Unit 2 Slides

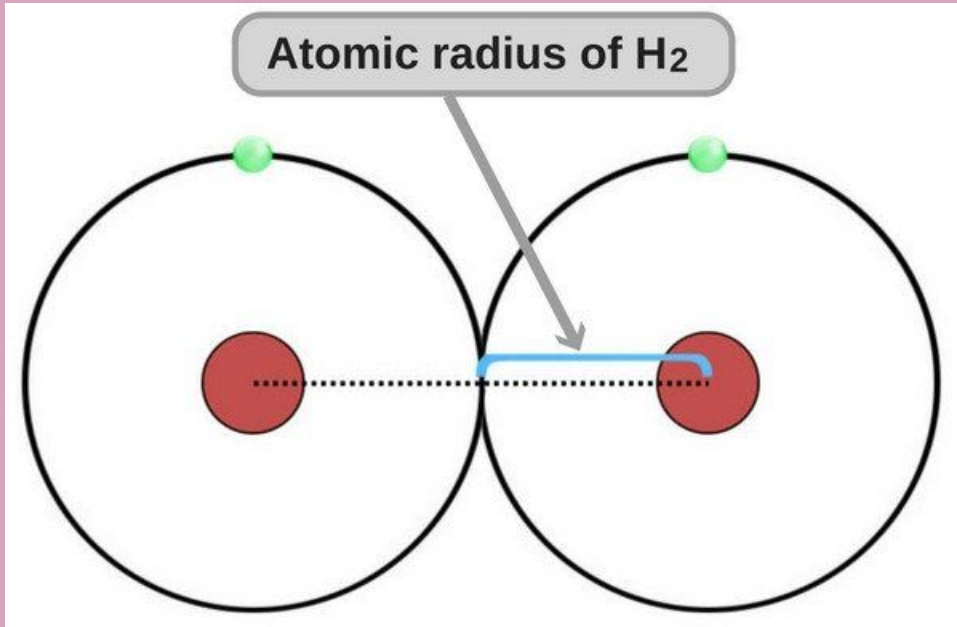
Periodic trends and Nomenclature

Graph the periodic trends

Before you start your graph, highlight or underline the points that you need for your graph

Atomic radius*

A measurement for the size of an atom



On your whiteboard

- Draw a Bohr model including number of protons of each of the following atoms:
  - H
  - He
  - Li
  - Be
  - Na

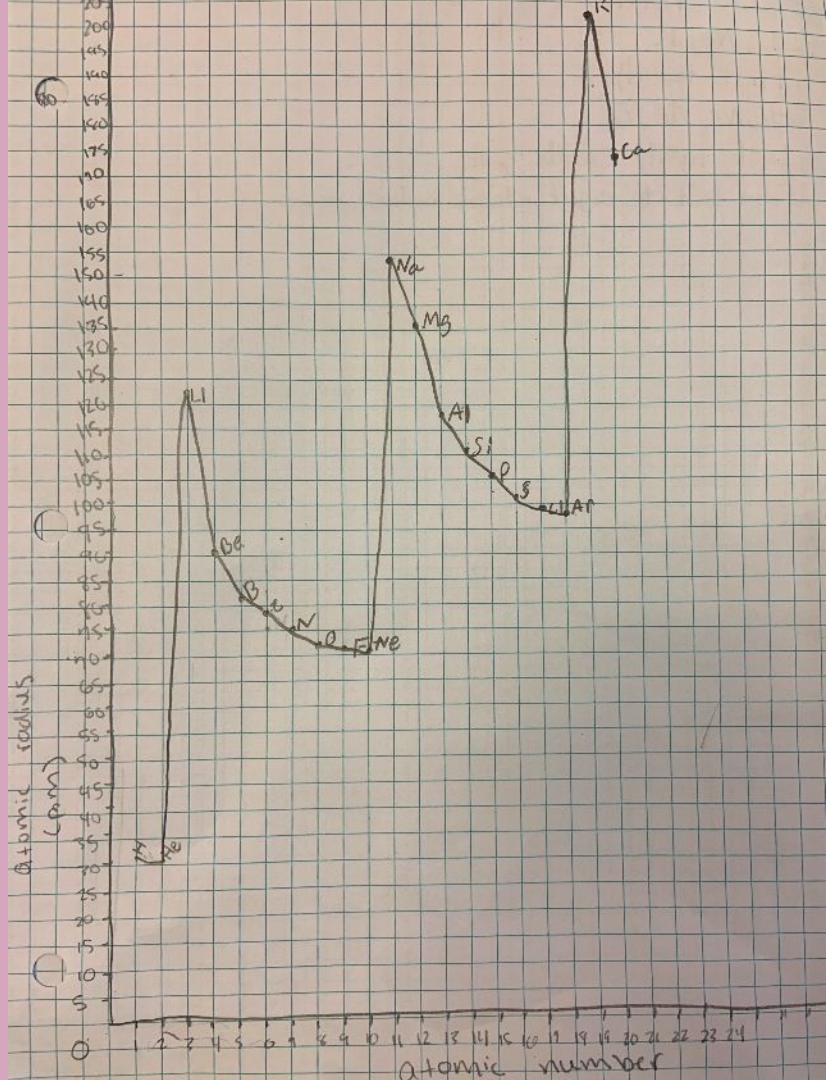
What do we notice is added as we go down a family?

What is added as we go across a period?

Atomic radius

What is the trend as we move across a period?

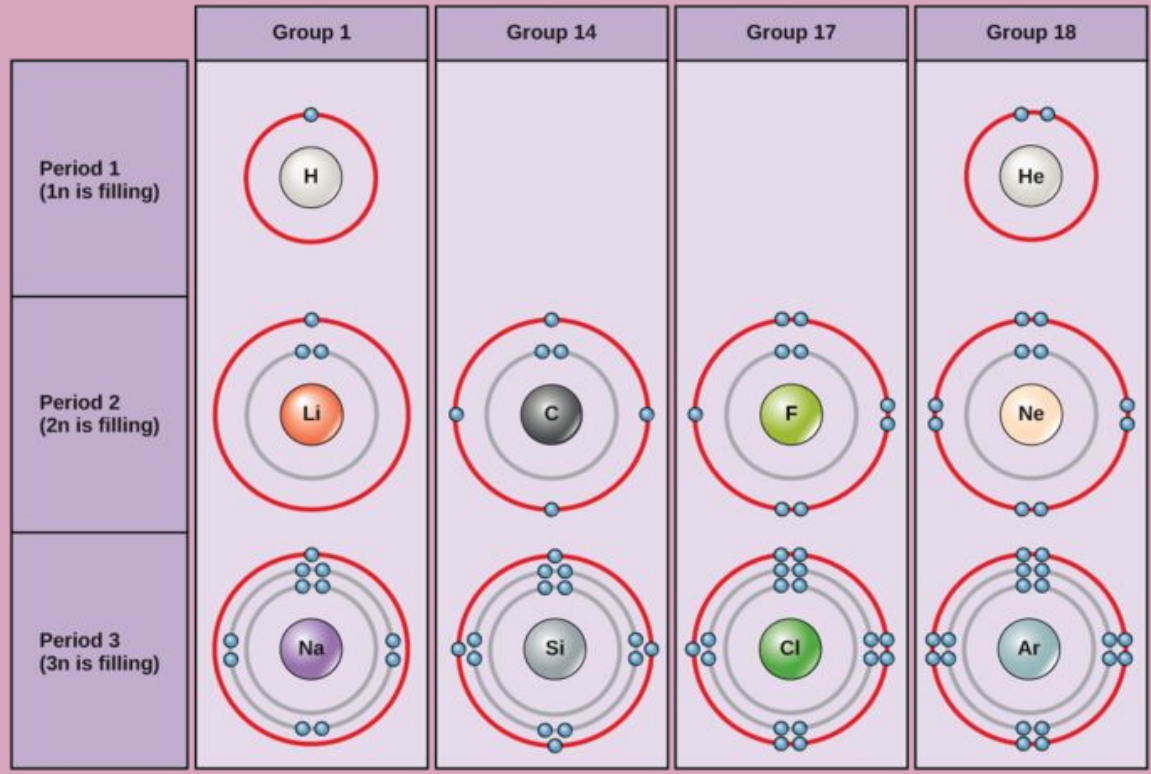
Down a family?

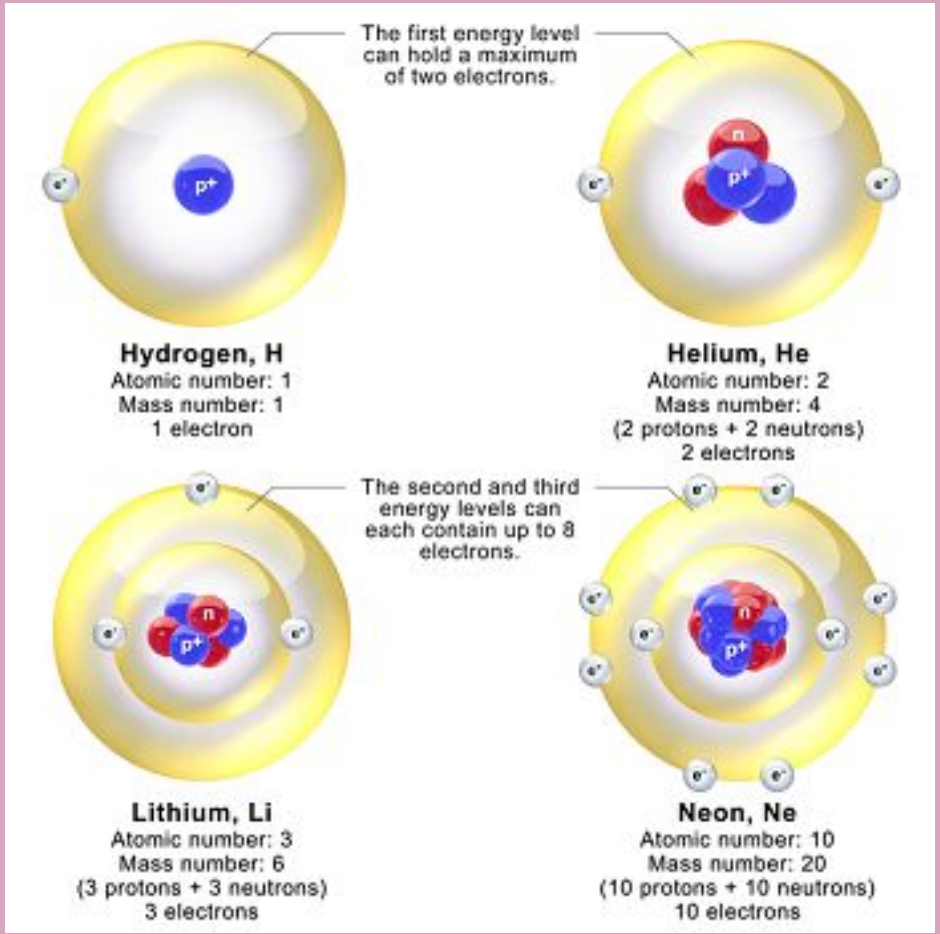


Moving down a family

The atomic radius **increases** moving down a family due to the added energy shells creating more distance between the valence electrons and the nucleus

