Final Exam Review for 7th grade Science

Name_____

People you worked with_____

If you work with a friend please write their names on your answer sheet as well. If I find word for word the same answers you will receive a zero for this grade.

Scientific Method:
Define and/or give one example for the following:
1. Problem

**2. Hypothesis

3. Procedure

**4. Observation

5. Conclusion

6. A Law

7. Theory

**8. Model

**9. Variable

**Independent Variable

**Dependent Variable

**10. Control

**11. Inference

**12. Prediction

13. A soil scientist wanted to determine whether doubling the amount of Nitrogen in soil used to grow green beans would produce plants with higher yields. Identify the independent and dependent variables and name the factors that would need to be controlled in this experiment.

Measurement

1.What do the following prefixes mean?

Milli:

Centi:

Kilo:

2. How many milliliters of water are in a liter of water?

3. How many meters are in 10 kilometers?

4. Name the instrument or technique that measures the following AND name the unit that it is measured in:

What you are measuring	Instrument/technique	unit
Mass		
Weight		
Temperature		

Volume of a cube		
Volume of an irregular solid		
Length		

Rocks

1. Fill in the table below ***Understand the rock cycle diagram

Rock type	**Way it is formed**	**Characteristics**
Igneous		
Metamorphic		
Sedimentary		

2. What do all rocks contain?

**3. What is weathering?

**4. What is erosion?

5. What force causes weathering and erosion?

**6. What is folding? Draw a diagram to show your answer.

**7. What are the layers of the earth and where are they located? (Draw and label)

8. How do scientists know what the layers of earth are like?

9. What is most of the earth's surface covered with?

**10. List the tests used to identify minerals.

**11. Describe the tests for:
hardness:

streak:

cleavage:

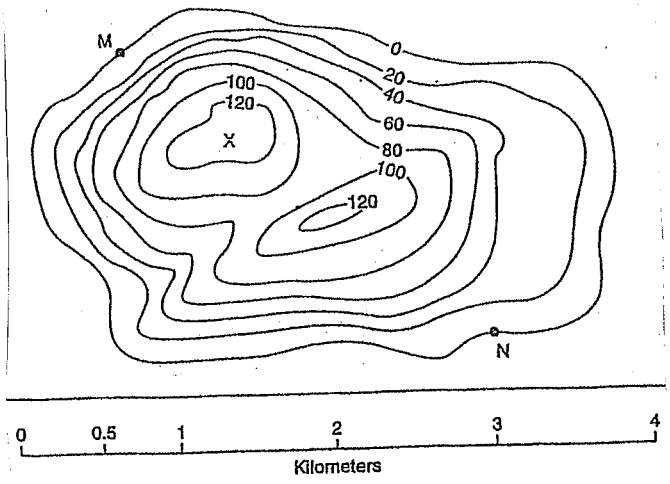
Luster:

Chemical Properties:

13. What are fossils? Which rock type are they found in?

14. Where in the layers of rocks do the older fossils tend to be? (lower or higher)

Maps



1. What is the contour interval?

**2. What is the elevation at point X?

3. What is the distance between M and N?

4. What is a contour line?

5. What does it mean when contour lines are closer together?

**6. What type of landform is represented by this map?

Plate Tectonics

1. What is responsible for the movement of crustal plates?

2. What evidence is there that there was once a super-continent (Pangaea)?

3. What are the three different ways that plates can interact? Describe each way.

1.

2.

3.

**4. What geologic events occur at plate boundaries?

**5. What is faulting and what is it caused by?

**6. Which plate has the most earthquakes and volcanoes around its border ?

Density:

**1. What is the formula for density?

2. What happens to the buoyancy of an object as its density increases?

4. What is the density of water (include units)?

**5. Calculate the densities of the following objects:

Mass (grams)	Volume (ml)	Density g/ml	Float or sink in water?
20	40		
10	2.5		
25	75		
20	4		

**6. If one side of a cube is 3cm and the mass of the cube is mass if 63 grams, what is the density?

**7. If one side of the cube is 5 cm and the mass of the cube is 25 grams, what is the density?

Water Cycle:

**1. Name and EXPLAIN the 5 different parts of the water cycle

1.

2.

3.

4.

5.

2. During evaporation (liquid to a gas) what happens to heat energy (increase or decrease)?

3. What is the definition of hydrosphere?

Air

1. What happens to air pressure as you increase the altitude (increase or decrease)?

Phase Changes:

**1. Label each arrow with the correct phase change

SOLID ⇒ LIQUID ⇒ GAS

SOLID ← LIQUID ← GAS

2. Is heat energy gained (increased) or lost (decreased) during the following phase changes?

Freezing

Melting

Boiling

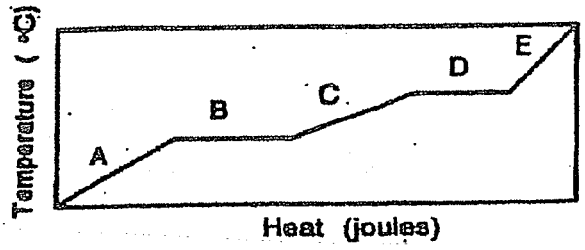
evaporation

condensation

**3. Does the rate of motion of molecules increase or decrease as the temperature increases?

**4. Does the distance between molecules increase or decrease as the temperature increases?

Phase change graph:



*6. What does B represent?

