Physics 112

Friday, September 14/18

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*Bus Evacuation - Sept. 25/18, Period 2 (10:00 to 10:15 -> Bus #5)

1. Summative Assessment - Basic Knowledge/Skills
   - Topics - See Next Page
   - Date: Tuesday, Sept. 18/18

2. Return:
   FA - Metric Conversions and Rearranging Equations

3. FA - Percent Error, SDs and Rules, Conversions and Equations
   The answer key is posted as an attachment following the Plan of the Day on the school website on Teacher Pages.

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4. Unit 1 - Kinematics

5. Learning Targets - Unit 1

6. Unit 1 - Section 1: Vector Analysis

7. Mechanics

8. Types of Physical Quantities

9. Vectors: Direction, Notation & Representation

10. Physical Quantities to Know

11. Adding Vectors Graphically: 2 Methods

12. Worksheet: Order of Vector Addition

Topics - SA: Basics Knowledge/Skills

1. physics - definition

2. metrology - definition

3. physical quantity - definition

4. measurements - two parts

5. scientific notation

6. accuracy/precision - definitions, interpret scenario

7. percent error calculation

8. significant digits - in a given measurement
   - Precision (+ and -) & Certainty (x and ÷) Rules

9. SI system - quantities and 7 base units (names/symbols)
   - derived units

10. SI prefixes - names, symbols and powers of ten

11. metric conversions - 1 step
    - 2 steps
    - m/s ⟷ km/h

12. rearranging equations

Physics 112

FA – Percent Error, SDs and Rules, Conversions and Equations

Name - _____

1. A student measured the specific heat of water to be 4.39 J/g°C. The literature value of the specific heat of water is 4.18 J/g°C. What was the student's percent error?
   (The specific heat is the amount of heat per unit mass required to raise the temperature by one degree Celsius.)

2. State each answer to the appropriate number of significant digits. (3)

   a) 12.93 g + 17.841 g = _____

   b) 4.56 m x 8.2 m = _____

   c) What rule did you use in (b)? _____

3. Perform the following conversions. In (a) and (b), use conversion factors. Show some work for (c).

   a) Convert 7.18 g to Mg.

   b) Convert 28.9 hs to ds.

   c) Convert 56.9 m/s to km/h.

4. Solve for the indicated variable.
   a) $E_e = \frac{1}{2}kx^2$ [k]

   b) $Ft = 7mv^2 - ds$ [v]

   c) $\frac{e}{x} = \frac{y - r}{f + 2}$ [y]

Physics 122

Friday, September 14/18

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1. Justifications and Learning Categories - Submit
2. Check:
   Worksheet: Force Problems - Type I
3. FA - Force Problem - Type I
4. Static Equilibrium
5. Type II: Suspended Objects - Simple - To Be Continued

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6. Worksheet: Force Problems - Type II (Simple)
7. FA - Force Problem - Type II (Simple)
8. Type II: Suspended Objects - Complex
9. Worksheet: Force Problems - Type II (Complex)

Science 10

Friday, September 14/18

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1. Return Results Monday
   Assignment - What's in a Name?
   - Due: Today, Wednesday, Sept. 12/18
   - 2 Days Late Today

2. SA - Chem #1 -> Date - Tuesday, Sept. 18/18
   Topics - See Next Page

3. Check:
   Review: SA - Chem #1

4. Ions

P5

5. Worksheet: Bohr-Rutherford Diagrams Atoms to Ions
   Period 4 - Try #2 and #3.

P4

6. Worksheet - Chemistry: Ions and Subatomic Particles

7. Naming Monatomic Ions

Topics: SA - Chem #1

1. chemistry
2. matter
3. types of properties: physical and chemical
4. types of changes: physical and chemical
5. atoms -> building blocks of matter
   -> three subatomic particles: p^+, n, e^-
   -> locations of three subatomic particles
   -> electrically neutral: $\#p^+ = \#e^-$
6. element
7. chemical symbols
8. periodic table of the elements
   - periods (rows)
   - groups/families (columns)
   - family and period names
   - location of metals, nonmetals and metalloids
   - characteristics of metals and nonmetals
9. atomic number = number of protons
10. standard atomic notation
11. Bohr-Rutherford Diagrams

Sept. 2018

Science 10

Review for SA: Chem #1

(Chemistry to Bohr-Rutherford Diagrams)

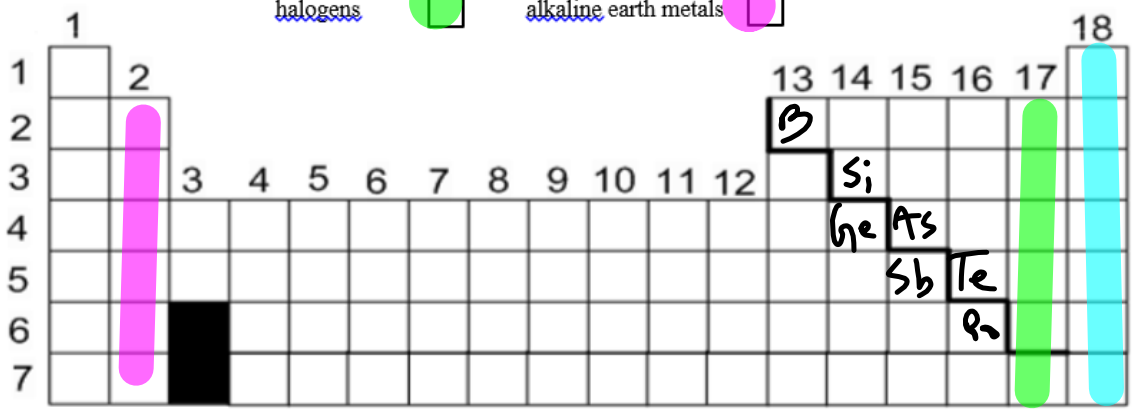
Name - _____

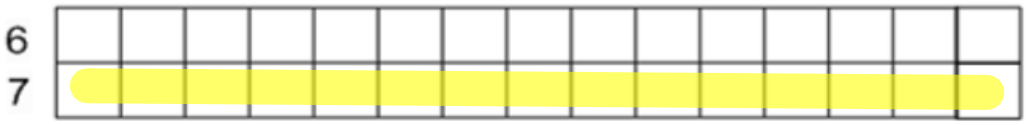
Part 1 – The Periodic Table

1. a) Choose a color for each of the periods and groups below. Identify the colors you've chosen by coloring in the box beside each period/group. Color the appropriate rows and columns on the periodic table to show the location of each period/group.

