

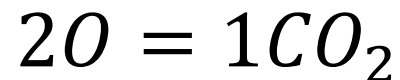
MONDAY, FEBRUARY 11th

DO NOW

- In your notebooks, to be checked, solve this problem...

There are 2 Oxygen in 1 Carbon Dioxide (CO_2). These are units of Chemistry!

Know:



Asked: How many atoms of Oxygen are in 7 Carbon Dioxide Molecules?

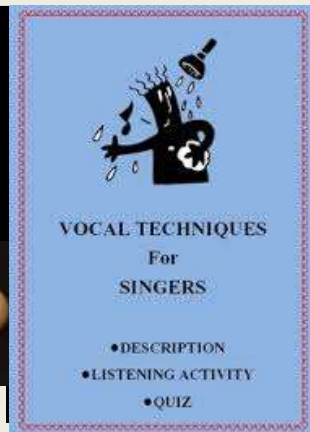
TODAY'S PLAN

1. Do and review the **DO NOW** and **Qualitative Prompt (QP)**!
 - Today's **QP** = QP BOOK REVIEW = Using Pg. 184-185 of your book SKETCH the "Electron Cloud", "Space-filling" and "BOHR" Models of the Atom and then DEFINE the term "Valence Electron"!
2. Open books, **WORK** on today's **AO**!
3. ***HW** = Finish Jot Down Notes!

TODAY'S ACADEMIC OBJECTIVE

Today you will use information about a Chemical Element for use in **BRINGING** a 2-D Atomic Model into three dimensions!

SCIENCE QUIZ ALERT



• Students, listen UP!!!

– We will be having a **VOCAL QUIZ** on to help us LEARN the Chemical Symbols for some COMMON Chemical Elements!

– This quiz will require you to STUDY your Periodic Tables!

– You are responsible for learning the NAME that goes with these 24 Chemical Element SYMBOLS!

- Li, Be, Sr, Ba, Ti, Zr, V, Cr, Mo, Co, Ir, Pu, Cd, B, Ga, Cf, Ge, As, Sb, Bi, Se, Br, At, Xe!