*7. What does D represent?

*8. What is happening to the temperature during B, C and D?

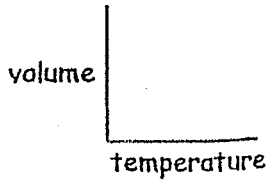
*9. How do you know, from this graph, when a phase change is occurring?

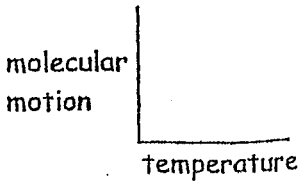
*10. A substance has a freezing point of -25 Celsius and a boiling point of 75 Celsius. What are the temperatures that this substance would be a liquid?

**11. Fill in the chart below:

Phase of Matter	Density	Movement of Molecules	Volume	Shape
Solid				
Liquid				
Gas				

Complete these graphs showing the relationship and describe the relationship formed by the variables





Atoms/Chemical formulas

1. Label the following as either an element or a compound:

Pb

NaCl

HCl

N

KCl

He

CO

2. What is the smallest building block of matter?

***3. Fill in the table :

Subatomic Particle	Masses	Location	Charge
Proton			
Neutron			
Electron			

4. Do like charges attract? Or, do unlike charges attract?

5. What are valence electrons?

**6. For Flourine, what is the:

Atomic number_____ Atomic Mass_____ Number of Protons_____

Number of Neutrons_____Number of Electrons_____Number of Shells_____

Number of Valence electrons_____

**7. For Neon, what is the:

Atomic number_____ Atomic Mass_____ Number of Protons_____

Number of Neutrons_____Number of Electrons_____Number of Shells_____

Number of Valence electrons_____

**9. What are the groups on the periodic table and what do they tell you?

10. What are the periods on the periodic table and what do they tell you?

**11. Where are metals and non-metals located on the periodic table?

12. Where are the noble gases located?

Chemical/Physical Changes

1. During which types of change are chemical bonds broken or formed?

**2. What are examples of chemical changes?

**3. What are examples of physical changes?

**4. How would you separate iron out of a mixture?

**5. Are the following chemical or physical changes?

Dissolving

Burning

Rusting

Freezing

Stretching

6. What is the Law of Conservation of Matter?

Solutions

1. Define Solution:

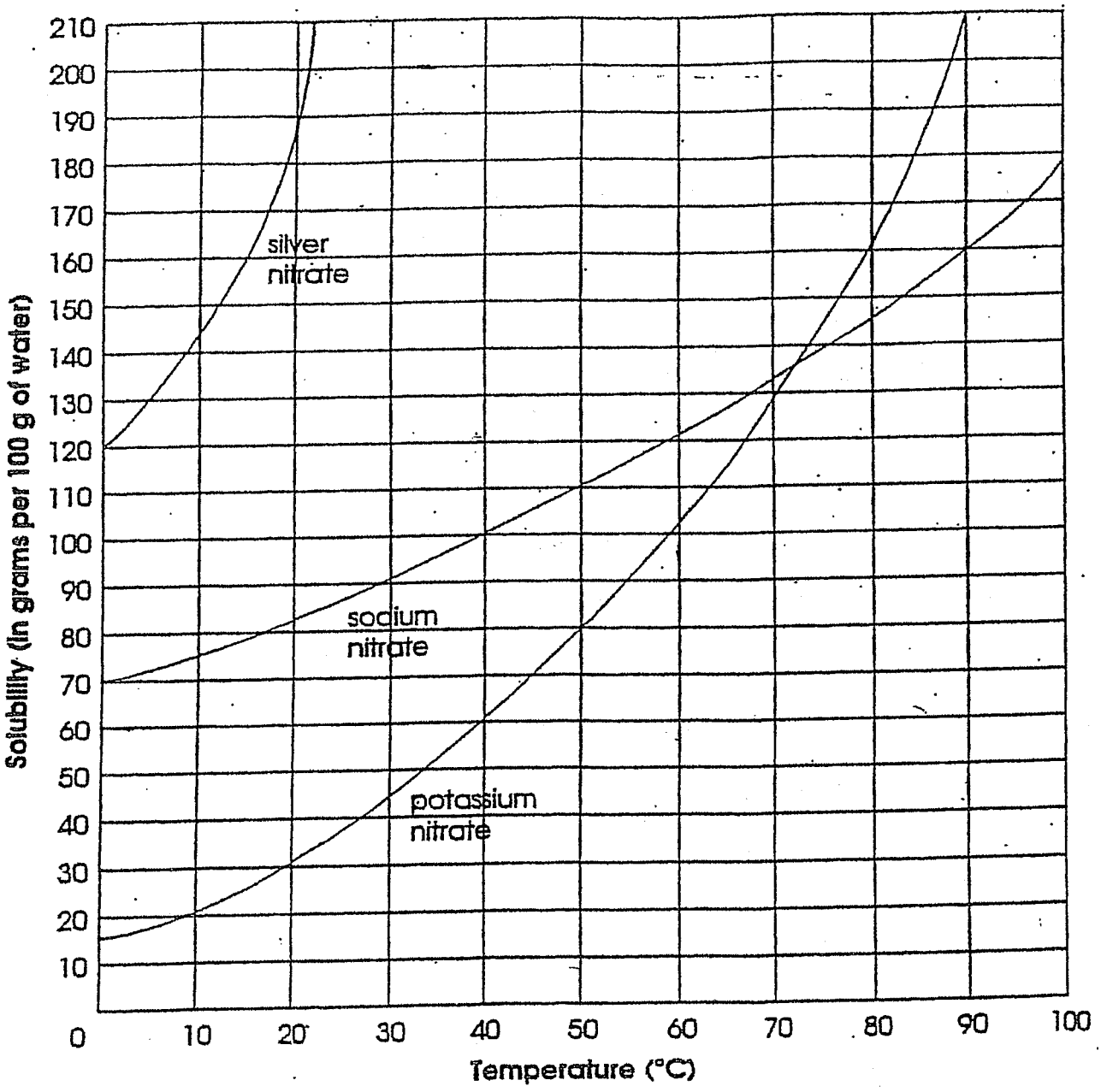
Soluble:

Insoluble:

Solute:

Solvent:

**2. What are 3 ways to increase the rate of dissolving?



**Look at the Solubility Graph

1. How many grams of silver nitrate dissolve at 10 degrees celcius?
2. How many grams of sodium nitrate dissolve at 20 degrees celcius?
3. How many more grams of silver nitrate dissolve at 20 degrees celcius than sodium nitrate?
4. How many more grams of sodium nitrate dissove at 40 degrees celcius than potassium nitrate?
5. Which substance is most soluble at 0 degrees celcius?
6. Which substance is the least soluble at 0 degrees celcius?
7. At what temperature will 140 grams of silver nitrate dissolve?
8. At what temperature will 90 grams of sodium nitrate dissolve?

Acids/Bases

**1. What is the pH of acids, neutral and bases?

**2. Give examples of acids

**3. Give examples of bases

Physics

1.What happens to the force of attraction between objects as you increase the distance between the objects (increase or decrease)?

2. Describe the six different types of simple machines.

1.

2.

3.

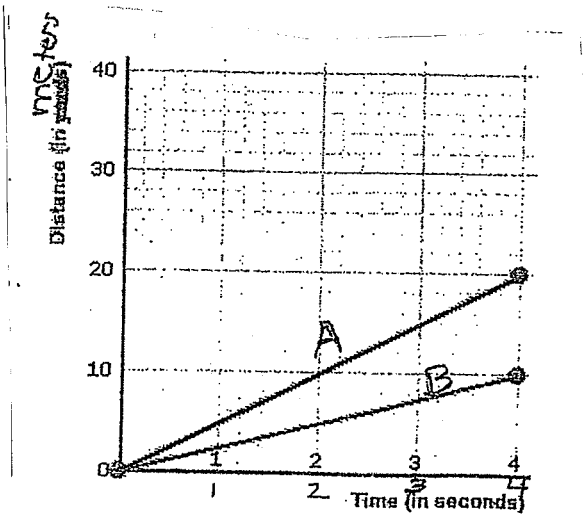
4.

5.

6.

2. What is friction and what are ways that in can be decreased?

3.



Which is slower A or B?

What is the average speed of A?

What is the average speed of B?

What would the graph look like if it was slowing down?

4. If you press against a wall with a force of 10 N and it does not move, how much force from the wall is pressing back at you?

5. What is the difference between balanced and unbalanced forces?

6. What is the difference between mass and weight?

7. What is the formula for speed?

8. What is the formula for acceleration?

9. If an ant starts walking at 5 mm/s and then speeds up to 10 mm/s in 3 seconds, what is its rate of acceleration?

10. A car accelerates at 5 meters/S^2 when a 20 Newton force is applied to it. Which force would cause this object to accelerate at 10 meters/S^2?

11. A mom is pushing a baby in a stroller in which situation does the stroller experience the greatest acceleration?

1) The mom pushes with a force of 10 Newtons and the baby weighs 10 Kg.
2) The mom pushes with a force of 10 Newtons and the baby weighs 8 Kg.
3) The mom pushes with a force of 20 Newtons and the baby weighs 10 Kg.
4) The mom pushes with a force of 20 Newtons and the baby weighs 8 Kg.

12. What two things increase gravitational pull?

13.All things theoretically should fall to earth with the same speed, but _____slows some objects.