More energy levels=less force of attraction=larger atomic radius

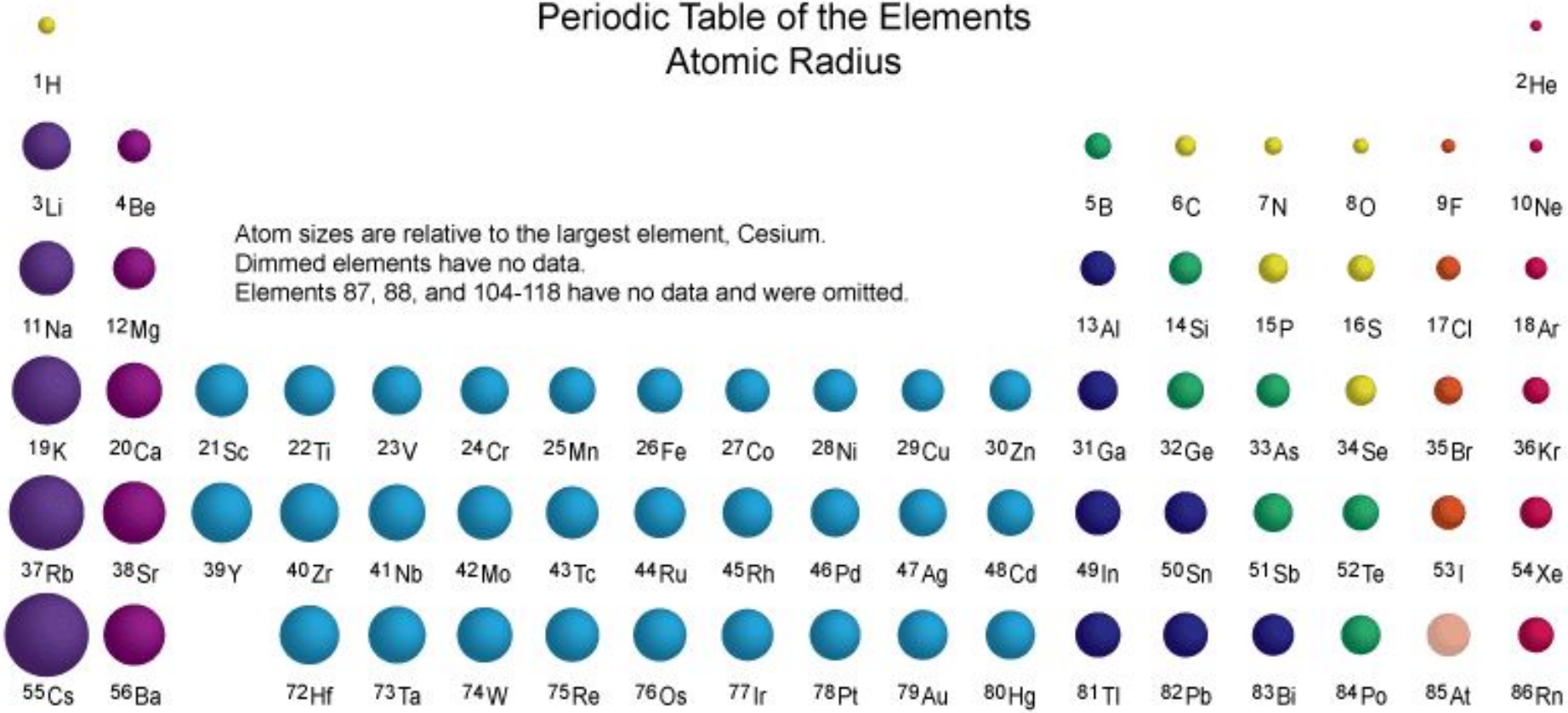




The atomic radius **decreases** moving across a period due to the added protons. These added protons create a larger force of attraction which brings the valence electrons in closer

More protons=more force of attraction=smaller radius

Periodic Table of the Elements
Atomic Radius



Atom sizes are relative to the largest element, Cesium.
Dimmed elements have no data.
Elements 87, 88, and 104-118 have no data and were omitted.

Ionic Radius

Adding or taking away electrons will change the radius. This is called an ionic radius.

Would adding electrons make the radius larger or smaller?

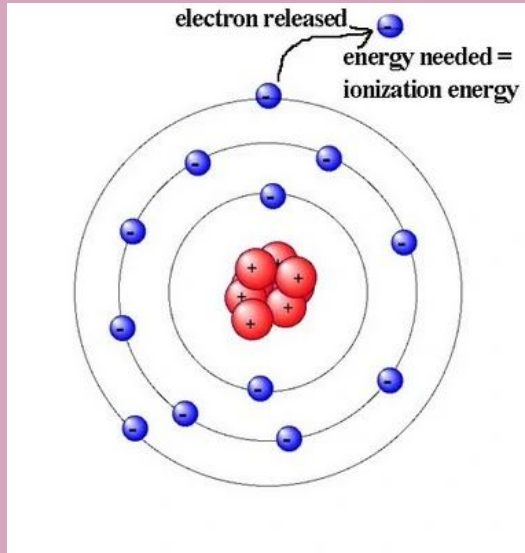
Would getting rid of electrons make the radius larger or smaller?

Picometers (pm)

Multiplication Factor	Prefix	Symbol
1	–	m
$10^{-2} = 0.01$	centi-	cm
$10^{-3} = 0.001$	milli-	mm
$10^{-6} = 0.000001$	micro-	μm
$10^{-9} = 0.000000001$	nano-	nm
$10^{-12} = 0.000000000001$	pico-	pm

Ionization energy*

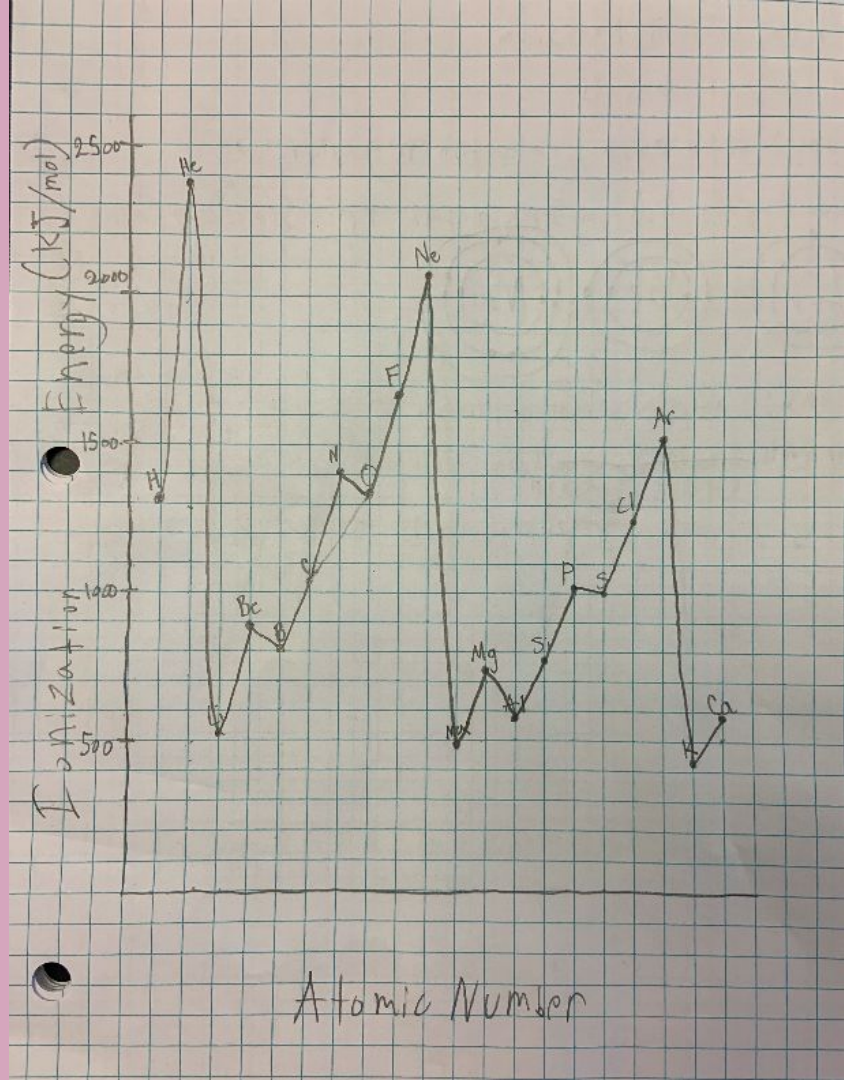
The amount of energy required to remove one valence electron from an atom



Ionization energy

What is the trend as we move across a period?

Down a family?



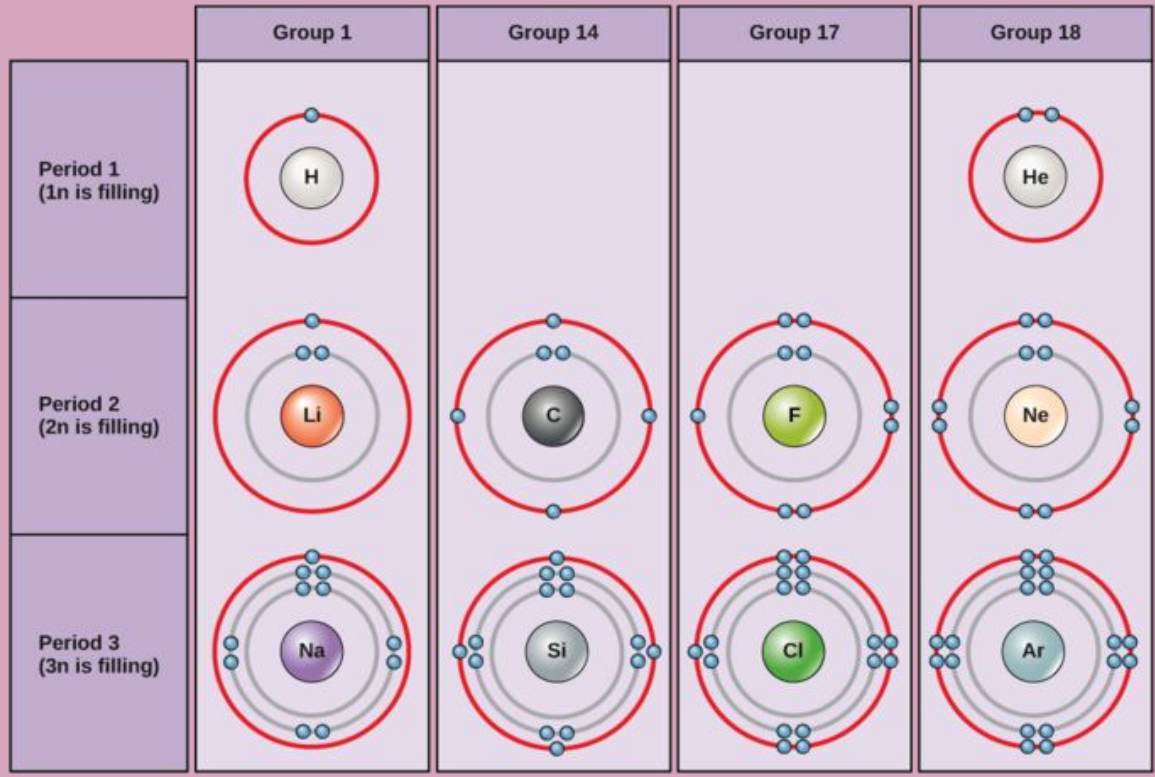
Explain the trends

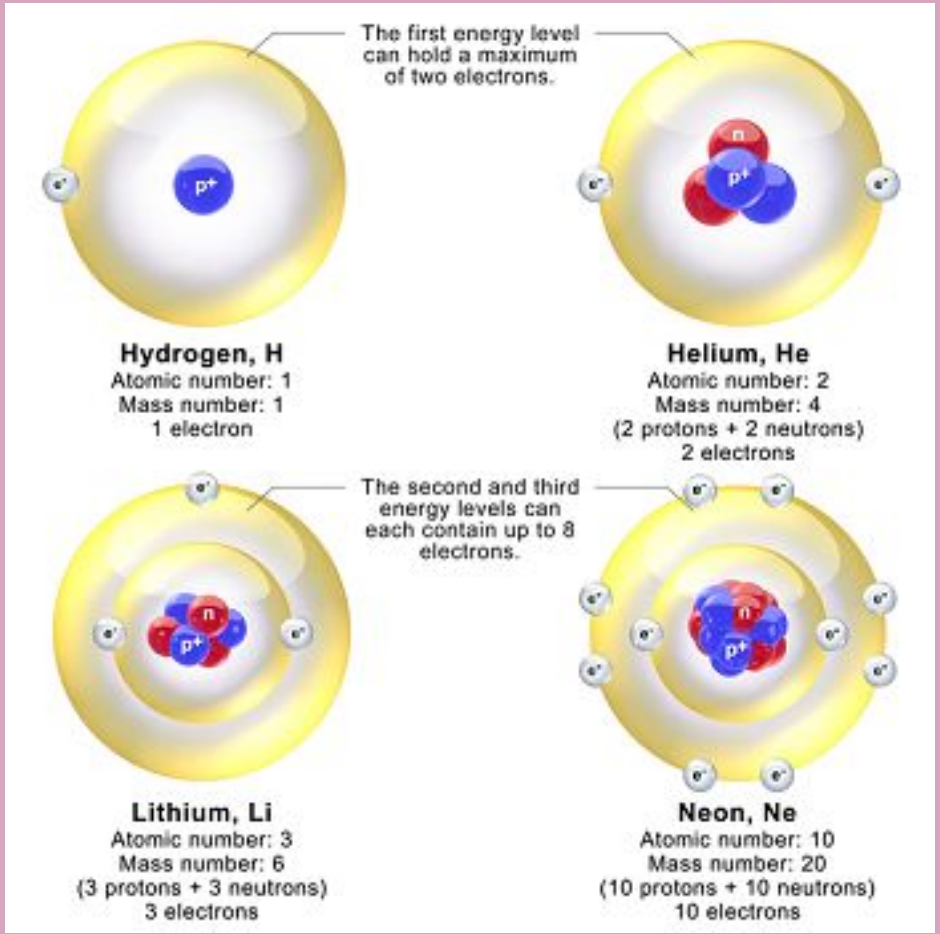
- Ionization energy increases as you move across a period. Why?
- Ionization energy decreases as you move down a family. Why?
- Which has larger ionization energy
  - K or Br
  - Br or I
  - Ba or Be
  - N or Ne

Hint: think about energy levels and number of protons

The ionization energy **decreases** moving down a family due to the added energy shells creating more distance between the valence electrons and the nucleus.

