

## Science 122

Friday, September 30/16

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Orange Shirt Day - Friday, Sept. 30/16



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1. Worksheets (2) - Induced EMF
  2. Worksheet - Transformers
  3. Review Packet
  4. Summative Assessment - Magnetism -> Monday, Oct. 3/16
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## Topics - Magnetism

- type of magnetic materials
- magnetic domains
- types of magnets
- magnetic field lines (N  $\rightarrow$  S)
- RHR/LHR's #1, 2, 3 + Modified Versions, 4
- symbols: in and out of page
- parallel wires
- electric motor: decide direction of armature or I
- force acting on a straight wire
- force acting on a single charged particle
- radius of a single particle in a uniform magnetic field
- velocity selector (perpendicular B and E fields, v)
- mass spectrometer (q to m ratio)
- electromagnetic induction
- Lenz's Law
- EMF
- Ohm's Law
- self-inductance and mutual inductance
- transformers (primary and secondary coils, turns ratio, power)

## Physics 112

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1. Scribblers - Up To Date?
  2. Worksheets -> Velocity-Time Graphs -> Questions?
  3. Summative Assessment - U1: S1 and S2
    - Topics
    - Wednesday, Oct. 5/16
  4. Concept - U1 S3 - Mathematical Analysis
  5. Word Problem Checklist
  6. Uniform Motion - Kinematic Equation
  7. Uniformly Accelerated Motion: Kinematic Equation #1
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8. Uniformly Accelerated Motion: Kinematic Equation #2
  9. Uniformly Accelerated Motion: Kinematic Equation #3
  10. Uniformly Accelerated Motion: Kinematic Equation #4

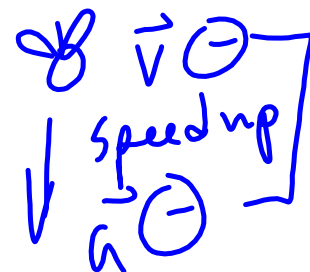
## Topics: Unit 1 - S1 and S2

### Section 1 - Vector Analysis

1. mechanics, kinematics, dynamics *d ef<sup>n</sup>*
2. types of physical quantities:
  - (i) scalar quantity - has magnitude only
    - examples *d, v, t, m*
  - (ii) vector quantity - has magnitude and direction
    - examples  *$\vec{v}$ ,  $\vec{a}$ ,  $\Delta\vec{d}$ ,  $\vec{J}$*
    - conventional directions
    - vector notation
    - graphical representation  $\rightarrow$
3. resultant = vector sum
4. graphical addition of vectors:
  - (i) tip-to-tail method *(Lead-to-tail)*  $7\text{ km}$   
 $5\text{ km}$
  - (ii) parallelogram method
5. range of resultant magnitudes *minR — maxR*
6. calculate a resultant (follow rubric)
7. types of motion:
  - (i) no motion  $180^\circ$   $0^\circ$
  - (ii) uniform motion  *$\vec{v}$  const.*  $2\text{ km}$  —  $12\text{ km}$
  - (iii) uniformly accelerated motion  *$\vec{a}$  const. /  $\vec{v}$  changing "*
8. use directions of velocity and acceleration to describe motion

### Section 2 - Graphical Analysis

1. position-time graphs -> interpret
2. position-time graph -> direction of motion
3. velocity-time graph -> interpret
4. velocity-time graph -> direction of motion
5. velocity-time graph -> calculations



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1. Experiment 5.2 - Friction  
- **Due: Today, Sept. 30/16**
  2. Examples - Static Torque -> To Be Continued
  3. Worksheet - Static Torque #1
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4. Worksheet - Static Torque #2
  5. Experiment 10.2 - Torques (Page 67)
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# Science 10

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1. Questions?

Worksheet - Practice: Binary Covalent Compounds

Worksheet #6

Worksheet - Mixed Ionic/Covalent Compound Naming #1

2. **Test #1 - Chemistry to the End of Compounds - Tuesday, Oct. 4/16**

3. September Progress Reports - Take Home

- Have a Parent/Guardian Sign It

- Return by Tuesday, Oct. 5/16

4. Counting Atoms - To Be Continued

5. Worksheet: Counting Atoms in Compounds

HW - Complete Front Side

6. Chemical Reactions

7. Law of Conservation of Mass

8. Balancing Chemical Equations

9. Worksheet - Balancing Chemical Equations

## Topics

### Test #1 - Chemistry to the End of Compounds

1. chemistry
2. periodic table of the elements - rows -> periods
  - columns -> groups/families
  - family and period names
  - chemical symbols
  - location of metals, nonmetals and metalloids
3. atoms -> building blocks of matter
  - > three subatomic particles:  $p^+$ ,  $n$ ,  $e^-$
  - > locations of three subatomic particles
  - > electrically neutral:  $\#p^+ = \#e^-$
4. atomic number = number of protons
5. characteristics of metals and nonmetals
6. ions - atoms that have gained or lost electrons
  - cations/positive ions/metallic ions
  - anions/negative ions/nonmetallic ions
  - be able to state number of protons, number of electrons and ion charges
7. ionic bond - created by transfer of electrons
8. be able to identify monatomic ions, polyatomic ions and monatomic ions of multivalent metals
9. ionic compounds - electrically neutral
10. be able to write the names of simple binary ionic compounds given their formulas and vice versa
11. be able to write the names of ionic compounds containing polyatomic ions given their formulas and vice versa
12. roman numerals 1-10
13. be able to write the names of ionic compounds containing multivalent metals given their formulas and vice versa
14. be able to write the names of ionic compounds containing multivalent metals and polyatomic ions given their formulas and vice versa
15. covalent bond - created as a result of the sharing of electron pairs
16. molecular compounds = covalent compounds = molecules
17. prefixes 1-10
18. diatomic molecules:  $H_2$ ,  $N_2$ ,  $O_2$ ,  $F_2$ ,  $Cl_2$ ,  $Br_2$ ,  $I_2$
19. special molecules:  $P_4$ ,  $S_8$ , water, ammonia, hydrogen peroxide
20. be able to write the names of binary molecular compounds given their formulas and vice versa
21. identify ionic compounds and molecular compounds