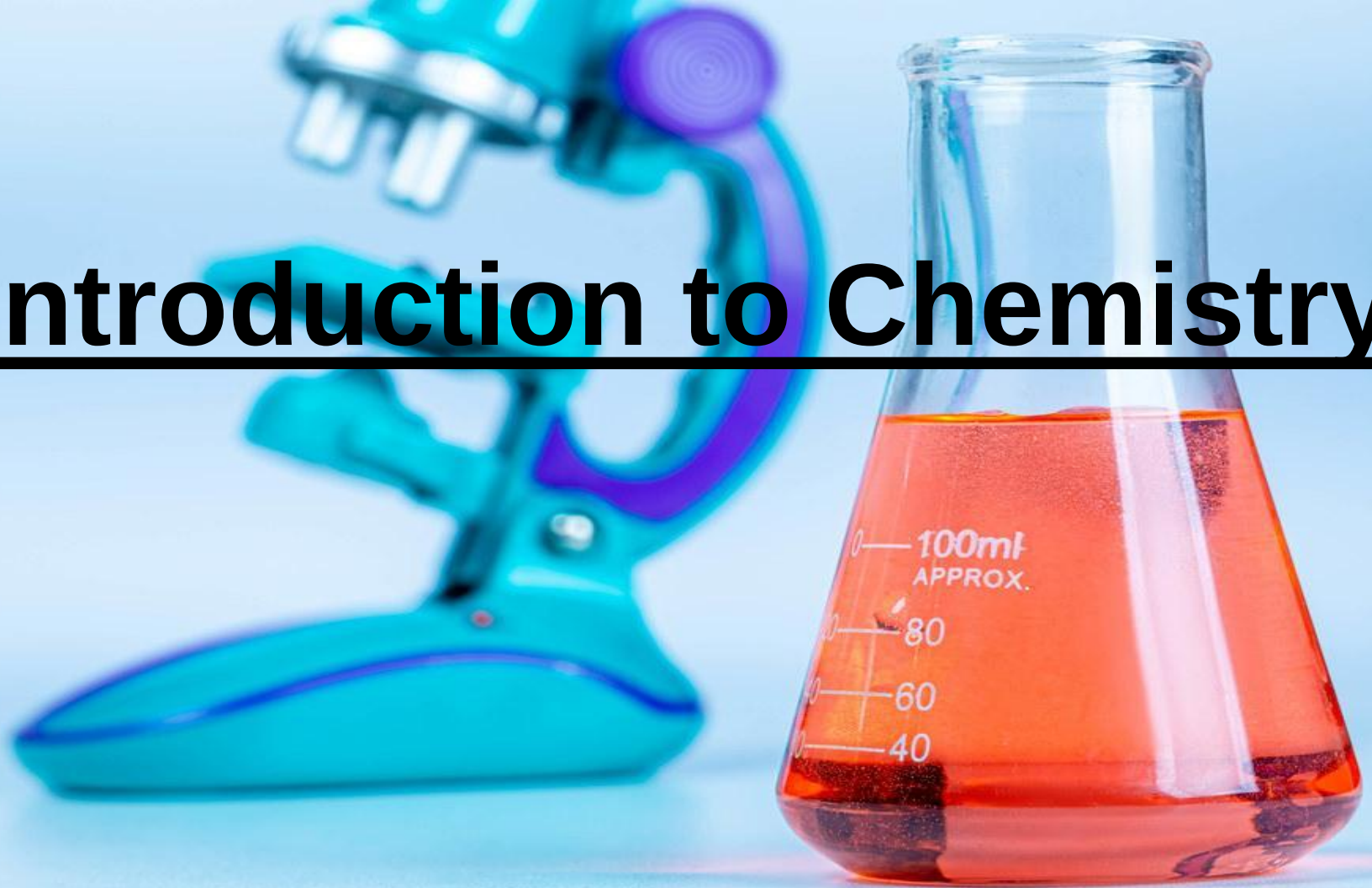


Introduction to Chemistry



Objectives

1. Define in their own words the term “chemistry”
2. State the three (3) main branches of chemistry.
3. Identify at least five (5) chemists and outline their contributions to the development of
4. chemistry
5. Identify at least three (3) ways in which chemistry contributes to everyday life.



How would you define the term “Chemistry?”



Assemble the words to create a definition for the word chemistry...

that study undergoes of is and
the the changes matter
chemistry matter

Assemble the words to create a definition for the word chemistry

Chemistry is the **study** of **matter** and the **changes** that **matter** undergoes.

But what is matter?

- ❑ Matter- Anything that has mass and occupies space.

Examples of matter?