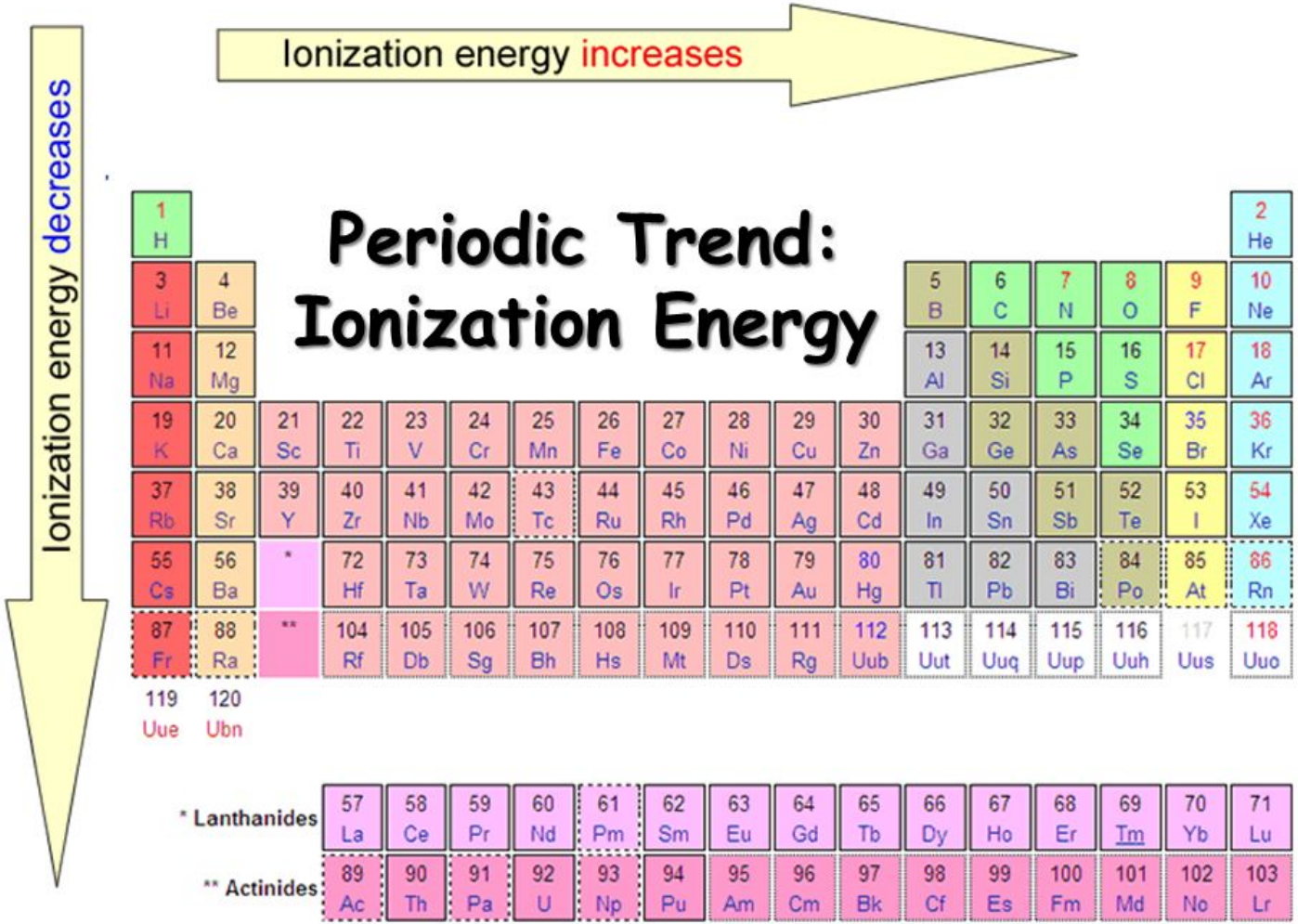
More energy levels=easier to remove 1 valence electron=lower ionization energy





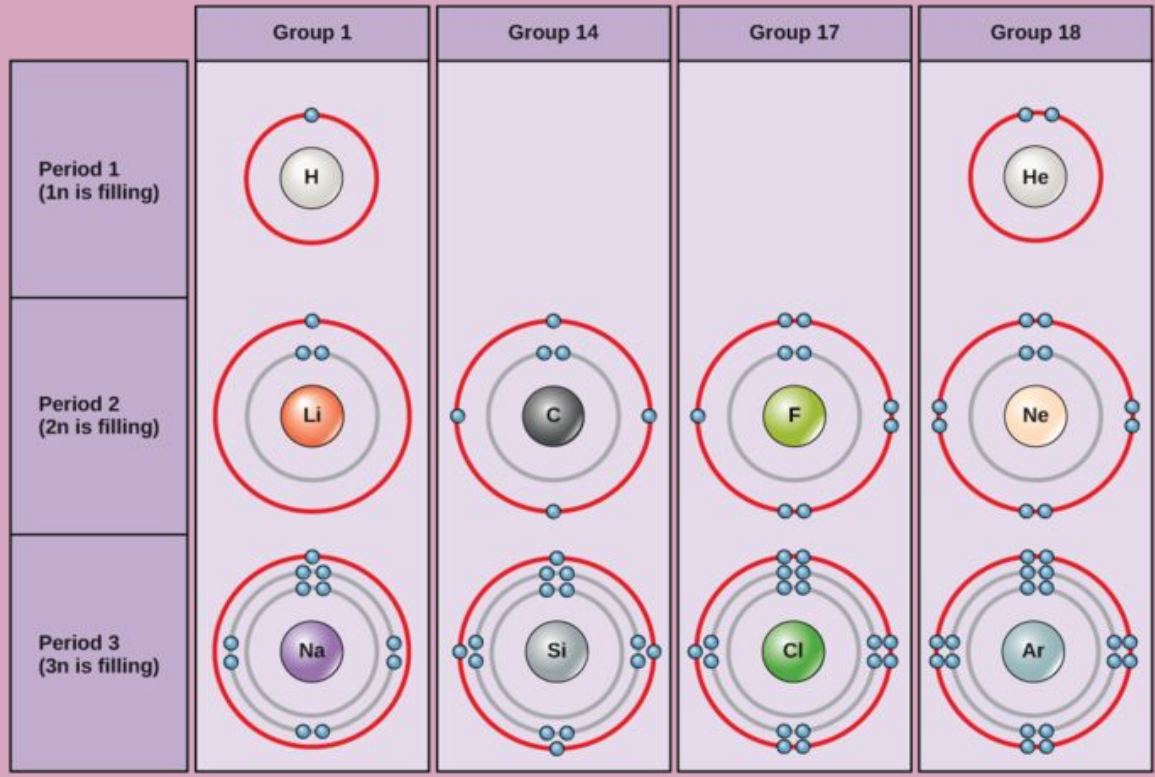
The ionization energy **increases** moving across a period due to the added protons. These added protons create a larger force of attraction which makes it harder to remove one valence electron

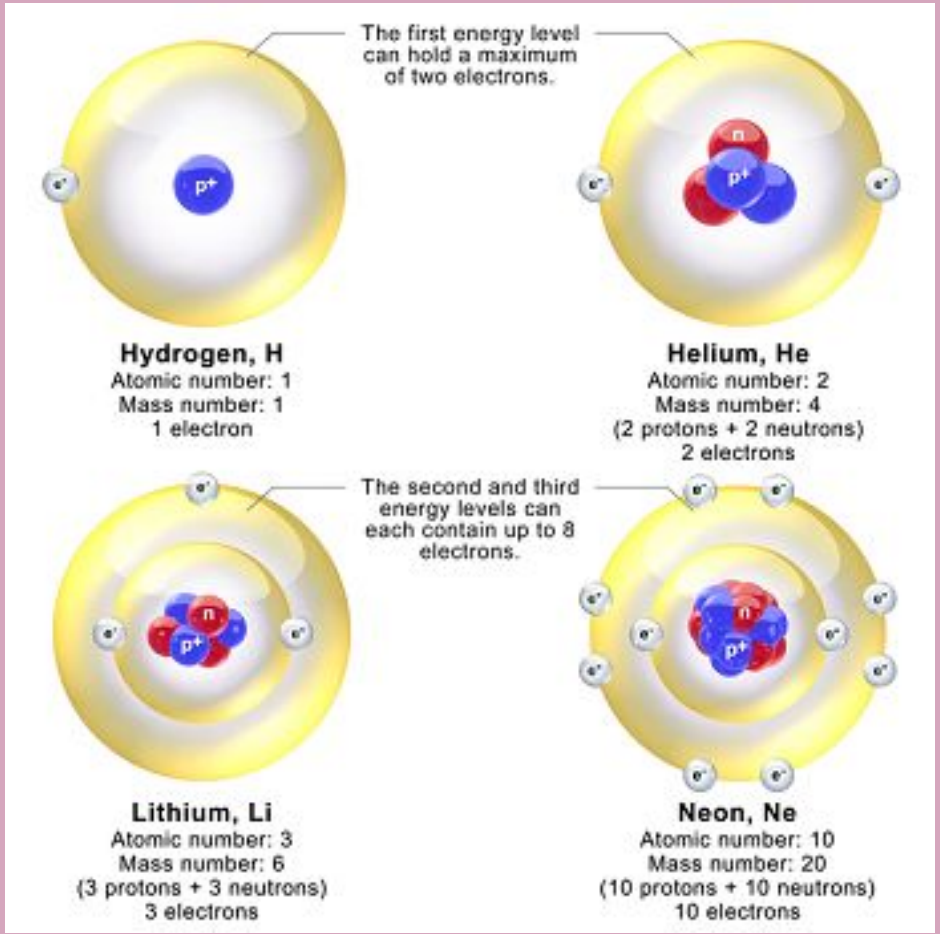
More protons=harder to remove 1 electron=higher ionization energy


Ionization energy increases
Ionization energy decreases
Periodic Trend:
Ionization Energy
1 H
2 He
3 Li
4 Be
5 B
6 C
7 N
8 O
9 F
10 Ne
11 Na
12 Mg
13 Al
14 Si
15 P
16 S
17 Cl
18 Ar
19 K
20 Ca
21 Sc
22 Ti
23 V
24 Cr
25 Mn
26 Fe
27 Co
28 Ni
29 Cu
30 Zn
31 Ga
32 Ge
33 As
34 Se
35 Br
36 Kr
37 Rb
38 Sr
39 Y
40 Zr
41 Nb
42 Mo
43 Tc
44 Ru
45 Rh
46 Pd
47 Ag
48 Cd
49 In
50 Sn
51 Sb
52 Te
53 I
54 Xe
55 Cs
56 Ba
* 72 Hf
73 Ta
74 W
75 Re
76 Os
77 Ir
78 Pt
79 Au
80 Hg
81 Tl
82 Pb
83 Bi
84 Po
85 At
86 Rn
87 Fr
88 Ra
** 104 Rf
105 Db
106 Sg
107 Bh
108 Hs
109 Mt
110 Ds
111 Rg
112 Uub
113 Uut
114 Uuq
115 Uup
116 Uuh
117 Uus
118 Uuo
119 Uue
120 Ubn
* Lanthanides
57 La
58 Ce
59 Pr
60 Nd
61 Pm
62 Sm
63 Eu
64 Gd
65 Tb
66 Dy
67 Ho
68 Er
69 Tm
70 Yb
71 Lu
** Actinides
89 Ac
90 Th
91 Pa
92 U
93 Np
94 Pu
95 Am
96 Cm
97 Bk
98 Cf
99 Es
100 Fm
101 Md
102 No
103 Lr

The ionization energy **decreases** moving down a family due to the added energy shells creating more distance between the valence electrons and the nucleus.

