Material World Review for Grade 8

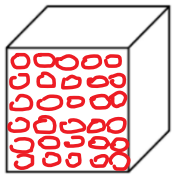
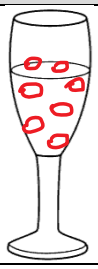
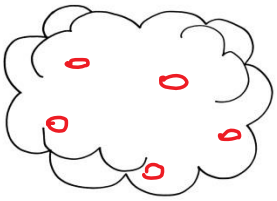
Name: _____

Practice Questions

1. Place check marks to indicate whether the following are characteristic properties or not.

	Characteristic Property	Non-Characteristic Property
Mass		√
Boiling Point	√	
Colour		√
Temperature		√
Density	√	

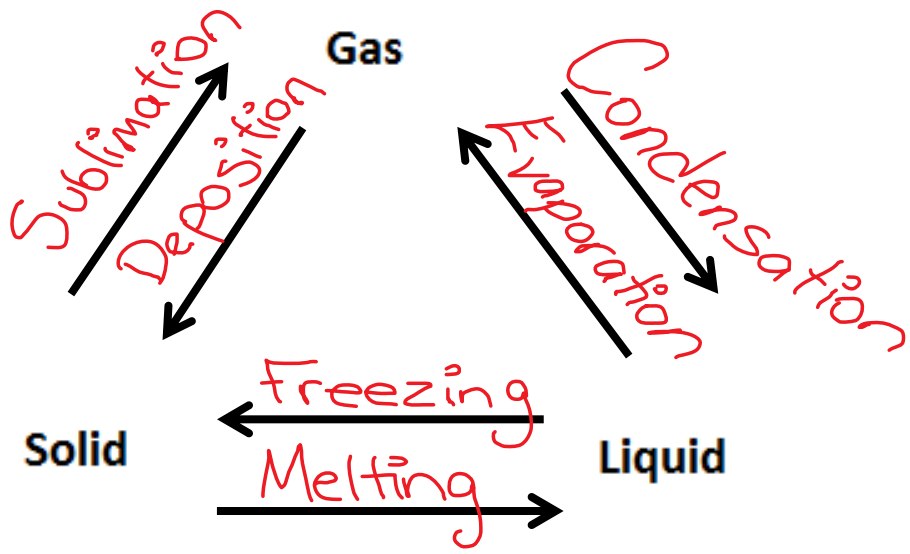
2. Fill in the following table regarding the states of matter.

	Solid	**Liquid**	**Gas**
Draw the particle model			
Distance between particles	Very Close Together	Somewhat far apart	Very Far Apart
Movement of particles	Very little movement	Some movement	A lot of movement
Examples	Desk, Apple, Paper	Milk, Water, Juice	Steam, Helium, Carbon Dioxide

3. What happens to the particles as temperature increases? They move further apart and move more.

4. What happens to the particles as temperature decreases? They become closer together and move less.

5. Fill in the phase changes of matter in the table below:



6. Check whether the following are acidic, basic or neutral pH values

	Acidic	Basic	Neutral
pH of 14		√	
pH of 7			√
pH of 1.1	√		
pH of 6.8	√		
pH of 13		√	
pH of 7.1		√	

7. Hand soap has a pH of 10 while household bleach has a pH of 12. Which substance do you think is more basic? Bleach Why? The most basic substances have a pH level of 14, while neutral substances have a pH of 7. The closer a substance is to the most basic (a pH of 14) the more basic it is. Bleach is closer to 14 than hand soap is and that's why its more basic.

8. You test a solution with litmus paper. The blue litmus paper turns red and the red litmus paper doesn't change colour. Is it an acid, a base or a neutral solution? Acid

9. You test a solution with litmus paper. The red litmus paper stays red and the blue litmus paper doesn't change colour. Is it an acid, a base or a neutral solution? Neutral

10. What is the benefit of using universal indicator paper over litmus paper? Universal indicator paper is more precise, it gives you the exact pH level of a substance. Litmus paper can tell you whether a substance is an acid, base or neutral but it doesn't give you the exact pH level.

11. What are some differences between a physical change and a chemical change?

During a physical change, the substance does not change what it is. For example, when you chop wood you still have wood afterwards. During a chemical change, the substance does change and it has new properties. For example, when you burn wood, you have ash afterwards.

12. Indicate whether the following are physical or chemical change?

	Physical Change	Chemical Change
Snapping a pencil in two	√	
Frying an egg		√
Fireworks exploding		√
Burning wood		√
Getting a haircut	√	

13. What is the difference between a pure substance and a mixture? Provide an example of each.

A pure substance is only made up of on type of particle. Different elements, (H, O, Li) are all examples of pure substances. A mixture is made up of at least two different types of particles. When you mix different ingredients together, such as vegetables, broth, noodles and chicken for a soup you have a mixture.

14. What is the difference between a homogenous mixtures and a heterogeneous mixture? Provide an example of each.

In a homogenous mixture, the different particles cannot be seen, for example in a glass of chocolate milk. In a heterogenous mixture, the different particles can be seen, for example a toonie.

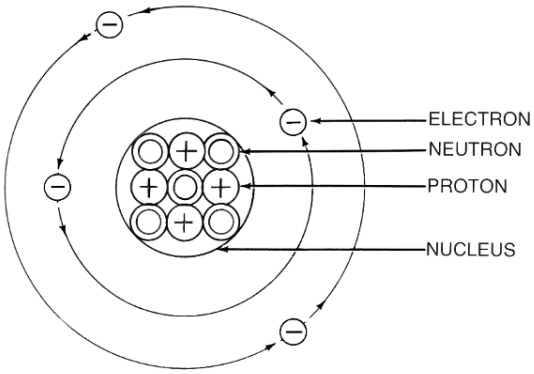
15. You have a beaker with a sand-water solution in it. Describe how you could separate the sand from the water.

First with sedimentation; the sand will separate from the water and deposit at the bottom of the container.
Next with decantation; pouring the layer of water into another container. Lastly with filtration, the water can be poured through filter paper and any last traces of sand would be collected on the filter paper.

16. You have a beaker with a salt-water solution in it. Describe how you could separate the sand from the water.

Through distillation; the salt-water solution would be boiled and at 100°C the water would turn to steam and pass through a tube called a condenser. The steam would return to its liquid state once it cooled down. The salt would remain at the bottom of the container.

17. Draw an atom below and label the parts:



18. What's the difference between an atom and a molecule? Provide an example of each?

An atom is the basic unit of matter while a moleculeis a group of two or more atoms that have been chemically bonded together. An example of an atom is Helium (H), or Oxygen (O). An example of a molecule is Water (H_2O) or Salt (NaCl).

19. What is the periodic table?

The periodic table is a structured classification of elements.