

Name \_\_\_\_\_  
Period \_\_\_\_\_

JMJ

Date \_\_\_\_\_  
Physical Science

### Comp Review Sheet

This review sheet is a guideline to help you study for the comprehensive exam. Please make sure you know all vocabulary words, study your notes, and review your tests as well as trimester exams. This website is also very helpful © <http://www.solpass.org/6-8Science/6-8Science.php>

#### Introduction Chapter

Terms: (define/explain/give examples)

- Scientific tools
- International System of Units
- Placebo effect
- Steps of Scientific inquiry
- What would be the control group in this experiment?

100 students are asked to take a test in a given classroom. The scientists wanted to see if the color of a classroom affects the students test taking ability. 25 students take a test in Room 1, which is white (this is usual for the students). 25 students take a test in Room 2, which is blue. 25 students take a test in Room 3, which is red. 25 students take a test in Room 4, which is purple. The students in Room 1 had an average score of 90%. The students in Room 2 had an average score of 80%. The students in Room 3 had an average score of 65% and the students in Room 4 had an average score of 75%.

- What is the manipulated variable?
- What is the responding variable?
- What might be a State the Problem?
- The students collect the tests and find the average. What two steps of the scientific inquiry does this explain?
- What would be a good statement in the conclusion?

#### 7.1, 7.2, & 8.1

Terms: (define/explain/give examples)

- Alloy
- Surface tension
- Solute
- Solvent
- Amorphous solid
- Crystalline solid

Questions:

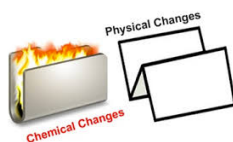
- What is the difference between mixtures and substances?
- Give examples of mixtures and substances.
- List the 4 states of matter: give examples of each and define or give properties of each type
- Using three liquids, rate their viscosity from high to low
- What are physical properties? List two size-dependent and four size-independent properties.

#### 7.3, 7.4, 8.2, & 8.3

Terms: (define/explain/give examples)

- Physical property/change
- Chemical property/change

Questions:



- How does the image to the right explain chemical change/physical change?
- What is Charles' law? Boyle's law? Give an example of each.
- What is the difference between chemical property and chemical change? Know examples!
- What some signs of a chemical change?
- What are some signs of physical change?
- Physical Change Chart! Examples : PE & KE
- What factors increase the rate of reaction?
- What is the difference between evaporation and vaporization?

#### Chapter 9

Terms: (define/explain/give examples):

- Isotopes
- Average atomic mass
- Energy levels
- Proton
- Neutron
- Electron

Questions:

- Create chart of scientists and their discovery/belief and how?
  - Aristotle
  - James Chadwick
  - JJ. Thompson
  - Ernest Rutherford
  - Marie Curie
  - Democritus
  - Neils Bohr
  - Gilbert Lewis
- Alpha, Beta Gamma
  - What does each consist of?
  - What can it penetrate?
  - What is it similar to?
  - What makes them different?
- **BOHR DIAGRAMS, & LEWIS DOT DIAGRAMS**

#### Chapter 10

Terms: (define/explain/give examples):

- Synthetic elements
- Rare earth elements
- Group/period
- Alkali metals: Alkaline Earth metals: Transition metals: Halogens: Noble gases: Chalcogens: Pnictogens: Lanthanides: Actinides

Questions:

- What are some of their characteristics?
- Who established and altered the Periodic Table?
- What are some properties of metals in general? Explain the three types of metals and give a property of each.
- What are the metallic patterns?
- What are some nonmetal properties? Explain the three types of nonmetals and give a property of each.
- What are metalloids? Explain some properties and uses of metalloids.

#### Chapter 11

Terms: (define/explain/give examples):

- Polar
- Covalent

- Ionic
- Metallic

Questions:

- What are each bonds in between?
- What tends to happen in an ionic bond?
- Use your notes from Chapter 11

### Chapter 1

Terms: (define/explain/give examples):

- Position
- Distance
- Displacement
- Acceleration

Questions:

- What are the different types of speed? Be able to determine on a D-T graph
- Calculate speed and acceleration.
- What are the three ways an object can accelerate?
- What is the difference between speed, velocity, and acceleration?
- What is the difference between distance and displacement? Determine these two terms in the picture above.
- Describing an object's position, you must include what three parts?



### Chapter 2

Terms: (define/explain/give examples):

- Inelastic and Elastic collisions
- Contact forces
- Noncontact forces
- Static friction
- Sliding friction
- Fluid friction

Questions:

- What are Newton's 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> law of motion? Give examples for each. Be able to explain it and know examples of each.
- Write a question that establishes a net force of 50 N to the right.
- What creates circular motion? Describe an example of circular motion (include centripetal force, inertia, etc.)
- What is the difference between mass and weight?
- Explain the concept of momentum. What has momentum and what doesn't? Give an example.

### Chapter 3

Terms: (define/explain/give examples):

- All simple machines
- Mechanical advantage
- Input/output arm/distance/force

Questions:

- How do you determine the MA of a pulley system?
- Calculate work and power.
- What are the three ways a machine does work? Explain and give an example.
- Explain the different types of simple machines. Give an example of each.
- CLASS LEVER CHART!

### Chapter 4

Terms: (define/explain/give examples):

- Buoyant force
- Density

Questions:

- State Archimedes', Pascal's, and Bernoulli's principles. Know the formulas related to it.
- Give examples of each of the principles.
- What is drag force? How does it increase?
- Hydraulic lift problem and calculate Pressure
- Atmospheric pressure versus underwater pressure

### Chapter 5

Terms: (define/explain/give examples):

- ALL OF THE ENERGIES! (KE, GPE, EPE, CPE, RE, NE, TE, ME, EE, SE)
- Waste energy

Questions:

- What are the nonrenewable resources?
- Where do the fossil fuels come from?
- What are the renewable resources?
- Identify energy transformations of a light bulb, solar panel, and a cell phone.
- Discuss the steps to an electric power plant, and hydroelectric power plant.
- List differences between nonrenewable energy resources, renewable energy resources, and inexhaustible energy resources.

### Chapter 6

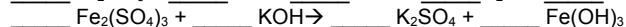
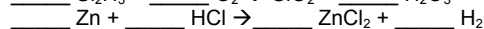
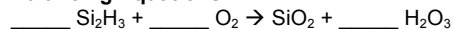
Terms: (define/explain/give examples):

- Temperature
- heat
- Specific heat
- Radiation
- Conduction
- Convection

Questions:

- What is the difference between TE and ME?
- Name the three scales used for temperature.
- What is the difference between thermal insulators and conductors? Also, relate it to specific heat.
- What is thermal contraction and expansion? What happens to density?
- What are examples of radiation, conduction, and convection?

### Balancing Equations:



Other:

- Lab questions
- P= E= N=
- Ions
- Names and symbols of elements
- measurements

Name \_\_\_\_\_

**WRITTEN SECTION (30 POINTS)**

***ONE MANDATORY SECTION (10 POINTS):***

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***TWO GROUPS OF CHOOSE 2 OUT OF 3 SECTIONS (5 PTS PER SECTION):***

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