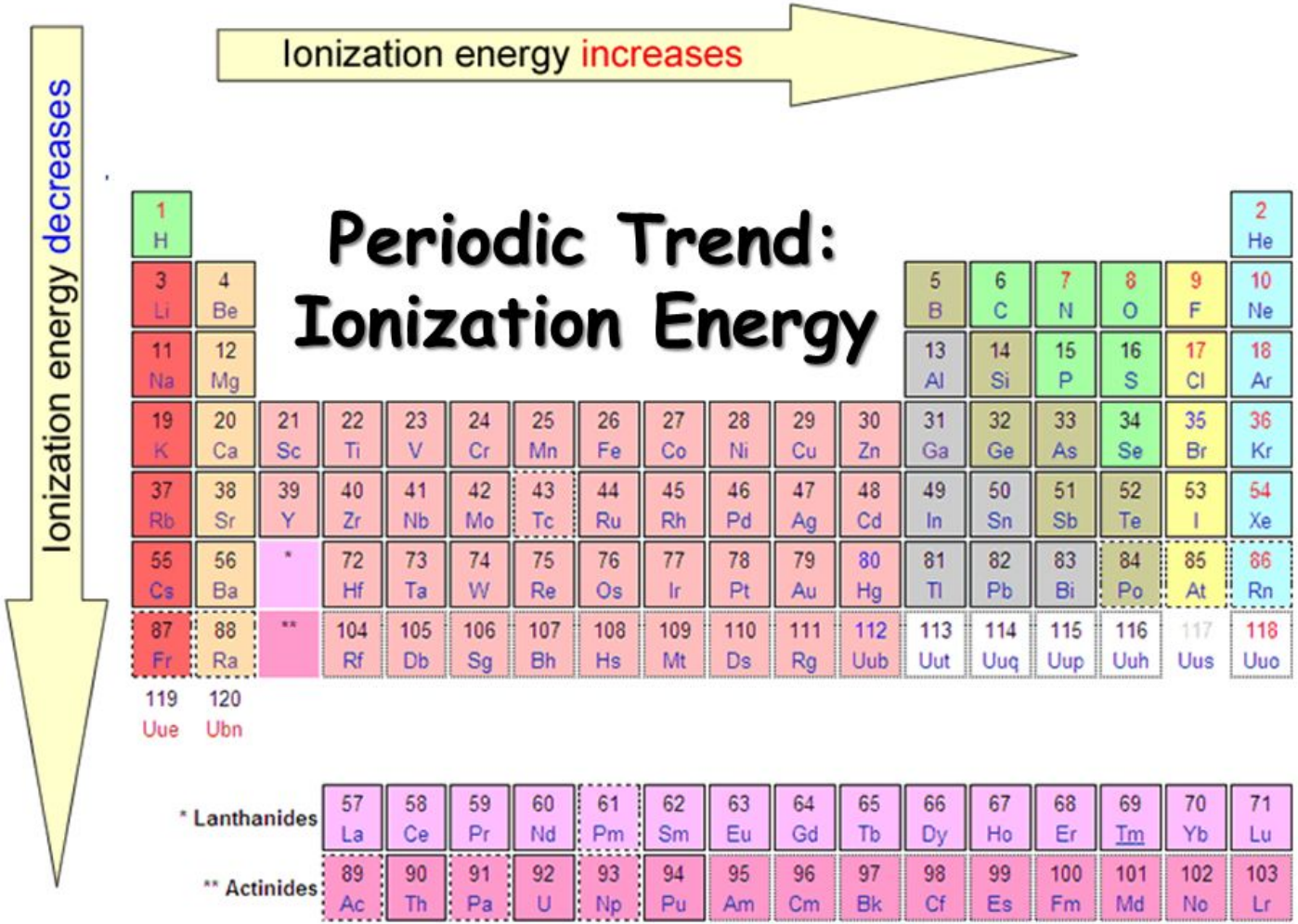
More energy levels=easier to remove 1 valence electron=lower ionization energy





The ionization energy **increases** moving across a period due to the added protons. These added protons create a larger force of attraction which makes it harder to remove one valence electron

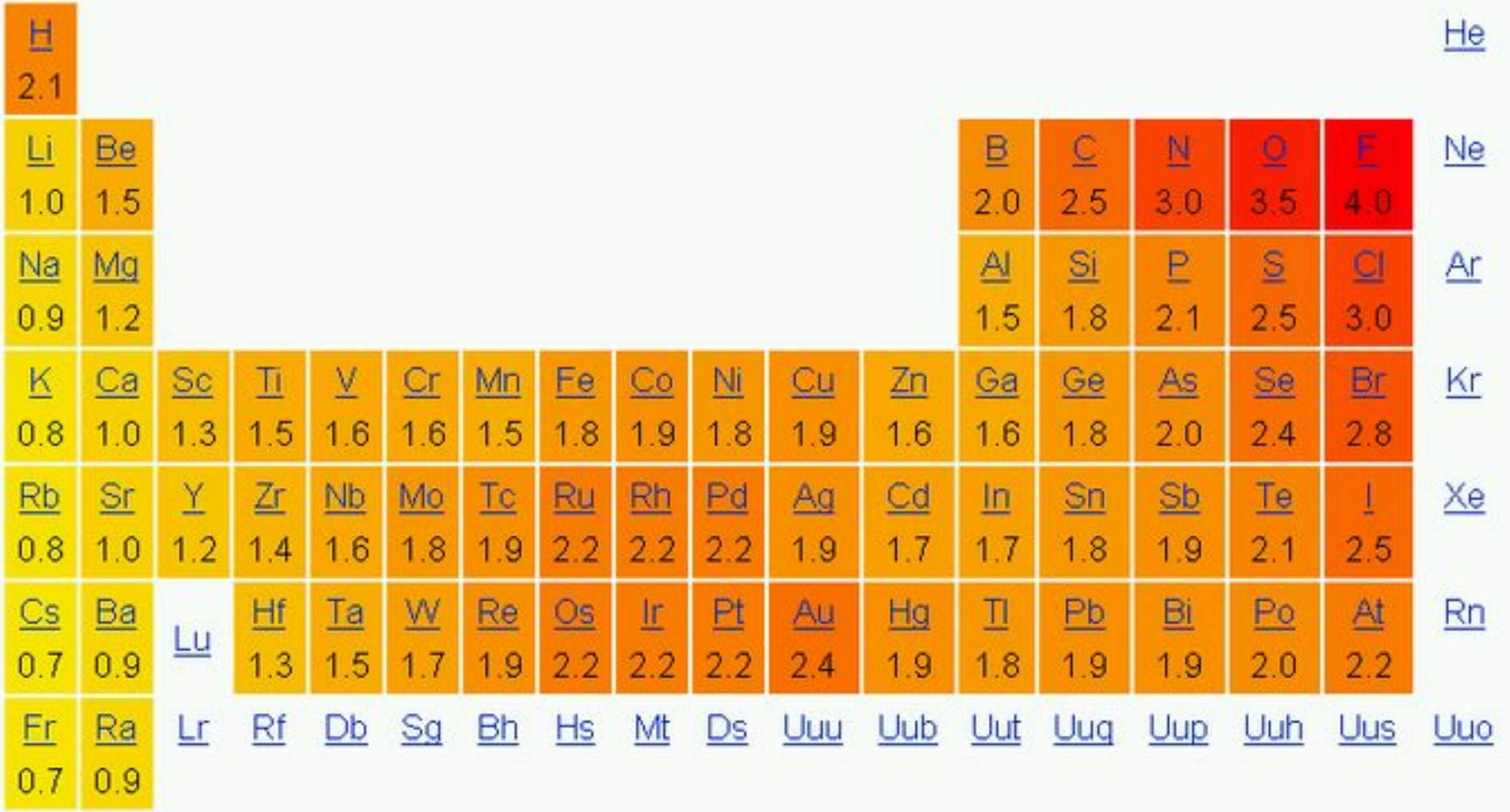
More protons=harder to remove 1 electron=higher ionization energy


Ionization energy increases
Ionization energy decreases
Periodic Trend:
Ionization Energy
1 H
2 He
3 Li
4 Be
5 B
6 C
7 N
8 O
9 F
10 Ne
11 Na
12 Mg
13 Al
14 Si
15 P
16 S
17 Cl
18 Ar
19 K
20 Ca
21 Sc
22 Ti
23 V
24 Cr
25 Mn
26 Fe
27 Co
28 Ni
29 Cu
30 Zn
31 Ga
32 Ge
33 As
34 Se
35 Br
36 Kr
37 Rb
38 Sr
39 Y
40 Zr
41 Nb
42 Mo
43 Tc
44 Ru
45 Rh
46 Pd
47 Ag
48 Cd
49 In
50 Sn
51 Sb
52 Te
53 I
54 Xe
55 Cs
56 Ba
* 72 Hf
73 Ta
74 W
75 Re
76 Os
77 Ir
78 Pt
79 Au
80 Hg
81 Tl
82 Pb
83 Bi
84 Po
85 At
86 Rn
87 Fr
88 Ra
** 104 Rf
105 Db
106 Sg
107 Bh
108 Hs
109 Mt
110 Ds
111 Rg
112 Uub
113 Uut
114 Uuq
115 Uup
116 Uuh
117 Uus
118 Uuo
119 Uue
120 Ubn
* Lanthanides
57 La
58 Ce
59 Pr
60 Nd
61 Pm
62 Sm
63 Eu
64 Gd
65 Tb
66 Dy
67 Ho
68 Er
69 Tm
70 Yb
71 Lu
** Actinides
89 Ac
90 Th
91 Pa
92 U
93 Np
94 Pu
95 Am
96 Cm
97 Bk
98 Cf
99 Es
100 Fm
101 Md
102 No
103 Lr

Electronegativity*

An atom’s tendency to attract electrons in a bond

Based on what we know about charges, will Li or F have a higher electronegativity?


H 2.1
He
Li 1.0
Be 1.5
B 2.0
C 2.5
N 3.0
O 3.5
F 4.0
Ne
Na 0.9
Mg 1.2
Al 1.5
Si 1.8
P 2.1
S 2.5
Cl 3.0
Ar
K 0.8
Ca 1.0
Sc 1.3
Ti 1.5
V 1.6
Cr 1.6
Mn 1.5
Fe 1.8
Co 1.9
Ni 1.8
Cu 1.9
Zn 1.6
Ga 1.6
Ge 1.8
As 2.0
Se 2.4
Br 2.8
Kr
Rb 0.8
Sr 1.0
Y 1.2
Zr 1.4
Nb 1.6
Mo 1.8
Tc 1.9
Ru 2.2
Rh 2.2
Pd 2.2
Ag 1.9
Cd 1.7
In 1.7
Sn 1.8
Sb 1.9
Te 2.1
I 2.5
Xe
Cs 0.7
Ba 0.9
Lu
Hf 1.3
Ta 1.5
W 1.7
Re 1.9
Os 2.2
Ir 2.2
Pt 2.2
Au 2.4
Hg 1.9
Tl 1.8
Pb 1.9
Bi 1.9
Po 2.0
At 2.2
Rn
Fr 0.7
Ra 0.9
Lr
Rf
Db
Sg
Bh
Hs
Mt
Ds
Uuu
Uub
Uut
Uuq
Uup
Uuh
Uus
Uuo

