Name Key Date Hour

CHEMISTRY STUDY GUIDE

1. The smallest particle from which matter is made is an atom.

2. The most reactive metals are found in which family on the Periodic Table?

   Alkali Metals (group 1)

   Describe where they are located on the Periodic Table.

   on the left

   The most non-reactive elements are found in which family on the Periodic Table?

   Noble Gases (group 18)

   Describe where they are located on the Periodic Table.

   on the right

3. The elements in a group have similar properties.

4. Knowing an element's location in the Periodic Table will help you predict its properties.

5. Dmitri Mendeleev created the first periodic table by arranging the elements in order of increasing atomic mass.

6. The atomic number of an element is based on how many protons are in its nucleus.

7. The chemical reactivity of metals tends to decrease from left to right across the periodic table.

8. Each element is given a specific chemical symbol that usually consists of one or two letters.

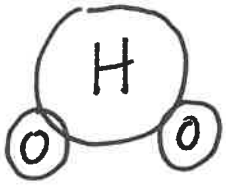
9. What is a compound?

   Two or more elements chemically bonded to make a new substance

   An example of a compound is salt, sugar, water

10. The smallest part of a compound is called a molecule.

11. **Draw** and **label** a picture of a water molecule.



H_2O

12. Table salt and sugar are examples of compounds.

13. What is a chemical formula? Give an example.
A way scientists write compounds quickly.
Ex. H_2O, NaCl, CO_2

14. Every form of matter has two kinds of properties chemical and physical properties.

15. What is a physical property? Give 3 examples.
A property that can be observed or measured without destroying the identity of that substance.
Ex. color, smell, boiling point

16. What is a chemical property? Give 3 examples.
A property that describes how a substance reacts with another substance and the original is changed into a new substance with different properties.
Ex. reactivity, flammability, color change

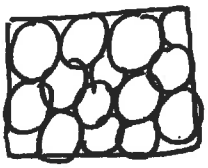
17. What type of evidence will you see if there's been a chemical reaction?
temp change, gas is produced, color change, light or heat produced, precipitate forms

18. The "stuff" that makes up everything on Earth is called matter.

19. How do liquid water, water vapor and ice differ from each other?
They are all different states of matter.

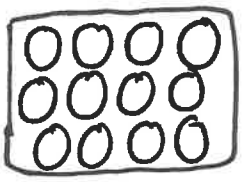
20. Describe and draw how the particles of matter behave in each state of matter:

Solid-



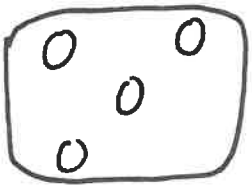
- packed tightly
- only vibrate

Liquid-



- loosely packed
- slide over each other
- take the shape of their container

Gas-



- spread out
- move randomly and quickly
- take the shape of their container

21. What are products?
The ending materials in a chemical reaction

22. What are reactants?
The starting materials in a chemical reaction

23. The fact that matter is neither created nor destroyed in a chemical or physical change is called the Law of Conservation of Mass.

24. Calculate the mass of the following equation: $2H_2 + O_2 \longrightarrow 2H_2O$

Reactant Element	# of Atoms	Mass	Total Mass
H	4	1	4
O	2	16	32
Total Product Mass			36

Product Element	# of Atoms	Mass	Total Mass
H	4	1	4
O	2	16	32
Total Product Mass			36

25. How does question #24 show the Law of Conservation of Mass?

The mass of the reactants is equal to the mass of the products. No matter was created or destroyed, just mixed up and turned into something new.