- ❑ Examples of non-matter?
 - Heat, light, sound, energy

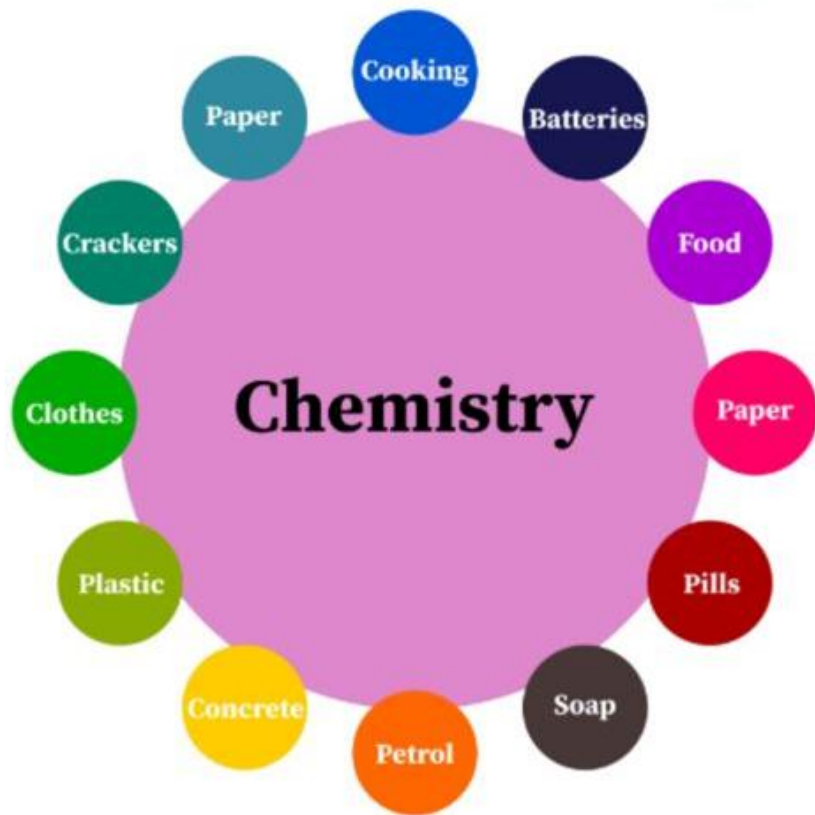
Why Study Chemistry?

1. In order to explain the natural world.
2. To help you prepare for a career.
3. To become an informed citizen.



Examples of Chemistry in Our Daily Lives.....

- Chemical reactions are constantly taking place around us. The human body facilitates thousands of chemical reactions every day. From the **digestion of food** to the movement of muscles – all bodily actions involve chemical reactions. A few other examples of chemistry in the day-to-day lives of humans are listed below.
- The **process of photosynthesis** that enables plants to convert water, sunlight, and carbon dioxide into glucose and oxygen is a chemical reaction. This process is the foundation upon which the entire food chain is built.
- Soaps and detergents are produced using a chemical process known as **saponification**.
- Even the **sunscreen** used by humans to protect themselves from the harmful UV-A and UV-B radiation of the sun is based on chemistry. These lotions and creams consist of a combination of inorganic and organic compounds that either filter or block the incoming ultraviolet radiation.
- **Cooking:** Chemical reactions transform food, changing its flavor, texture, and colour.



Branches of Chemistry

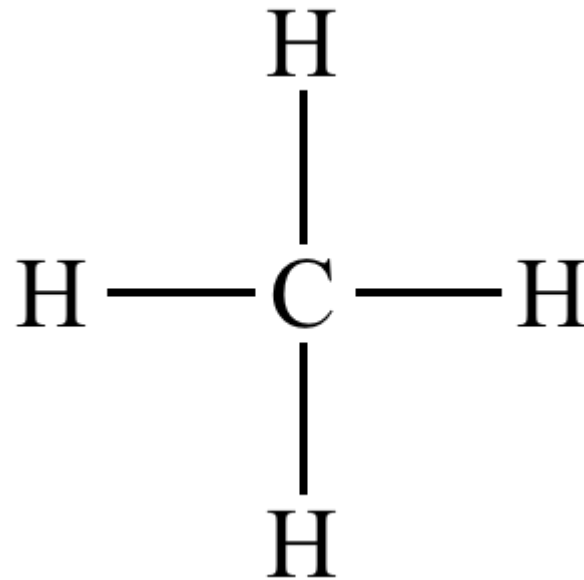
Branches of Chemistry



Organic Chemistry

Organic chemistry is the branch of Chemistry that involves the scientific study of **organic compounds** (compounds that contain carbon atoms bonded to hydrogen).

This branch of chemistry primarily deals with the structure and chemical composition of organic compounds, the physical and chemical properties of organic compounds, and the chemical reactions undergone by these compounds.