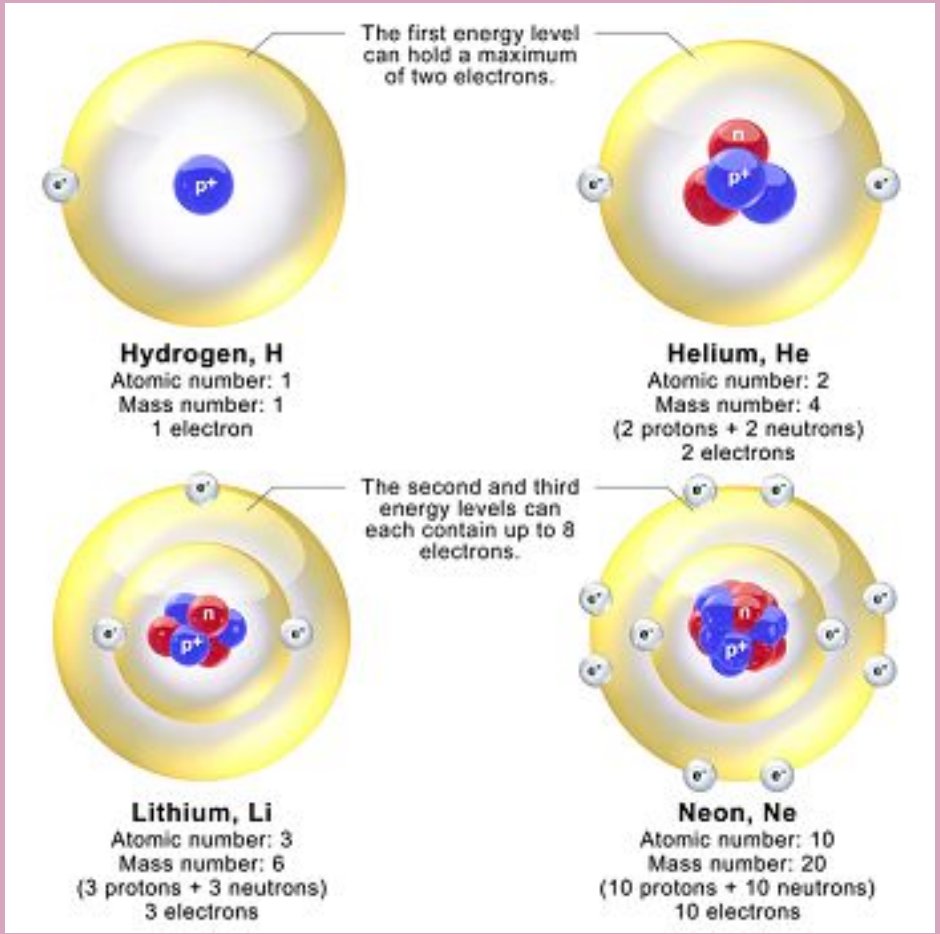
Explain the trends

- Electronegativity increases as you move across a period. Why?
- Electronegativity decreases as you move down a family. Why?
- Write the larger electronegativity
  - F or Li
  - Li or Fr
  - O or S
  - He or Xe

Hint: think about energy levels and number of protons

The electronegativity **decreases** moving down a family due to the added energy shells creating more distance between the valence electrons and the nucleus.

More energy levels=less likely to attract an electron=lower electronegativity

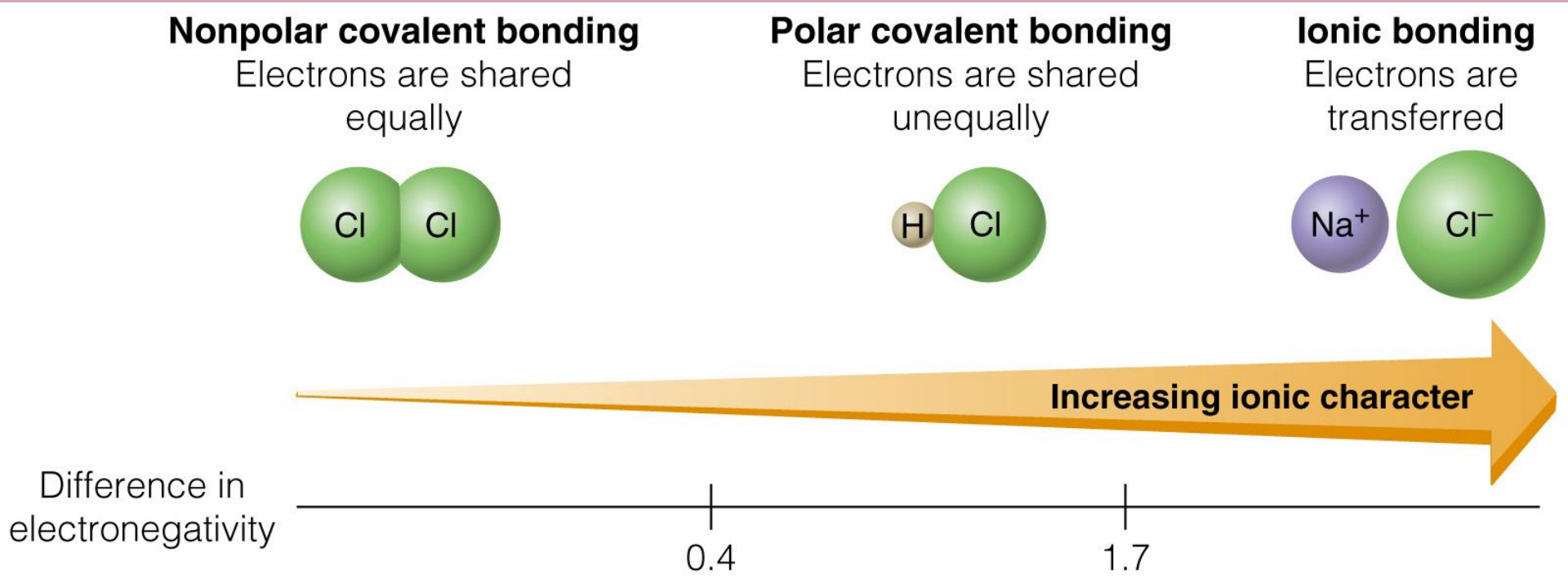


The electronegativity **increases** moving across a period due to the added protons. These added protons create a larger force of attraction which makes it easier to attract an electron

More protons=more likely to attract an electron=higher electronegativity

Electronegativity can show us bond type

We will discuss these bonds throughout this whole unit



Let’s practice

Hold up a finger for which atom has a larger atomic radius

1. Cesium (Cs)
2. Lithium (Li)

Let’s practice

Hold up a finger for which atom has a higher electronegativity

1. Chlorine (Cl)
2. Magnesium (Mg)

Let’s practice

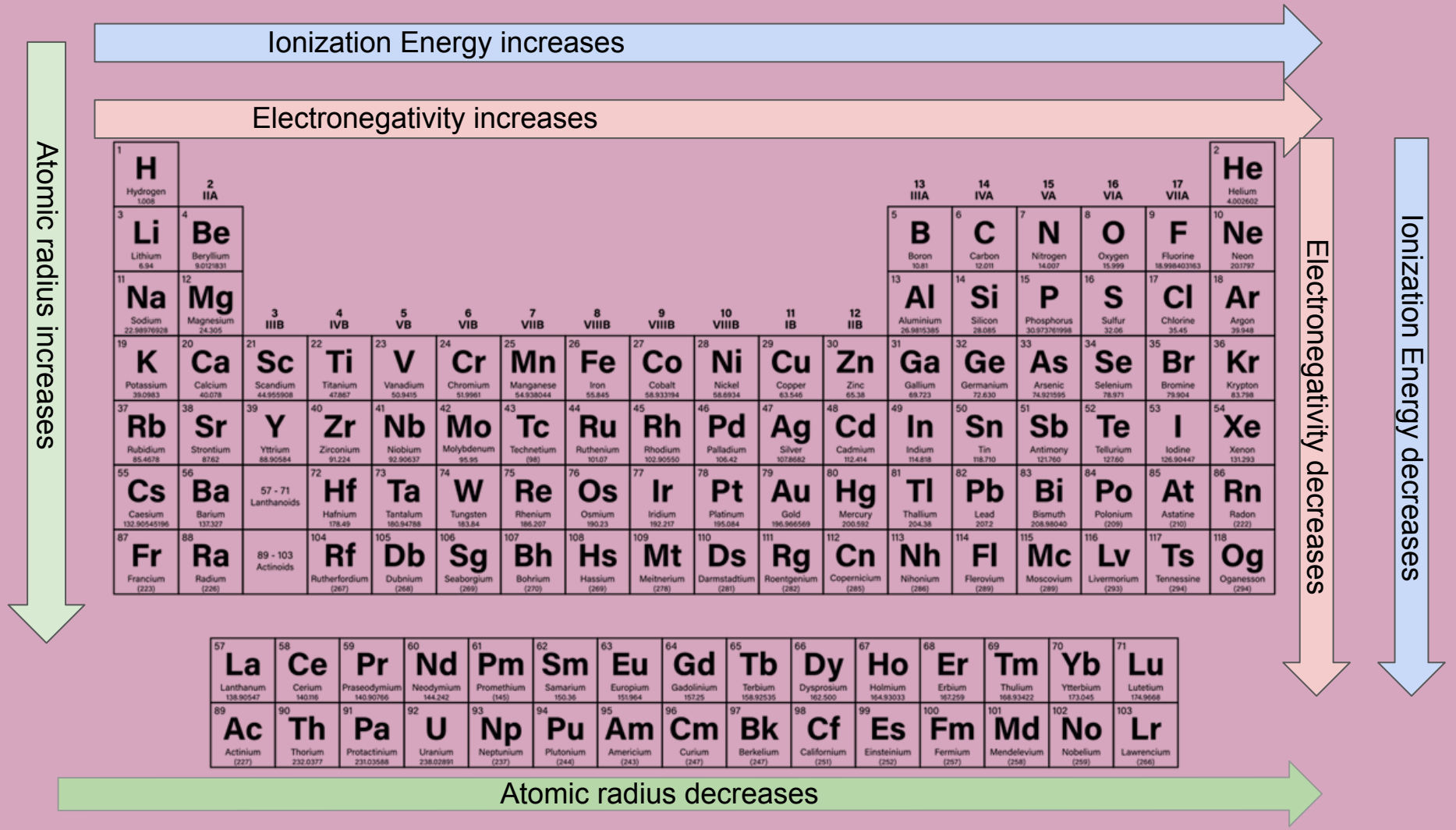
Hold up a finger for which atom has a higher ionization energy

1. Tin (Sn)
2. Carbon (C)

Let’s practice

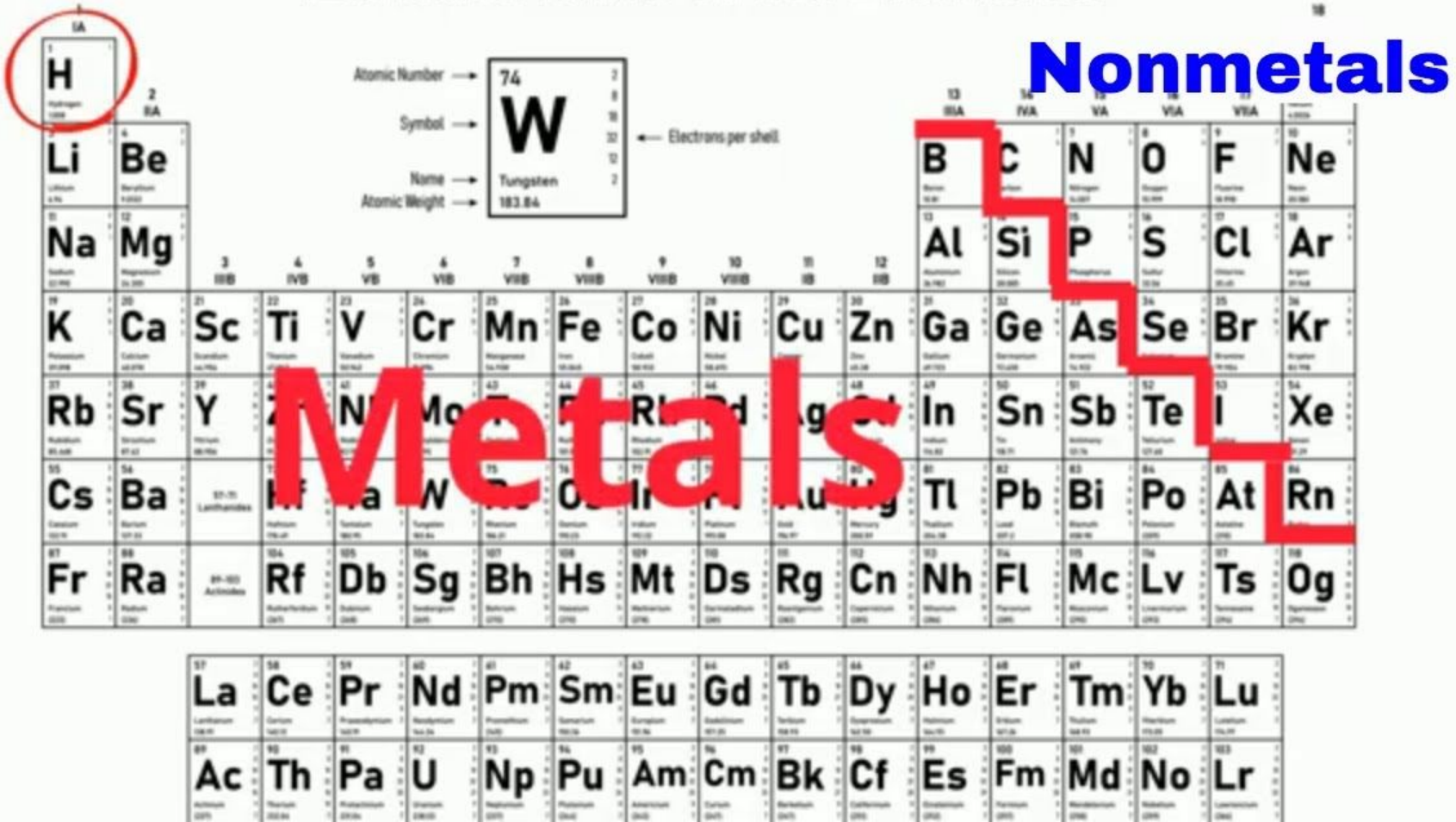
Hold up a finger for which atom has a higher ionization energy

