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Physical Science Semester Review Questions

Name: _____ Hr: _____

Chapter 1-1

1. What is science? **A system of knowledge and the methods used to find that knowledge**

2. What are the branches of natural science? **Physical, Earth and Space, Life**

1.2

1. What are the steps to the scientific method and what is the goal of the scientific method? **Observation, research, hypothesis, testing, data collection, develop a theory**

- **To answer question**

1.3

1. Put 0.000000305 into scientific notation? **3.05×10^{-7}**

2. List the metric prefixes from mega to micro and the meanings of each.

Kilo 1000 Hecto 100 Dekka 10 BASE Deci 0.1 Centi 0.01 milli 0.001

1.4

1. Name 2 ways that scientists organize their data. **Charts and Graphs**

Chapter 2

1. What is a compound? **2 or more elements combined in a fixed composition**

2. Give two examples of substances with high viscosity. **Syrup and Honey**

3. List 5 examples of physical properties. **Viscosity, Conductivity, malleability, hardness, melting point**

4. When does a physical change occur? **When the material changes shape or form but the substance remains the same.**

5. What is the difference between a chemical and physical change? **Chemical changes completely alter the composition, physical changes alter only how it looks**

Chapter 3

1. How can shape and volume be used to classify materials? **Liquid and gas can change shape, only gas can change volume**

2. Give a detailed description of a solid, liquid and a gas. **Solid - definite shape and volume Liquid - no definite shape but definite volume, Gas - no def. shape or volume**

3. Draw a phase change triangle.
SOLID
LIQUID ----- GAS

4. What happens to a substance's temperature/energy during a phase change?
The temperature stays the same, the energy goes into the substance.

Chapter 4

1. What are the 3 subatomic particles? **proton +, Neutron =, electron -**

2. How are atoms of 1 element different from atoms of other elements? **They have a different number of electrons**
3. What is the difference between 2 isotopes of the same element? **They have a different amount of neutrons**
4. What can happen to electrons when atoms gain or lose energy? **They change energy levels**
5. What is the most stable configuration of electrons in an atom? **a full outer shell - 8**

Chapter 5

1. Give three general statements about metal properties. **Conductive, malleable and ductile**
2. When electrons move from a higher energy level to a lower one what happens to an element like neon? **They release energy - neon would release it as light**
3. Name the period that has elements that are the most stable? **8a Noble Gasses**

Chapter 6

1. Calcium, Ca, and Fluorine, F, form a binary ionic compound with a one-to-two ratio of Calcium to Fluoride ions. What is the formula for the compound? What is the name of this compound? **CaF₂ Calcium Difluoride**
2. Fluorine, F, forms a binary ionic compound with lithium, Li. Name the compound: **Lithium Fluoride**
3. The formation of an ionic bond involves the transfer of electrons.

Chapter 11 + 12

1. Which distance can be most accurately measured with a ruler? **book**
2. One kilometer equals 1000 meters. What does the prefix *kilo-* mean? **Thousand**
3. If you start and end in the same location your displacement would be 0.
 4. A constant slope on a distance-time graph indicates constant speed.
 5. The difference between speed and velocity is that velocity indicates the direction of motion and speed does not.
6. A distance-time graph indicates an object moves 20 km in 2 h. The average speed of the object is 10 km/h.
7. Freely falling objects accelerate at 9.8 m/s² because the force of gravity acts on them, what slows falling objects down? **Air resistance**
8. List the 4 types of friction **static, rolling, sliding, and fluid**