Name

Chapter 2: Basic Elements to Learn

Since there are 118 elements, knowing all of them would be difficult.

As a beginner, you can start off learning the 12 basic elements in the periodical table. These are the most common elements that you can see every day. You can create endless chemical substances by combining two or more of these elements. Here is the list:

1. **Hydrogen.** This is the first element in the periodic table. It is represented by letter H. This element consists 75% of all the atoms in the universe. It is present in almost every essential object that we need.

2. Oxygen is the eighth element in the periodic table. It is represented by
"O". It is one the most common element that bonds with other elements to form essential compounds. Oxygen is the most essential element every living thing needs.

3. **Helium.** Next to hydrogen, it is the second most abundant gas in the universe. The sun is mostly made up of helium. However, the Earth has limited resources of this gas because it is only formed from decaying actinide metals on the earth's surface. No one has successfully created a compound from helium and other noble gases in its group because of its lightness.

4. **Carbon,** which is represented by "C" in the periodic table, is the sixth element. Like Oxygen and Hydrogen, all living things depend on this element, too. It is essential in the development of our cells, organs, blood, and our entire body. About 20% of our body relies on carbon.

5. Nitrogen is another gas that is essential to almost all matters. 80% of our surface is made of nitrogen atoms. It is both a stable and a reactive element. It is stable when it is alone or in its original gas form. However, it becomes more reactive than oxygen when it is combined with other elements, especially gases.

LIVEWORKSHEETS

6. **Sodium** is a metal. It belongs to the first group and third period. “Na” is its symbol. It is also a stable element, which can be used as is or can be combined with other elements.

7. Chlorine is a halogen. Its symbol is Cl. Chlorine is an isolated gas. It is also a reactive element. It reacts better when added to alkaline metals such as those elements in Groups 1 and 2 in the periodic table.

8. Magnesium is represented by “Mg” in the periodic table. It is an alkaline metal. Though it is a stable element, it is more effective when it bonds with other elements.

9. **Aluminium.** One of the most interesting metals on earth is the Aluminium, which is the 13th element in the periodic table. It is soft and malleable when it is in its pure form. It becomes stable, but still malleable when added to reactive gases or metals, like oxygen and chlorine. It also helps create a stronger metal compound when added to other metals, like iron (Fe).

10. **Sulphur** belongs to the family of oxygen. It is represented by the chemical symbol “S”. It is non-reactive when its temperature is at normal. Like oxygen, it becomes explosive when it is heated along with metallic and other gas elements.

11. **Silicon** is an element that is related and as abundant as carbon.
However, unlike carbon, it is always bonded with other elements. Many people think that it is a metal because of its greyish colour, but it is actually a heavy gas. Rocks and sand are compounds created from silicon. This element is essential in many developments we have today. It is a component of the silicates, which are used in making computer chips. It is also used in making pottery, glass, and concrete.

LIVEWORKSHEETS

12. **Boron** is the only non-metallic member of group 3 in the periodic table. It is represented by chemical symbol “B”. It is also one of the most abundant elements in the Earth’s crust. It is one of the main ingredients for borax.

Experiment 1: Soap Making

You can create soap by combining materials made from these elements.

Materials:
3ml distilled water
1g sodium hydroxide crystals (lye crystals)

10ml olive oil or coconut oil (melted)
Petri dishes
molds
Beaker or large bowl
thermometer

Direction:

1. Place the water in the petri dish. Mix in the sodium hydroxide until dissolve.
The water will become hot as the molecules react with each other. Wait until the lye solution temperature drops to at 40C.

2. Add the solution to the melted oil. Stir and observe how the solution will make the oil thick.

3. When it is thick enough, pour the soap to a petri dish or any mold. You now have a bar of soap. However, you need to wait for 6 weeks before you can use it because the lye is still active and dangerous to your skin.

LIVEWORKSHEETS

My Science Experiment Observation Sheet

Materials Needed:

My Hypothesis:

LIVEWORKSHEETS

What happened?

My Conclusion:

LIVEWORKSHEETS