1. Nitrogen (N)
2. Neon (Ne)


Ionization Energy increases
Electronegativity increases
Atomic radius increases
Electronegativity decreases
Ionization Energy decreases
Atomic radius decreases
1 H Hydrogen 1.008
2 He Helium 4.002602
3 Li Lithium 6.94
4 Be Beryllium 9.0121831
5 B Boron 10.81
6 C Carbon 12.011
7 N Nitrogen 14.007
8 O Oxygen 15.999
9 F Fluorine 18.998403163
10 Ne Neon 20.1797
11 Na Sodium 22.98976928
12 Mg Magnesium 24.305
13 Al Aluminium 26.9815385
14 Si Silicon 28.085
15 P Phosphorus 30.973761998
16 S Sulfur 32.06
17 Cl Chlorine 35.45
18 Ar Argon 39.948
19 K Potassium 39.0983
20 Ca Calcium 40.078
21 Sc Scandium 44.955908
22 Ti Titanium 47.867
23 V Vanadium 50.9415
24 Cr Chromium 51.9961
25 Mn Manganese 54.938044
26 Fe Iron 55.845
27 Co Cobalt 58.933194
28 Ni Nickel 58.6934
29 Cu Copper 63.546
30 Zn Zinc 65.38
31 Ga Gallium 69.723
32 Ge Germanium 72.630
33 As Arsenic 74.921595
34 Se Selenium 78.971
35 Br Bromine 79.904
36 Kr Krypton 83.798
37 Rb Rubidium 85.4678
38 Sr Strontium 87.62
39 Y Yttrium 88.90584
40 Zr Zirconium 91.224
41 Nb Niobium 92.90637
42 Mo Molybdenum 95.95
43 Tc Technetium (98)
44 Ru Ruthenium 101.07
45 Rh Rhodium 102.90550
46 Pd Palladium 106.42
47 Ag Silver 107.8682
48 Cd Cadmium 112.414
49 In Indium 114.818
50 Sn Tin 118.710
51 Sb Antimony 121.760
52 Te Tellurium 127.60
53 I Iodine 126.90447
54 Xe Xenon 131.293
55 Cs Caesium 132.90545196
56 Ba Barium 137.327
57 - 71 Lanthanoids
72 Hf Hafnium 178.49
73 Ta Tantalum 180.94788
74 W Tungsten 183.84
75 Re Rhenium 186.207
76 Os Osmium 190.23
77 Ir Iridium 192.217
78 Pt Platinum 195.084
79 Au Gold 196.966569
80 Hg Mercury 200.592
81 Tl Thallium 204.38
82 Pb Lead 207.2
83 Bi Bismuth 208.98040
84 Po Polonium (209)
85 At Astatine (210)
86 Rn Radon (222)
87 Fr Francium (223)
88 Ra Radium (226)
89 - 103 Actinoids
104 Rf Rutherfordium (267)
105 Db Dubnium (268)
106 Sg Seaborgium (269)
107 Bh Bohrium (270)
108 Hs Hassium (269)
109 Mt Meitnerium (278)
110 Ds Darmstadtium (281)
111 Rg Roentgenium (282)
112 Cn Copernicium (285)
113 Nh Nihonium (286)
114 Fl Flerovium (289)
115 Mc Moscovium (289)
116 Lv Livermorium (293)
117 Ts Tennessine (294)
118 Og Oganesson (294)
57 La Lanthanum 138.90547
58 Ce Cerium 140.116
59 Pr Praseodymium 140.90766
60 Nd Neodymium 144.242
61 Pm Promethium (145)
62 Sm Samarium 150.36
63 Eu Europium 151.964
64 Gd Gadolinium 157.25
65 Tb Terbium 158.92535
66 Dy Dysprosium 162.500
67 Ho Holmium 164.93033
68 Er Erbium 167.259
69 Tm Thulium 168.93422
70 Yb Ytterbium 173.045
71 Lu Lutetium 174.9668
89 Ac Actinium (227)
90 Th Thorium 232.0377
91 Pa Protactinium 231.03588
92 U Uranium 238.02891
93 Np Neptunium (237)
94 Pu Plutonium (244)
95 Am Americium (243)
96 Cm Curium (247)
97 Bk Berkelium (247)
98 Cf Californium (251)
99 Es Einsteinium (252)
100 Fm Fermium (257)
101 Md Mendelevium (258)
102 No Nobelium (259)
103 Lr Lawrencium (266)

Which would have the lowest ionization energy

1. H
2. Li
3. C
4. Rb
5. Zr


Periodic Table of the Elements
Nonmetals
Metals
Atomic Number
Symbol
Name
Atomic Weight
74
W
Tungsten
183.84
Electrons per shell
IA
IIA
IIIB
IVB
VB
VIB
VIIB
VIIIB
VIIIB
VIIIB
IB
IIB
IIIA
IVA
VA
VIA
VIIA
H
Li
Be
Na
Mg
K
Ca
Sc
Ti
V
Cr
Mn
Fe
Co
Ni
Cu
Zn
Rb
Sr
Y
Cs
Ba
Fr
Ra
Rf
Db
Sg
Bh
Hs
Mt
Ds
Rg
Cn
B
Al
Si
P
S
Ga
Ge
As
Se
In
Sn
Sb
Te
Tl
Pb
Bi
Po
Nh
Fl
Mc
Lv
Ts
Og
Ne
Ar
Kr
Xe
Rn
La
Ce
Pr
Nd
Pm
Sm
Eu
Gd
Tb
Dy
Ho
Er
Tm
Yb
Lu
Ac
Th
Pa
U
Np
Pu
Am
Cm
Bk
Cf
Es
Fm
Md
No
Lr

Periodic Trend Name	Atomic Radius	Ionization Energy	Electronegativity
Definition	Measurement of the size of an atom.	The amount of energy needed to remove an outermost electron.	The tendency of an atom to attract electrons in a bond.
Trend Down a Family with reasoning	Increases. Increased energy levels = less force of attraction= larger atomic radius.	Decreases. More energy levels=easier to remove 1 valence electron=lower ionization energy	Decreases More energy levels=less likely to attract an electron=lower electronegativity
Trend Across a Period with Reasoning	Decreases. More protons=more force of attraction=smaller radius	Increases. More protons=harder to remove 1 electron=higher ionization energy	Increases More protons=more likely to attract an electron=higher electronegativity

Covalent Nomenclature

9/20-21/22

Bellwork on goformative

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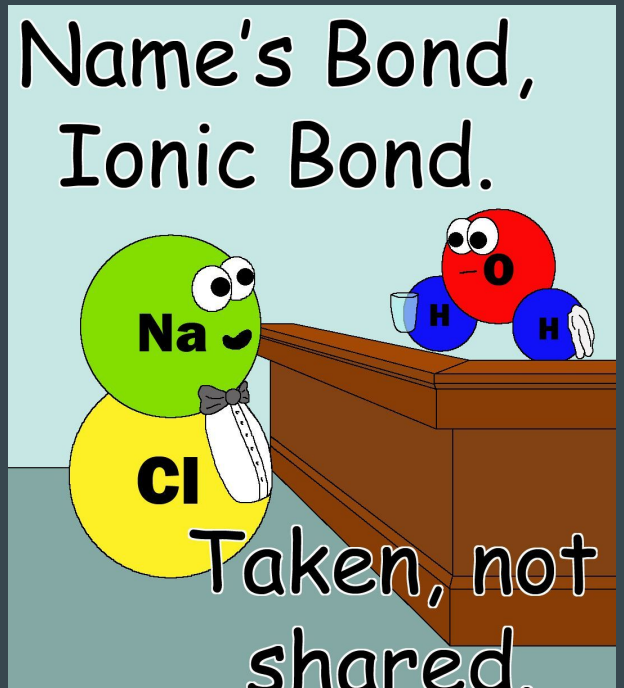


Complete the quiz- you can use your notes but NO TECHNOLOGY

When you finish, look at this website https://www.dhmo.org/truth/Dihydrogen-Monoxide.html (link in bellwork)

- What do you think we should do about DHMO? Be prepared to share

DHMO

- Talk at your groups about what we should do about DHMO

DHMO is WATER (H_2O)

Nomenclature

Scientists use a specific system in order to prevent confusion

Today we will learn about the system for naming covalent compounds

Covalent bonding review

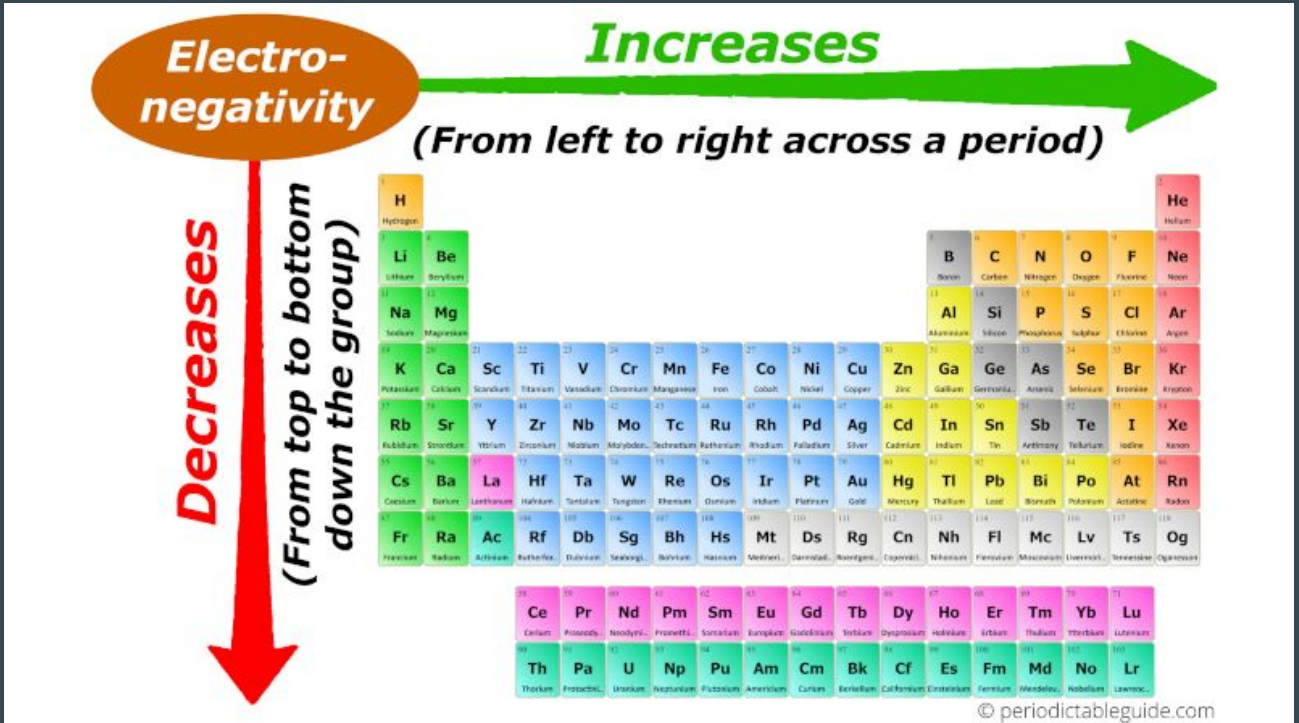
- Covalent bonds are typically between nonmetals
- In covalent bonds the atoms share a pair of electrons
- Covalent compounds are named differently than ionic compounds

What trends do you notice with the following names? Turn and talk

- CO_2- Carbon Dioxide
- NO- Nitrogen Monoxide
- SF_6-Sulfur Hexafluoride
- N_2O- Dinitrogen monoxide