12	→	ATOMIC NUMBER
Mg	→	CHEMICAL SYMBOL
Magnesium	→	CHEMICAL NAME
24.305	→	ATOMIC MASS

SCIENCE QUIZ ALERT



VOCAL TECHNIQUES

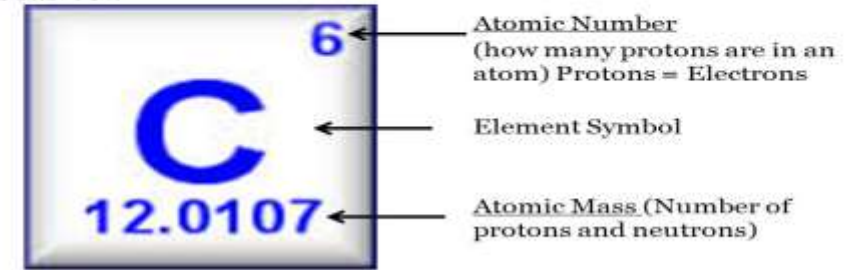
Periodic Table of the Elements

1 H Hydrogen 1.008	2 He Helium 4.003																
3 Li Lithium 6.941	4 Be Beryllium 9.012	5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.180										
11 Na Sodium 22.990	12 Mg Magnesium 24.305	13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948										
19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.956	22 Ti Titanium 47.867	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.845	27 Co Cobalt 58.933	28 Ni Nickel 58.693	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.723	32 Ge Germanium 72.613	33 As Arsenic 74.922	34 Se Selenium 78.971	35 Br Bromine 79.904	36 Kr Krypton 83.798
37 Rb Rubidium 84.468	38 Sr Strontium 87.62	39 Y Yttrium 88.906	40 Zr Zirconium 91.224	41 Nb Niobium 92.906	42 Mo Molybdenum 95.95	43 Tc Technetium 98.907	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.906	46 Pd Palladium 106.42	47 Ag Silver 107.868	48 Cd Cadmium 112.414	49 In Indium 114.818	50 Sn Tin 118.710	51 Sb Antimony 121.760	52 Te Tellurium 127.6	53 I Iodine 126.904	54 Xe Xenon 131.294
55 Cs Cesium 132.905	56 Ba Barium 137.328	57-71 Lanthanides	72 Hf Hafnium 178.49	73 Ta Tantalum 180.948	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.085	79 Au Gold 196.967	80 Hg Mercury 200.592	81 Tl Thallium 204.383	82 Pb Lead 207.2	83 Bi Bismuth 208.980	84 Po Polonium [209]	85 At Astatine 209.987	86 Rn Radon 222.018
87 Fr Francium 223.020	88 Ra Radium 226.025	89-103 Actinides	104 Rf Rutherfordium [261]	105 Db Dubnium [262]	106 Sg Seaborgium [266]	107 Bh Bohrium [264]	108 Hs Hassium [269]	109 Mt Meitnerium [268]	110 Ds Darmstadtium [269]	111 Rg Roentgenium [272]	112 Cn Copernicium [277]	113 Uut Ununtrium unknown	114 Fl Flerovium [289]	115 Uup Ununpentium unknown	116 Lv Livermorium [298]	117 Uus Ununseptium unknown	118 Uuo Ununoctium unknown
57 La Lanthanum 138.905	58 Ce Cerium 140.116	59 Pr Praseodymium 140.908	60 Nd Neodymium 144.243	61 Pm Promethium 144.913	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.500	67 Ho Holmium 164.930	68 Er Erbium 167.259	69 Tm Thulium 168.934	70 Yb Ytterbium 173.055	71 Lu Lutetium 174.967			
89 Ac Actinium 227.028	90 Th Thorium 232.038	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium 237.048	94 Pu Plutonium 244.064	95 Am Americium 243.061	96 Cm Curium 247.070	97 Bk Berkelium 247.070	98 Cf Californium 251.080	99 Es Einsteinium [254]	100 Fm Fermium 257.095	101 Md Mendelevium 258.1	102 No Nobelium 259.101	103 Lr Lawrencium [262]			

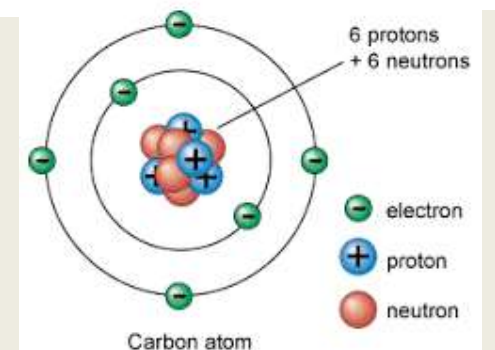
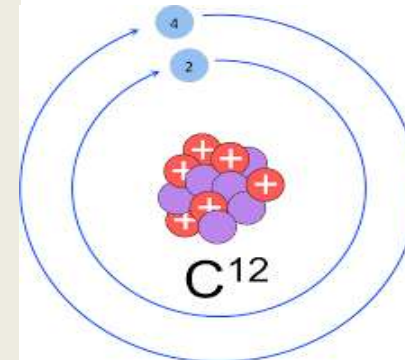
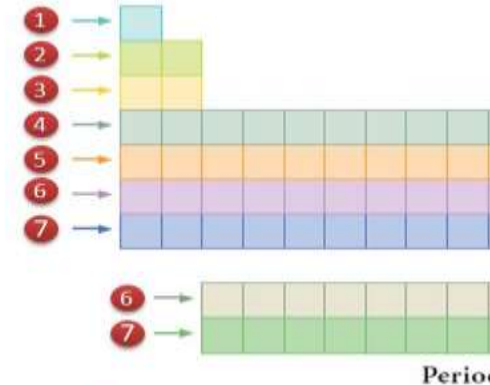
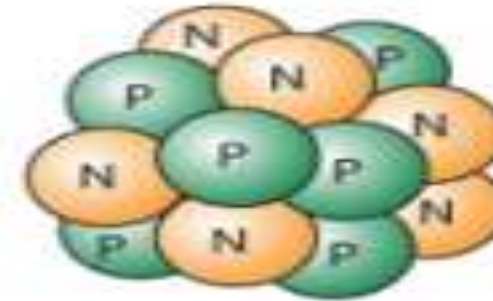
How To Draw Bohr Models – Jot This Down!

- One way to represent Atoms of an Element is to draw a “Bohr Model” for the Element!
- To draw a Bohr Model for the first 18 or so Elements follow these simple steps!
 1. First, using the Periodic Table, write down the number of Protons, Neutrons, and Electrons in the Atom!
 2. Then, draw circles with p or + inside for the Protons and n or 0 inside for the Neutrons found together in the Nucleus!
 3. Next, count down to the Period (ROW) the Element is found in and DRAW Rings/Orbits around the Nucleus equal to that number!
 4. Finally, using the 2-8-8 RULE add in the number of Electrons to finish your Bohr Model!

