.52
4	Be	0.90
5	B	0.80
6	C	1.09
7	N	1.40
8	O	1.31
9	F	1.68
10	Ne	2.08
11	Na	0.50
12	Mg	0.74
13	Al	0.59

Atomic #		Ionization Energy
14	Si	0.79
15	P	1.06
16	S	1.00
17	Cl	1.26
18	Ar	1.52
19	K	0.42
20	Ca	0.59
31	Ga	0.58
32	Ge	0.78
33	As	1.01
34	Se	0.94
35	Br	1.14
36	Kr	1.35



Part 2-
Electronegativity in Pauling Units
Draw a vertical line that represents the relative electronegativity. Use the data in the chart to determine the electronegativity. Each tick marks 1.0 Pauling Units.

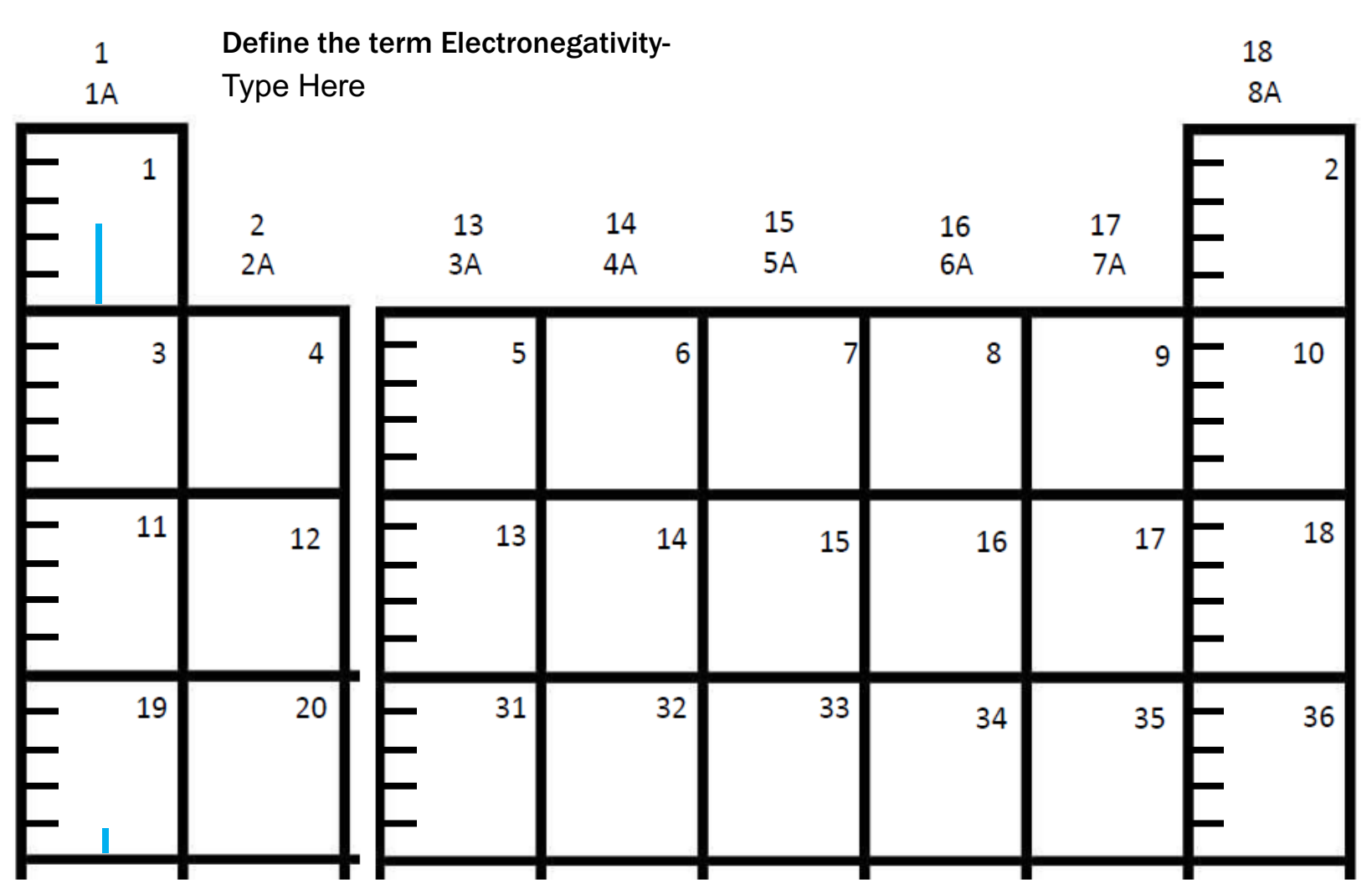


NOW WE WILL LOOK AT SOME OTHER TRENDS –USE YOUR SHAPES TOOLS TO HELP YOU VISUALIZE THE TRENDS

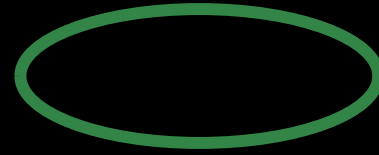
Atomic #		Electro-negativity
1	H	2.1
2	He	-
3	Li	1.0
4	Be	1.5
5	B	2.0
6	C	2.5
7	N	3.0
8	O	3.5
9	F	4.0
10	Ne	-
11	Na	0.9
12	Mg	1.2
13	Al	1.5

Atomic #		Electro-negativity
14	Si	1.8
15	P	2.1
16	S	2.5
17	Cl	3.0
18	Ar	-
19	K	0.8
20	Ca	1.0
31	Ga	1.6
32	Ge	1.8
33	As	2.0
34	Se	2.4
35	Br	2.8
36	Kr	-

Hint: A “-” indicates that the electronegativity is negligible and these elements do not tend to react with other elements. No line will be drawn.



NOW LET'S ANALYZE THESE TRENDS- USE THE CIRCLE → TO COPY+PASTE AND DRAG + DROP



Atomic Radius-

Moving from left to right across the period, atomic radius generally **increased / decreased**.

Moving from top to bottom down group, atomic radius generally **increased / decreased**.

Ionization Energy-

Moving from left to right across the period, ionization energy generally **increased / decreased**.

Moving from top to bottom down group, ionization energy generally **increased / decreased**.

Electronegativity-

Moving from left to right across the period, electronegativity generally **increased / decreased**.

Moving from top to bottom down group, electronegativity generally **increased / decreased**.