Covalent nomenclature rules

1. The least electronegative element is named first



Covalent nomenclature rules

1. The least electronegative element is named first (typically)
2. If there is a subscript on the first element, then a prefix will be used

Number	Greek Prefix	Number	Greek Prefix
1	N/A	6	hexa
2	di	7	hepta
3	tri	8	octa
4	tetra	9	nona
5	penta	10	deca

Covalent nomenclature rules

3. A prefix will be used for the second element (even if only one is present)

Number	Greek Prefix	Number	Greek Prefix
1	mono	6	hexa
2	di	7	hepta
3	tri	8	octa
4	tetra	9	nona
5	penta	10	deca

Covalent nomenclature rules

4. Drop the ending of the second element and replace it with “ide”

- The ending is always dropped at a vowel
  - Fluorine —> Fluoride
  - Chlorine —> Chloride
  - Oxygen —> Oxide
  - Hydrogen —> Hydride

Example- CF_4

1. The least electronegative atom is named first
2. If there is a subscript, then a prefix will be used
3. A prefix will be used for the second element (even if only one is present)
4. Drop the ending and replace it with “ide”

1. Carbon
2. N/A
3. Tetra
4. Fluoride

Carbon tetrafluoride

Example- H_2O

1. The least electronegative atom is named first
2. If there is a subscript, then a prefix will be used
3. A prefix will be used for the second element (even if only one is present)
4. Drop the ending and replace it with “ide”

1. Hydrogen
2. Di
3. Mono
4. Oxide

Dihydrogen monoxide

Practice problem- Name N_2O_5

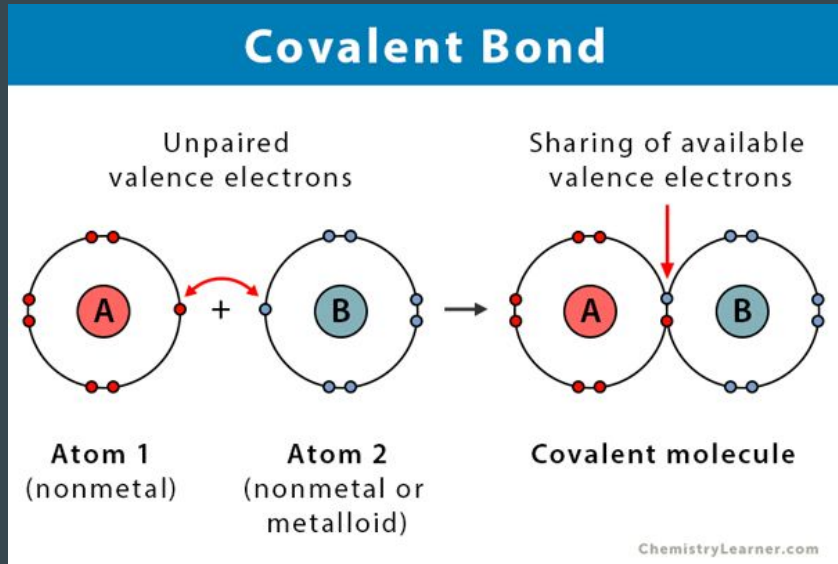
1. Nitrogen pentoxide
2. Dinitrogen pentoxide
3. Dinitrogen tetroxide
4. Mononitrogen dioxide

Practice problem- CO

1. Carbon monoxide
2. Monocarbon monoxide
3. Carbon monoxygen
4. Monocarbon oxide

What is a covalent bond?*

A covalent bond is a chemical bond that involves the sharing of electron pairs between atoms



Covalent bond properties

- Bad conductors (no ions)
- Difference in electronegativity is typically less than 1.8
- Low melting and boiling point

States of matter for covalent compounds

Due to low melting and boiling points, what states of matter do you think covalent compounds are at room temperature?

Discuss with your group

Compound	Melting Point (°C)	Boiling Point (°C)
ethanol , C_2H_5OH	-114	+78.3
ammonia, NH_3	-77.7	-33.3
cesium bromide, CsBr	+636	+1300
hydrogen, H_2	-259	-253
hydrogen chloride, HCl	-114	-85
magnesium oxide, MgO	+2825	+3600
methane, CH_4	-182	-161
nitrogen, N_2	-210	-196
sodium chloride, NaCl	+801	+1465
water, H_2O	0	+100

Work on your practice problems

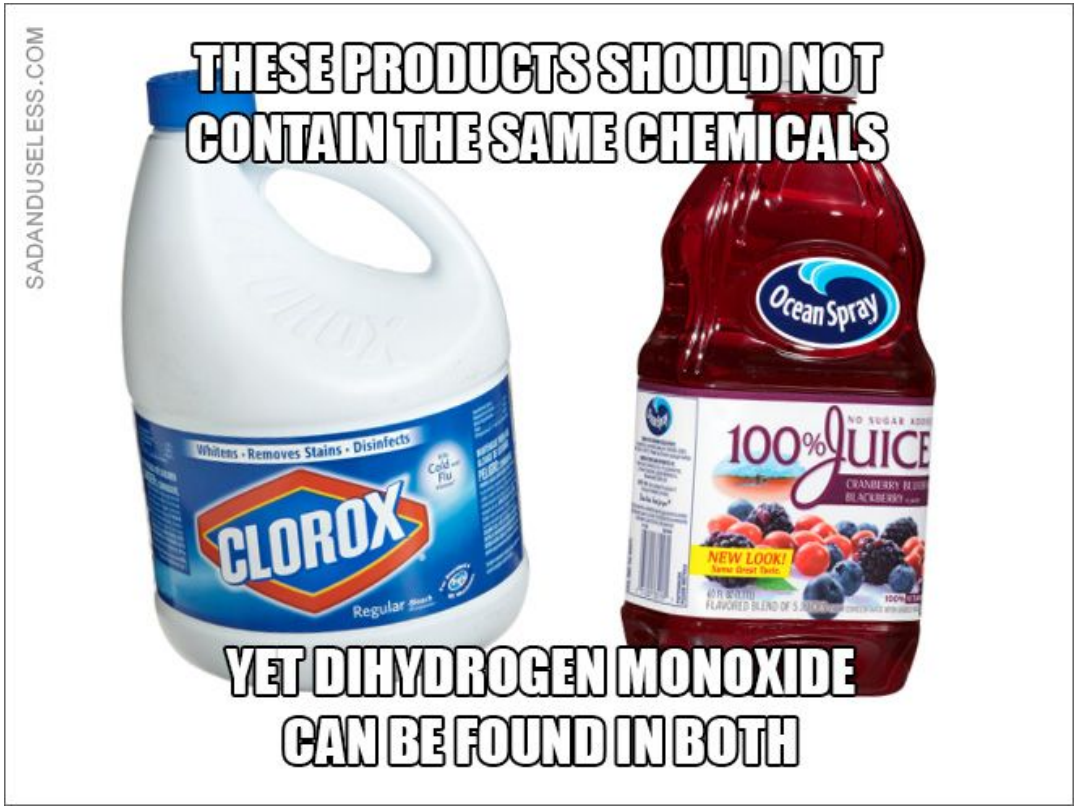
Hallway races

- We will be practicing our nomenclature in a hallway race
- Every student needs a marker
- Every group member must go before you can go again
- You can only answer one question OR make one correction
- Cheer on you team and help them from the locker side of the hallway
- WINNERS: get 2 chem money

Exit ticket

Take your exit ticket on formative

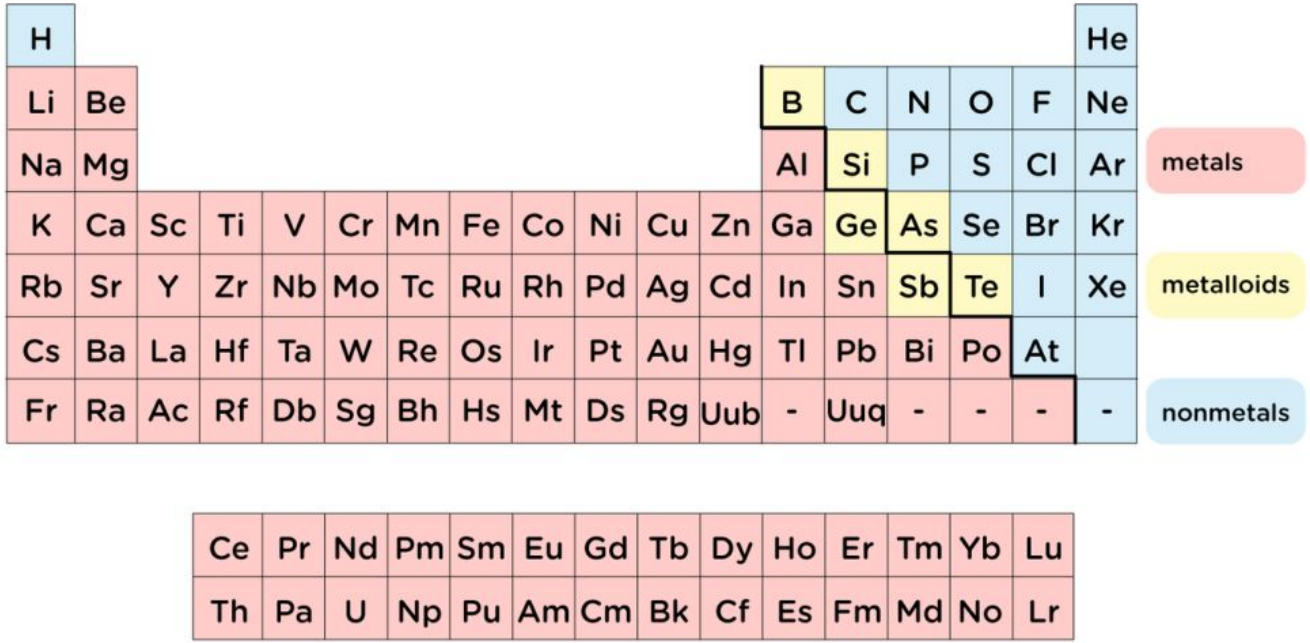
Ionic Nomenclature



Objectives

- SWBAT list the rules for naming ionic compounds in order to be able to formulate the correct names for specified ionic compounds.

Metals, Nonmetals, and Metalloids

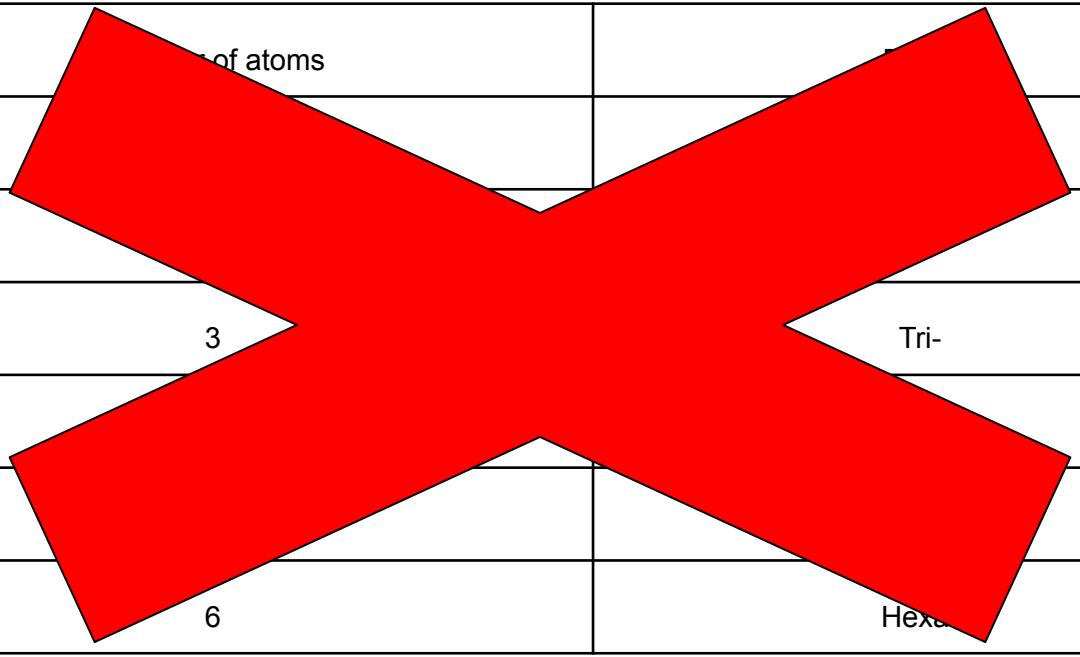


Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Jack Westin

No prefixes are used when naming ionic compounds!

of atoms	
3	Tri-
6	Hex



*Ionic Formula to Name Rules

1. Write down the name of the metal.
2. Write down the name of the non-metal.
3. Change the ending of the non-metal to

Write the Name of NaCl

1. Write down the name of the metal.
2. Write down the name of the non-metal.
3. Change the ending of the non-metal to -ide.

