Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Seventh Grade Science**

**Semester 1 Midterm Study guide**

Define the following terms in your own words, using your notes:

1. Photosynthesis
2. Conservation of mass
3. Periodic Table
4. Molecule
5. Atom
6. Chemical properties
7. Physical properties
8. Matter
9. Density
10. Volume
11. Mass
12. Draw a picture of the mixture described below.

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* 1. Substances A, B, C, and D are all liquids.
	2. Substance A is red and is least dense
	3. Substance B is blue and is most dense
	4. Substance C is white and is more dense than Substance D
	5. Substance D is yellow
1. Why might a solid sink in water?
2. How does separation of a mixture using a metal screen work?
3. Find the density of these 3 objects
	1. A piece of wood with a mass of 18 grams and a volume of 30 ml
	2. A chunk of metal with a mass of 55 grams and a volume of 11 ml
	3. An unknown solid with a mass of 23 grams and a volume of 39 ml
4. If the density of water is about 1 g/ml, would any of the substances from question 15 float? Which one/ones and prove it.
5. What are the three particles that make up an atom?
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Where in the atom is each particle be found (use scientific vocabulary)?
7. What charge does each particle have?
8. What does an element’s atomic number tell us?
9. What does the atomic mass (mass number) of an element tell?
10. What do we call the groupings of elements arranged by similar characteristics in vertical columns (up and down)?
11. What do the lines in this model represent?

**H-O-H**

1. Draw a model of a compound you are familiar within the box to the right, and then answer the following questions.

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* 1. What compound did you draw?
	2. How many total atoms are in your molecule?
	3. What elements and how many atoms of each are in your molecule?
	4. Write the chemical formula (remember element symbols are either a capital letter or a capital and a lower case ex. **C** for Carbon or **Fl** for Fluorine).
1. What are the differences between heterogeneous and homogeneous mixtures?
2. Can you see the individual parts of a homogeneous mixture? A homogeneous mixture?
3. Which (heterogeneous or homogeneous mixture) is easier to separate into its original substances?
4. What three things do plants need to perform photosynthesis?
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Explain why humans need photosynthesis to survive.
6. What are the differences between a chemical change and a physical change?
7. List 5 signs a chemical change took place and 5 signs a physical change took place.

 Chemical Physical

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1. Make a Tree map of the properties of solids, liquids and gasses.

 States of Matter

*Solids*  *Liquids*  *Gases*