Methane

Inorganic Chemistry

Inorganic chemistry is the branch of Chemistry that involves the scientific study of **inorganic compounds** (compounds that do not contain carbon-hydrogen bonds). Examples: sodium chloride magnesium oxide, water

Inorganic chemistry studies the behaviour of these compounds along with their properties, their physical and chemical characteristics too.



Organic vs Inorganic Compounds

Organic compounds contain carbon, usually bonded to hydrogen.



DNA



Sugar



Methane



Ethanol

Inorganic compounds usually don't contain carbon.



Table Salt



Hydrochloric Acid



Quartz



Carbon Dioxide

Inorganic carbon compounds include carbon dioxide and some carbonates, cyanides, and carbides.

Physical Chemistry

Physical chemistry is the branch of chemistry concerned with interactions and transformations when matter undergoes change.

❖ Unlike other branches, it deals with the principles of physics underlying all chemical interactions



Group Assignment

- In groups (5-6 persons per group), students will be asked to conduct a research on five chemists. They will outline their contributions to the development of chemistry. Students will present their findings by way of a project, booklet or a chart.

Rubric for Assignment -

- Identify 5 Chemists and highlight their contributions (10 marks)
- Pictures of scientists/ their work where necessary (2 marks)
- Biographical information on each scientist (2marks)
- Creativity and neatness (2marks)
- Timeliness (2marks)
- Project free from grammatical and mechanical errors (2marks)

Total = 20 marks

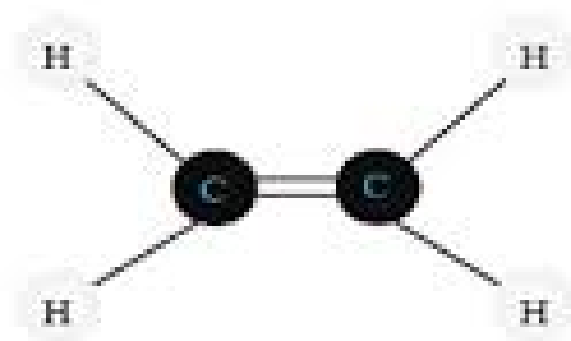
Due date: 9⁴ - Oct 1

Due date: 9⁵ – Sep 30

Formative Assessment

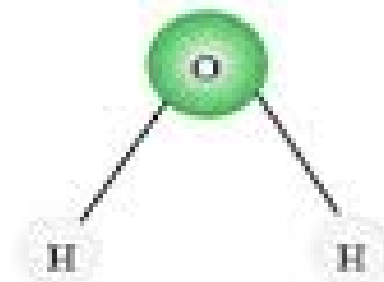
1. Define chemistry
2. Define matter
3. Give 1 example of matter and one example of non-matter
4. Name the branches of chemistry
5. Differentiate between inorganic and organic chemistry
6. Define physical chemistry
7. Give 2 examples of chemistry in everyday life
8. Identify organic vs inorganic compounds

Organic Molecule

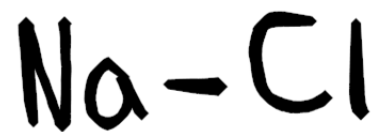
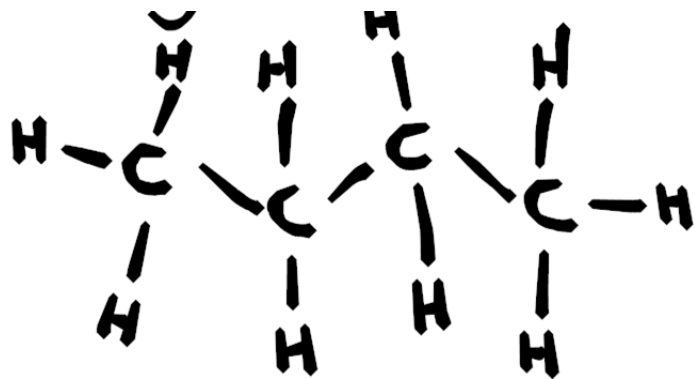


Ethylene

Inorganic Molecule



Water molecule



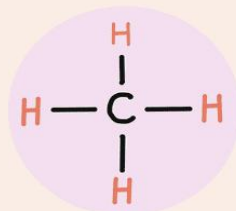
Organic



DNA



Table Sugar



Methane



Ethanol

Inorganic

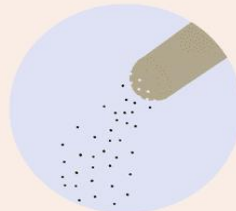


Table Salt



Carbon Dioxide



Diamond



Silver

Sources

<https://byjus.com/chemistry/>

<https://www.slideshare.net/kendonsmith/chapter-1-introduction-to-chemistry-16534448>