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+256 778 633 682, 753 802709  
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## S1 New Curriculum chemistry

**Theme:** Introduction to Chemistry and experimental Techniques

### S1 New Curriculum Chemistry Chapter 1 –Chemistry and society

#### Introduction

**Chemistry** is a field of scientific study that explores the nature of materials, the changes that take place in them and the manner in which they are formed. It is the study of the substances of which the universe is made

Some of materials in our daily life, their usage and their sources

#### 1. Wash basin

Types of wash basins



Ceramic



Metal



Plastic



Wooden

#### Some of the Uses of wash basin

- **Washing & Cleaning:** Whether it's washing clothes, dishes, or even yourself, basins make water-based cleaning much more convenient.
- **Food Preparation:** Large basins are great for mixing dough, washing vegetables, or even soaking grains.
- **Storage & Organization:** They can hold anything from toys to laundry, helping keep things neat.

#### Materials from which was basins are made

**Plastic** – Lightweight, affordable, and available in many colors and sizes.

**Metal** – Durable and strong, often made of stainless steel or aluminum.

**Ceramic** – Stylish and often used for decorative or bathroom basins.

**Wood** – Rare, but sometimes crafted for aesthetic purposes in fancy designs.

## 2. Iron bar

Some uses of Iron Bars



Constructions



Fencing



Furniture

### Sources of Iron bar

**Iron Ore Mines** – The raw material for iron bars is extracted from the earth in the form of iron ore. Major producers include countries like China, Australia, Brazil, and India.

**Steel Plants** – Iron ore is processed and refined in steel plants, where it is melted and shaped into bars.

**Scrap Metal Recycling** – Used iron and steel materials are melted down and reused to create new iron bars, making it a sustainable source.

**Foundries & Manufacturing Units** – Specialized industries produce iron bars for construction, automotive, and industrial uses.

## 3. Chairs

Some use of chairs



Accent chairs



Barber chairs



Bean bag chairs



Massage chairs



Gaming chairs



Recliners



Dining chairs



Wingback chairs



Rocking chairs

Some sources of chairs

**Wood & Timber Mills** – Wooden chairs are crafted from different types of wood like oak, mahogany, or pine.

**Metal & Steel Manufacturers** – Metal chairs are made using iron, aluminum, or stainless steel processed in factories.

**Plastic & Polymer Industries** – Plastic chairs are molded from durable polymers in specialized production plants.

**Furniture Factories & Workshops** – Factories and skilled artisans assemble chairs using raw materials and design expertise.

**Local Markets & Retail Stores** – Ready-made chairs are sold in furniture shops or large retailers.

**Some changes that take place to substances in everyday life**



a. burning



b. boiling



c. rusting



d. rotting

### Trial 1

- (i) Identify conditions necessary for the changes a to d above
- (ii) In which of the changes a –d are new things formed.

### Why do we study chemistry?

The knowledge of chemistry is used for

- (i) making drugs, paints, perfumes, pesticides, fertilizers
- (ii) explain the changes that take place in substances such as how food cooks, what makes firewood burn etc.
- (iii) to get jobs such as Doctors, Engineers, Farmers.
- (iv) Improving environmental conservation

### Careers of chemistry

Chemistry is sometimes called the **central science** because it connects other sciences to each other, such as biology, biochemistry, physics, botany, geology, environmental sciences, material science and pharmaceuticals. Some of the common careers of chemistry include:

- (i) Pharmacy
- (ii) Medicine
- (iii) Education
- (iv) Industrial chemists

### Contribution of chemistry to Ugandan economy

Chemistry plays a vital role in Uganda's economy across multiple sectors:

- **Agriculture:** Chemistry helps improve crop yields through fertilizers and pesticides, ensuring food security and boosting exports of crops like coffee and tea.
- **Pharmaceuticals:** The production of medicines relies on chemistry, supporting healthcare and economic growth.
- **Water Treatment:** Chemical processes ensure clean drinking water, benefiting public health and industries.
- **Industrial Development:** Sectors like cement, steel, and plastics depend on chemistry for manufacturing and construction.
- **Energy Sector:** Chemistry aids in the extraction and processing of natural resources like oil and gas, which could significantly boost Uganda's economy.
- **Environmental Conservation:** Chemical analysis helps monitor pollution, supporting tourism and sustainable development.
- **Employment:** in education, factories provide source of income to Ugandans.

Revision questions

1. What is chemistry?
2. Name substances and their uses that can be made with the knowledge of chemistry.
3. List any four careers related to the study of chemistry
4. Name any chemical changes in our daily life
5. Explain why chemistry is referred to as central subject.
6. State how the following chemical processes have contributed to Ugandan economy:
  - (i) Manufacture of cement
  - (ii) Sewage treatment
  - (iii) Manufacture of sugar
  - (iv) Manufacture of fertilizers

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Thanks

Dr. Bbosa Science