How do we find the number of protons, neutrons, and electrons are in an element by using the periodic table?



CARBON



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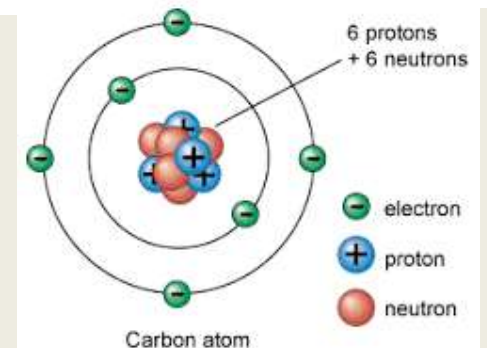
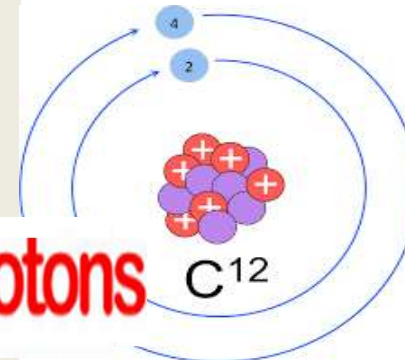
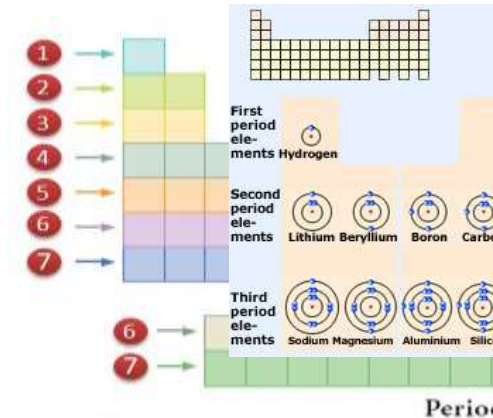
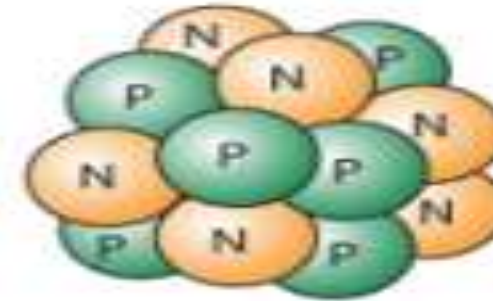


Atomic Number
(how many protons are in an atom) Protons = Electrons

Element Symbol

Atomic Mass (Number of protons and neutrons)

CARBON



$$\# \text{ neutrons} = \text{mass number} - \# \text{ protons}$$

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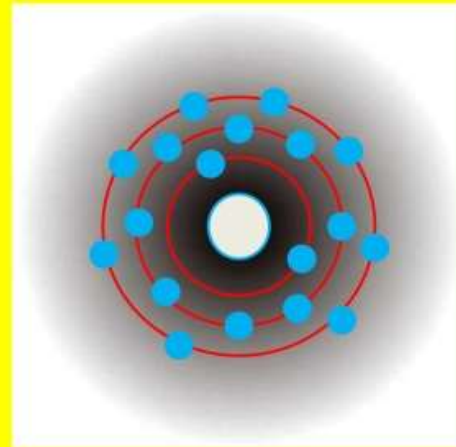
What is the 2-8-8 Rule?

2-8-8 Rule

Electrons orbit the nucleus in energy levels within the electron cloud

Da Rules

- The first energy level can contain 2 electrons.
- The second and third energy level can contain 8 electrons.



How To Draw Bohr Models – Jot This Down!

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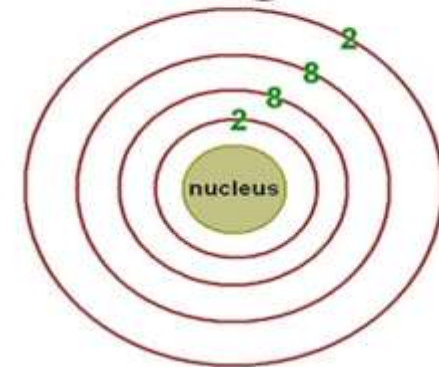
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Electrons orbit the nucleus in energy levels within the electron cloud

Da Rules

The “Filling Pattern”



The pattern is 2, 8, 8, 2 for the first four shells.

