**Atoms and Molecules Review**

**Study assignments # \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to prepare for the M1-M5 Test on Friday!!!!!**

|  |  |  |  |
| --- | --- | --- | --- |
| M1 | I can compare the size of atoms to other objects. | \_\_\_\_ Yes | \_\_\_\_ No |

1. What is the smallest unit of matter that has it’s own recognizable identity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Why is it difficult to draw an atom? Explain

3. List 4 items larger than an atom and 4 items smaller than an atom.

|  |  |
| --- | --- |
| **Smaller** | **Larger** |
|  |  |
|  |  |
|  |  |
|  |  |

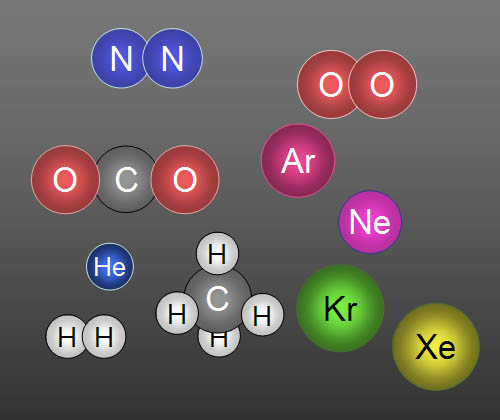
4. Draw an atom. What are some limitations of the atomic model? (In other words, what are two things that are wrong with your drawing when compared with a real atom?)

|  |  |  |  |
| --- | --- | --- | --- |
| M2 | I can explain the differences between atoms and molecules (e.g. atoms combine to make molecules). | \_\_\_\_ Yes | \_\_\_\_ No |

5. Multiple atoms being held together by a bond is called a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. Which one of these is an atom? Which is a molecule? How do you know?

7. What is a lump of pure gold (Au) made out of? (Atoms or molecules)



8. What is the compound NaCl made out of? (Atoms or molecules)

9. In the image to the right, put a **SQUARE** around the atoms and an **OVAL** around the molecules.

|  |  |  |  |
| --- | --- | --- | --- |
| M3 | I can diagram the arrangement of particles in the physical states of matter. (i.e. solids, liquids, and gases). | \_\_\_\_ Yes | \_\_\_\_ No |

10. Fill in the blanks with the word definite (it stays the same) or indefinite (it changes).

A. Solids have a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_shape and a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_volume.

B. Liquids have a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_shape and a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_volume.

C. Gasess have a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_shape and a(n)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_volume.

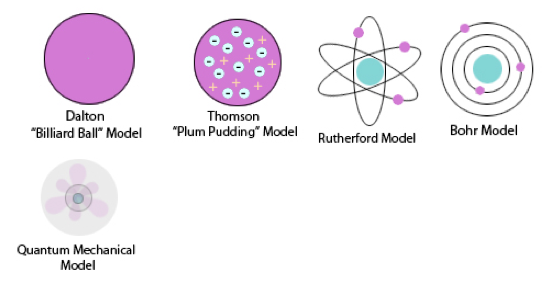
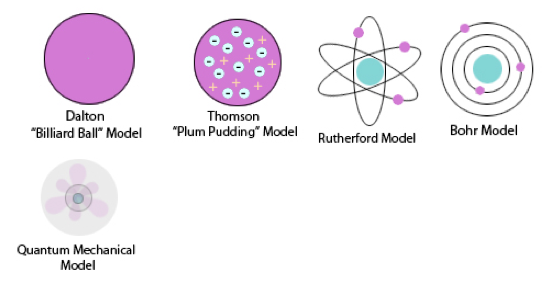
9. Draw AND describe the particles in the following states of matter.

Liquid

Solid

Gas

|  |  |  |  |
| --- | --- | --- | --- |
| **M4** | I can explain that atomic models are not perfect, but can help us learn about atoms and their characteristics. | \_\_\_\_\_\_ Yes | \_\_\_\_\_\_ No |



10. List one way each of the atomic models above is accurate and one way it is inaccurate.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Accurate: | Accurate: | Accurate: | Accurate: | Accurate: |
| Inaccurate: | Inaccurate: | Inaccurate: | Inaccurate: | Inaccurate: |

11. Why do we use models to represent the atom?

12. Can we see atoms? Explain.

|  |  |  |  |
| --- | --- | --- | --- |
| **M5** | I can provide examples of how the atomic model has changed through the years because we have learned more about the atom. | \_\_\_\_\_\_ Yes | \_\_\_\_\_\_ No |

13. In what year did Democritus first begin his theory about atoms? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. Since then, how long has it taken scientists to figure out the structure of the atom? Explain.

15. Name 3 other scientists that helped in the discovery of the atom and its subatomic particles and describe what they discovered.

|  |  |
| --- | --- |
| **Name:** | **What they discovered.** |
| A. |  |
| B. |  |
| C. |  |

16. What does “atomos” mean? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. Draw and label the parts of a Neon atom. (Make sure you have all of the subatomic particles)

P =

e =

N =

18. Draw a picture comparing the size of the nucleus to the whole atom. (Think of the example we used when we went outside.)

**VOCABULARY REVIEW:**

**Go to the website---** [**http://tinyurl.com/qco33jy**](http://tinyurl.com/qco33jy)

**(Also on the class weebly** [**http://yostscience.weebly.com/vocabulary-review.html**](http://yostscience.weebly.com/vocabulary-review.html) **)**

Fill in the chart. Put the definitions in your own words.

|  |  |
| --- | --- |
| **Word:** | **Definition:** |
| 1 | The smallest particle of an element that retains its chemical properties (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). |
| 2  Molecule |  |
| 3 | A substance consisting of atoms which all have the same number of \_\_\_\_\_\_\_\_\_\_\_\_\_ - i.e. the same \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 4  A\_\_\_\_\_\_\_\_\_\_\_  T\_\_\_\_\_\_\_\_\_\_\_ | **1.** All substances are made of \_\_\_\_\_\_\_\_\_\_\_\_. Atoms are the smallest particles of matter. They cannot be divided into smaller particles. They also cannot be created or destroyed. **2.** All atoms of the same element are alike and have the same mass. Atoms of different elements are different and have different masses. **3.** Atoms join together to form compounds/molecules. A given compound always consists of the same kinds of atoms in the same ratio. |
| 5  P\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | A minute (very small) portion of matter |
| 6 | Anything that takes up s\_\_\_\_\_\_\_\_\_ and has v\_\_\_\_\_\_\_\_\_\_. |
| 7  S\_\_\_\_\_\_\_\_\_\_ | Definite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and definite \_\_\_\_\_\_\_\_\_\_\_\_\_\_. Particles \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in place. |
| 8 | Definite volume, variable (changing) shape. Particles can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ past each other. |
| 9  Gas | No definite\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, no definite \_\_\_\_\_\_\_\_\_\_\_\_. Particle are spread out. |
| 10 | a three-dimensional \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a person or thing or of a proposed structure, typically on a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ scale than the original. |

**\*\*Bonus: On a computer at home tonight (or at the school or library), play “Scatter” at the same website above. Write down your best time here: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**