

## Chemistry Unit 2 Strain Your Brain #1 – Ain't nuttin' but trends.

Your mission: Using the data table below and your periodic table, find 5 trends that exist within the periodic table. Once you have found them, your group will need to visually represent one of these trends. You may choose a graph, a chart or other means, but it must be visual and the trend must be clear.

Element symbol	Atomic number	Atomic mass	Boiling point (K)	Melting point (K)	Valence electrons	Oxide	Chloride
H	1	1.01	20.268	14.025	1	H <sub>2</sub> O	HCl
He	2	4.00	4.215	0.95	2	—	—
Li	3	6.94	1615	453.7	1	Li <sub>2</sub> O	LiCl
Be	4	9.01	2745	1560	2	BeO	BeCl <sub>2</sub>
B	5	10.81	4275	2300	3	B <sub>2</sub> O <sub>3</sub>	BCl <sub>3</sub>
C	6	12.01	4470	4100	4	CO <sub>2</sub>	CCl <sub>4</sub>
N	7	14.01	77.35	63.14	5	N <sub>2</sub> O <sub>5</sub>	NCl <sub>3</sub>
O	8	15.99	90.18	50.35	6	—	OCl <sub>2</sub>
F	9	18.99	84.95	53.48	7	OF <sub>2</sub>	FCI
Ne	10	20.18	27.096	24.553	8	—	—
Na	11	22.99	1156	371.0	1	Na <sub>2</sub> O	NaCl
Mg	12	24.31	1363	922	2	MgO	MgCl <sub>2</sub>
Al	13	26.98	2793	933.25	3	Al <sub>2</sub> O <sub>3</sub>	AlCl <sub>3</sub>
Si	14	28.09	3540	1685	4	SiO <sub>2</sub>	SiCl <sub>4</sub>
P	15	30.97	550	317.30	5	P <sub>2</sub> O <sub>5</sub>	PCl <sub>3</sub>
S	16	32.06	717.75	388.36	6	SO <sub>3</sub>	SCl <sub>2</sub>
Cl	17	35.45	239.1	172.16	7	OCl <sub>2</sub>	—
Ar	18	39.95	87.30	83.81	8	—	—
K	19	39.10	1032	336.35	1	K <sub>2</sub> O	KCl
Ca	20	40.08	1757	1112	2	CaO	CaCl <sub>2</sub>

Once you have found five trends, answer the following questions.

1. What are your five trends?
2. Show your visual representation of one of the trends.
3. What would the formula be for Barium oxide? Lead Chloride?