It is important to realize that this only applies for the first 20 elements.

WEDNESDAY, FEBRUARY 13th

DO NOW

- In your notebooks, to be checked, solve this problem...

There are about 1.5 feet per second in 1 mile per hour. These are units of Wind Speed!

Know:

$$1.5 \text{ fps} \approx 1 \text{ mph}$$

Asked: How many miles per hour are in 33 feet per second?

TODAY'S PLAN

1. Do and review the **DO NOW** and **Qualitative Prompt (QP)**!
 - Today's **QP** = Using your Jot-Down Notes DRAW Bohr Models for the following ISOTOPES; Hydrogen (1P, 3N, 1E), Helium (2P, 1N, 2E), Carbon (6P, 8N, 6E), AND Lithium (3P, 5N, 3E)!
2. Open books, **WORK** on today's **AO**!
3. ***HW** = Draw a Bohr Model for B!

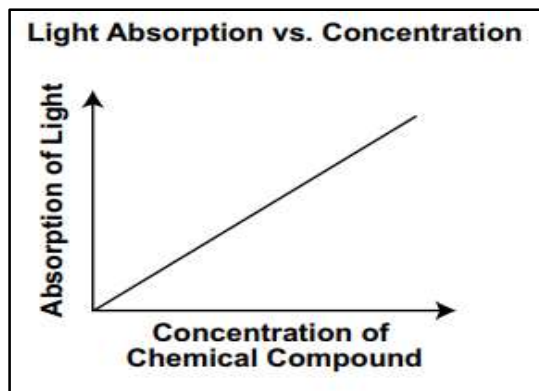
TODAY'S ACADEMIC OBJECTIVE

Today you will **MODEL** the structure of an Atom by **CREATING Bohr...MODELS!**

THURSDAY, FEBRUARY 14th

DO NOW

Know:



Asked: What can be inferred from this graph?

A: Less Light is Absorbed as Chemical Compound Concentration Increases

B: Light is made of particles called Photons

C: More Light is Absorbed as Chemical Compound Concentration Increases

TODAY'S PLAN

1. Do and review the **DO NOW** and **Qualitative Prompt (QP)**!

- Today's **QP** = WRITE out the following Chemical Formulas then COUNT the number of each Element in each and LABEL which ones are Molecules and/or Compounds; H₂, I₂, 3SF₆, 5N₂O!

2. Open books, **WORK** on today's **AO**!

3. ***HW** = Draw a Bohr Model for B!

TODAY'S ACADEMIC OBJECTIVE

Today you will **QUANTIFY** the Elements in a Molecule by **PRACTICING** how to **COUNT** Atoms!

FRIDAY, FEBRUARY 15th

DO NOW

Know: Chemical Elements are **most** likely to react when placed close together and at higher temperatures.

Asked: Which statement gives the **best** conditions for two Elements to react?

A: Na and Cl atoms dissolved in two separate beakers

B: H and O gas atoms pumped into a hot room

C: H and Cl gas near a block of solid H₂O (ice)

TODAY'S PLAN

1. Do and review the **DO NOW** and **Qualitative Prompt (QP)**!

- Today's **QP** = QP BOOK REVIEW = Using Pg. 185-187 of your book
WRITE the GROUP number and the number of VALENCE ELECTRONS in the following Elements; Fr, Be, B, Si, N, O, F, He, AND Xe!


