**GPS – Properties and Atoms Intro Notes**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_

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| I can… |
| *Define the parts of an atom.**Distinguish between properties of a substance.* |

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| Notes |
| ***Bellwork***: Write down three examples of any **elements** you remember. |
| 1. ***Elements***
* Basic building blocks of \_\_\_\_\_\_\_\_\_\_\_\_\_.
* Combine to form all \_\_\_\_\_\_\_\_\_\_\_\_ of matter.
* \_\_\_\_\_\_\_\_\_\_\_\_ be broken into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* More than \_\_\_\_\_\_\_\_\_\_\_\_ elements.
* Most are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
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| 1. ***Physical properties of metals***
* Conduct \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Shiny (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
* Bendable (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
 |
| 1. Fill in the chart below.
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| 1. ***Atom***
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of an element that still has the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of that element.

atom |
| 1. ***Compound***
* Made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of elements.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of compounds often \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the properties of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that make them up.

* Ex: C6H12O6 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (sugar)
* 6 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms
* 12 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms
* 6 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms
 |
| 1. ***Atomic Theory – The beginning***

Democritus believed that the tiniest particle was the atom, which was the smallest thing that could \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. He also thought that atoms were made of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that formed into different shapes and sizes. |
| 1. ***John Dalton’s Atomic Theory***

Based on scientific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, John Dalton published a theory in 1803. His theory states these ideas:* All substances are made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Atoms are small particles that cannot be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Atoms of the same element are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. and the atoms of different elements are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Atoms join with other atoms to make \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
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| 1. ***Disagreeing with Dalton***

As scientists were able to gather new data, more discoveries about the atom showed some mistakes with Dalton’s theory.J. J. Thompson discovered with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that atoms contained \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-charged particles called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. He came up with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model. |
| 1. ***Rutherford’s Atomic Discoveries***

 Later, one of Thompson’s students named Ernest Rutherford discovered the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-charged particles in the center of the atom. |
| 1. ***Bohr’s Model and Modern Theory***

 With more experiments and evidence, Niels Bohr developed his model named after himself, called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model.This model represents a small, positively-charged \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ surrounded by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that travel in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ around the nucleus.Modern Theory developed by scientists, especially Schrodinger and Heisenberg, states that electrons are found in probable \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

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| ***Atom Building Pre-Lab*** |
| 1. Sketch an atom with 2 neutrons, 2 protons, and 2 electrons. Label the charges of each particle also.
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| 1. Pick between Democritus model, Thompson’s model, and the modern Bohr model of the atom. Write your choice below.
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| 1. You will build an atom tomorrow. Sketch and describe your materials and procedure for building the model.

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