1. Sodium
2. Chlorine
3. Chloride

Sodium Chloride

Write the Name of MgI_2

1. Write down the name of the metal.
2. Write down the name of the non-metal.
3. Change the ending of the non-metal to -ide.

1. Magnesium
2. Iodine
3. Iodide

Magnesium Iodide

Quiz

A. Iodine Sodide

B. Sodium Iodine

C. Sodium Iodide

D. Sodium Monoiodide

How to Edit

Click Edit This Slide in the plugin to make changes.

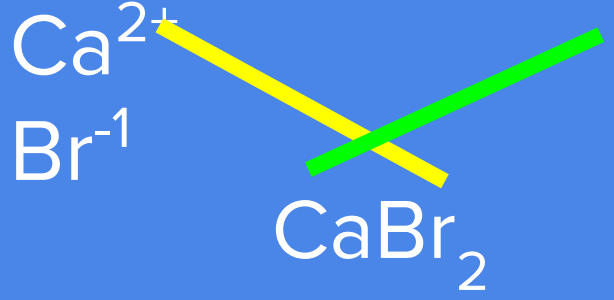
Don't have the Nearpod add-on? Open the "Add-ons" menu in Google Slides to install.

*Ionic Name to Formula Rules

1. Write down the charges of the ions.
2. Criss-cross the charges down to the subscripts.

*Calcium Bromide Formula

1. Write down the charges of the ions.
2. Criss-cross the charges down to the subscripts.



Potassium Nitride Formula

1. Write down the charges of the ions.
2. Criss-cross the charges down to the subscripts.

K^{+1}

N^{-3}

K_3N

Quiz

A. Rb_2S

B. RbS

C. RbS_2

D. Rb_2S_2

How to Edit

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Time for a QUIZIZZ!

*The first step in naming is ALWAYS determining if the compound is covalent or ionic

*Ionic compounds are metal + non-metal

*Covalent compounds are two non-metals

Ionic or Covalent?

1. Be_3N
2. NaCl
3. CO_2
4. NO_3
5. LiCl

Quiz

A. Ionic

B. Covalent

How to Edit

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Time for a QUIZIZZ!

Complete the Chemistry 9/25 GoFormative

What is the formula for Iron (II) Oxide?

Talk with your table groups to determine this formula. (Hint: The roman numeral II gives us the charge of the iron)

*Naming Ionic Compounds that include transition metals

- The roman numeral in the written name provides the **charge** of the transition metal.
- When writing the formula the charges must equal 0

Formula to Name with Transition Metals

$CoCl_2$

Fe_2S_3

Name to Formula with Transition Metals

Gold (III) Chloride

Mercury (II) Oxide

Polyatomic ions nomenclature

9/27-28

9/27 Chem GoFormative

SWBAT use the periodic table and **electronegativity** differences of elements IOT write the names of **chemical compounds** including **polyatomic ions** using IUPAC criteria.

Chemistry in pottery

A combination of iron and oxygen are used to create all the following colors in pottery.

How do you think this is possible?

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Chemistry in pottery

Iron (II) Oxide

Iron (III) Oxide

Iron (II) Hydroxide

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Monatomic ions

- Single atom that either gains or loses an electron to become an ion
- Ex: Cl-

Polyatomic ions

- A molecule that has gained or lost an electron to become an ion

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Polyatomic ions

- A molecule that has gained or lost an electron to become an ion

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Common Polyatomic Ions			
Ion	Name	Ion	Name
NH_4^+	Ammonium	CO_3^{2-}	Carbonate
NO_2^-	Nitrite	HCO_3^-	Hydrogen carbonate Or Bicarbonate
NO_3^-	Nitrate	ClO^-	Hypochlorite
SO_3^{2-}	Sulfite	ClO_2^-	Chlorite
SO_4^{2-}	Sulfate	ClO_3^-	Chlorate
HSO_4^-	Hydrogen sulfate Or Bisulfate	ClO_4^-	Perchlorate
OH^-	Hydroxide	$C_2H_3O_2^-$	Acetate
CN^-	Cyanide	MnO_4^-	Permanganate
PO_4^{3-}	Phosphate	$Cr_2O_7^{2-}$	Dichromate
HPO_4^{2-}	Hydrogen phosphate	CrO_4^{2-}	Chromate
$H_2PO_4^{2-}$	Dihydrogen phosphate	O_2^{2-}	Peroxide

Let’s play polyatomic bingo to familiarize ourselves with polyatomic ions

Naming polyatomic ions

What is the name of the compound with the formula $AlPO_4$

Aluminum Phosphate

RULES:

- Name the metal first
- Name the polyatomic ion
- Never drop the ending of a polyatomic ion

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Name $(NH_4)_2S$

- Ammonium Sulfide

Name $Ni_3(PO_4)_2$

- Nickel (II) Phosphate

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Polyatomic ion name to formula

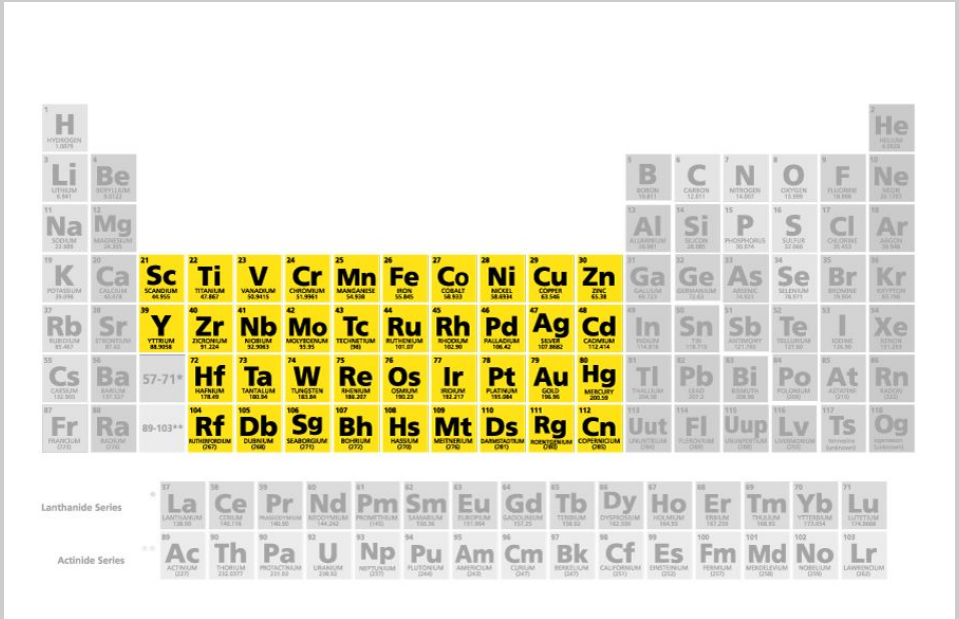
What is the chemical formula for calcium hydroxide?

$Ca(OH)_2$

- Find charges of ions
- Cross charges
- Include parenthesis when adding a subscript to polyatomic ions

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Transition Metals



- For transition metals the charge must be indicated with Roman numerals in parentheses

What would the formula be for Iron (II) Hydroxide?

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Whiteboard practice

Write the formula for

- Calcium carbonate
- Magnesium nitrite
- Sodium acetate

Whiteboard practice

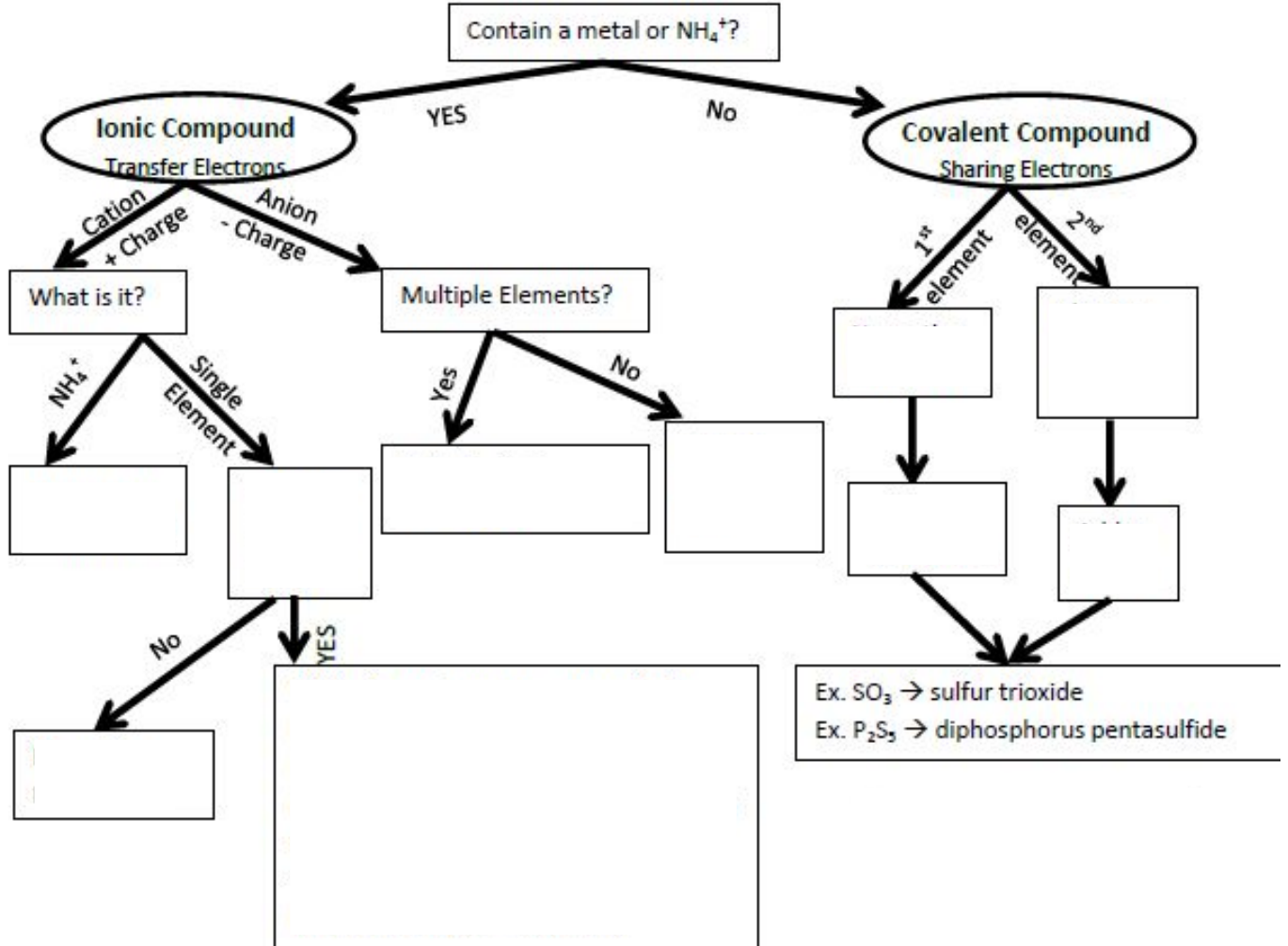
Write the formula for

- Manganese (III) Oxide
- CoO
- HgN

Whiteboard practice

Name	Formula
	$FeCN$
	SF_6
	$(NH_4)_2Cr_2O_7$
Copper (III) hydroxide	
	$SrCl_2$
Magnesium hydroxide	

Formulas → Names



Station 4-Quizizz code 4865 0275

SWBAT use the periodic table and electronegativty differences of elements IOT write the names of chemical compounds including polyatomic ions using IUPAC criteria.

Complete Nomenclature Review GoFormative

Complete the 4 review stations

1. Complete the ionic and covalent properties card sort. Have Mr. Emptage check it when you finish.
2. Complete the questions in the station 2 section of the sheet using the article to help you.
3. Complete the Nomenclature domino style card sort. You may google search the acids and the cards that have formulas that start with H.
4. Complete the Quizizz with the Join Code **8706 0871**

IF DONE EARLY

Compete the QUIZIZZ with the join code