2. Open books, **WORK** on today's **AO**!

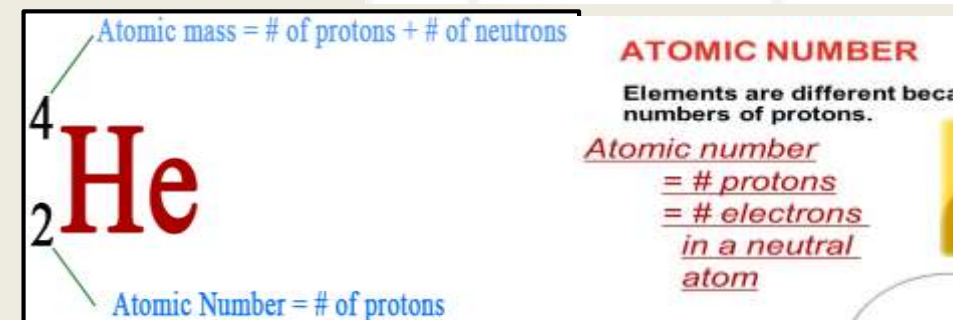
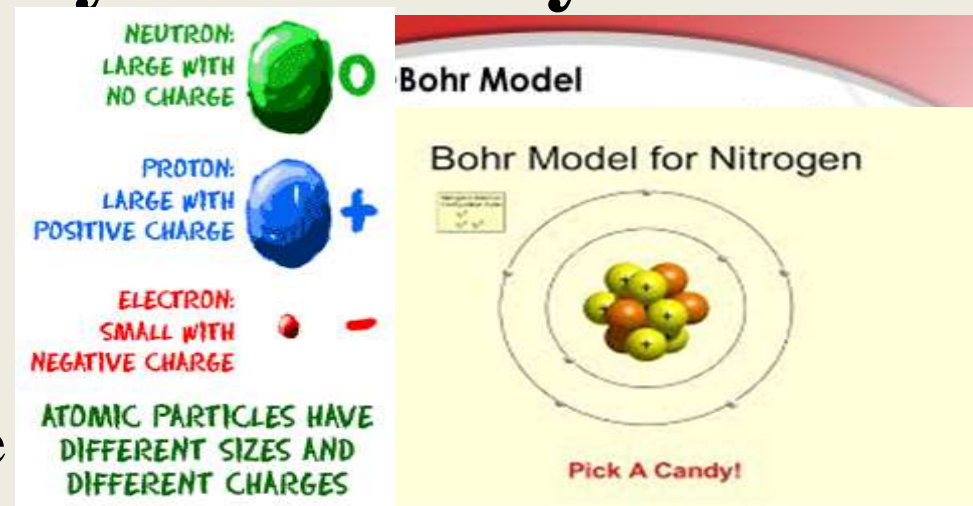
3. ***HW** = Read & Do Pg. 186- 187!

TODAY'S ACADEMIC OBJECTIVE

Today you will **MODEL** the structure of an Atom by **CREATING Bohr...MODELS!**

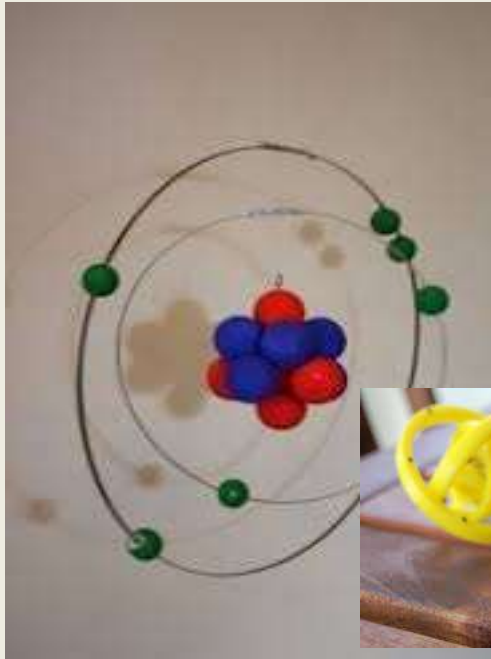
Science Artwork Steps – Candy Chemistry

1. First, in your Science Notebooks JOT DOWN what a “Bohr Model” is/how to draw one! (I’ll need a volunteer to draw one or two on the board for us as well 😊) 
2. Next, pick one of the 3rd Period Elements from the Periodic Table and use your table to WRITE DOWN the number of Protons, Neutrons, AND Electrons it has!
3. Then, on a piece of construction paper DRAW, COLOR, and LABEL a “Bohr Model” for the Atom showing the correct NUMBERS and LOCATIONS of Protons and Neutrons in the Nucleus being ORBITED by Electrons!
4. Now, COLOR IN each Subatomic Particle with a DIFFERENT color!
5. Finally, use tape/glue and a “candy-like” object, such as CANDY, Cereal, Pieces of Paper, Bolts, etc. to take Bohr Model from 2-Dimensions into the 3-D!



Science Artwork – Future Notice!

- NOTE! Upon finishing your Science Artwork BOHR MODEL, you will have the OPTIONAL OPTION to earn a little **BLUE** if you turn your BOHR MODEL COMPLETELY 3-D!



Science Artwork – HW Problems and Questions