actinides ☐ noble gases ☐

halogens ☐ alkaline earth metals ☐





b) Identify the metalloids on the periodic table above by writing their chemical symbols in the appropriate boxes.

c) For each element below, indicate whether it is a metal or nonmetal by writing M for metal or NM for nonmetal on the lines provided.

M manganese

NM selenium

M thulium

NM hydrogen

NM iodine

NM helium

d) Below are some characteristics of metals and nonmetals. Print M on the line provided if the characteristic is that of a metal and NM is the characteristic is that of a nonmetal.

brittle NM
malleable M
bad conductor of heat NM
have generally high melting points M
found in all three states NM
can be polished M

Part 2 – Atoms, Subatomic Particles, Standard Atomic Notation and Bohr-Rutherford Diagrams

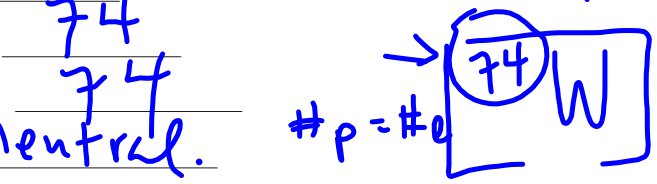
1. Complete the chart below for the three subatomic particles that make up atoms.

Name of Subatomic Particle	Charge of Subatomic Particle	Location of Subatomic Particle
Proton	+ positive	in the nucleus
neutron	neutral	in the nucleus
electron	− negative	in the orbits surrounding the nucleus

2. Find tungsten on your periodic table of elements.

a) What is the atomic number of tungsten? 74
b) How many protons are in an atom of tungsten? 74
c) How many electrons are in an atom of tungsten? 74
d) Are atoms neutral or electrically charged? neutral.

#p = #e



e) If tungsten has a mass number of 184, what is the standard atomic notation for tungsten?

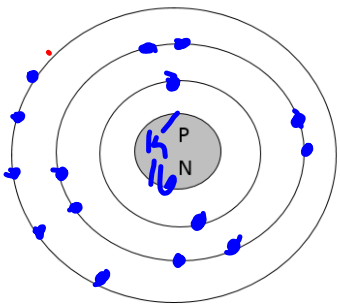
184
74 W

74 p+
74 e−

f) How many neutrons are in an atom of tungsten? 110

g) Draw the Bohr-Rutherford diagram for phosphorous. Phosphorous has a mass number of 31.

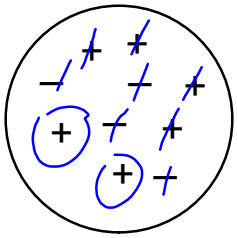
31
− 15
16



Charge

\+ positive

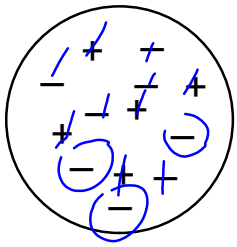
\- negative



+2

2-

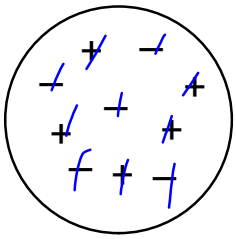
Positively Charged Object



3-

3-

Negatively Charged Object



no charge

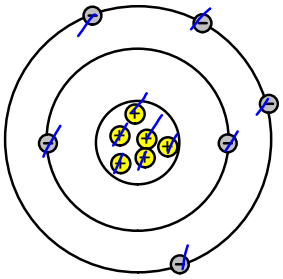
Neutral Object

Carbon Atom

$^{12}_{6}C$

⊕ #P+ = 6

⊖ #E⁻ = 6



neutral atom.

Part 3 - Vocabulary

Match each term on the left with the correct description on the right by placing the letter of the appropriate description on the line provided.

E 1. atoms
I 2. texture
F 3. chemical symbol
G 4. chemistry
J 5. lustrous
C 6. cutting
A 7. rusting
H 8. periods
D 9. elements
B 10. matter

A. a chemical change

B. takes up space and has mass

C. results in a physical change

D. made up of atoms and cannot be chemically broken down into simpler substances

E. the building blocks of matter

F. abbreviation of the name of a chemical

G. the study of matter

H. rows of the periodic table of the elements

I. a physical property of matter

J. shiny

FIGURE IT OUT!

#6

Each block represents a saying or well-known phrase.
Please write your answers on the back of the page.

1 1 MORE MORE MORE MORE MORE MORE MORE MORE MORE MORE MORE	2 OPINION OPINION	3 R Y S	4 The D I A L Hospital
5 DUMP F E E L I N G DUMP	6 BENDING UOY ROF	7 IRIGHTI	8 N
9 MAY AA	10 W W A A L L K K	11 STAYING THE GAME	12 ROLE ROLE
13 AMINPM	14 WEL L	15 LOV	16 PAINS PAINS
17 LEFT OUT FIELD	18 1 1 The 1 1 block 1 1 1 1	19 EZ II	20 WAY YIELD