

Matter Study Guide

1. Matching

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| _____ Atom | A. when a solid turns to a liquid |
| _____ Proton | B. subatomic particle with a negative (-) charge |
| _____ Nucleus | C. substance changes from one state to another |
| _____ Neutron | D. doesn't conduct electricity, not shiny |
| _____ Electron | E. fourth state of matter |
| _____ Atomic # | F. temp at which a substance becomes a gas |
| _____ Element | G. conducts heat and electricity well |
| _____ Metal | H. smallest unit of element that retains properties of the element |
| _____ Property | I. subatomic particle with no electric charge |
| _____ Periodic table | J. the number of protons in an atom |
| _____ Compound | K. center of an atom, contains protons |
| _____ Melting Point | L. amount of "stuff" in a given volume |
| _____ Boiling Point | M. all the elements arranged in order by atomic # |
| _____ Plasma | N. substance made up of two or more elements |
| _____ Phase Change | O. quality or trait that identifies a substance |
| _____ Density | P. contains only one kind of atom |
| _____ Nonmetal | Q. subatomic particle with positive (+) charge |

2. Draw a model of an atom showing where the following parts are: Nucleus, protons, neutrons, electrons.

3. Pure mercury contains only _____ atoms, whereas other elements such as sodium and chlorine combine to form a _____ called salt.

4. Each element contains a different number of _____ in its _____, which makes each element different from one another. This number represents the element's _____.

5. Elements with low _____ are the most _____ elements in the universe.

6. What is the most common element in the Earth's crust and what does it often combine with?

7. Name the three main states of matter discussed in class and show the spacing of their atoms:

State			
Spacing of Atoms			

8. Atoms of elements, molecules and compounds can exist in each _____.

9. Water turns from a solid to a liquid at _____ degrees F. This is called the _____.

10. Freshwater boils at _____ degrees and turns into a _____. This is called a _____.

11. Some substances can go from a gas phase without first becoming a liquid. This process is called _____.
12. Where do we see example of the "fourth" state of matter, _____?
13. Any substances may be identified by its _____ or _____ properties.
14. What happens to the properties of a substance when the volume of that substance changes?
15. What is the difference between an element, compound and a mixture?
16. Every substance has two types of properties that help identify it:
- | | | |
|------------------|--|--|
| Type of Property | | |
| Examples | | |
17. Density = _____ / _____
18. As the volume of a substance increases, it's _____ increases, but it's _____ ALWAYS stays the same.

19. **EXPLAIN** how you could use properties such as density, pH, boiling point and melting point to help identify an unknown substance:
20. What determines whether a substance will undergo a phase change?
21. What is the difference between a physical and chemical change. Give an example of each:
22. State the "Law of Conservation of Matter" and what it is. Make sure you give an example.