LIVING WITH CHEMISTRY.

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ACKNOWLEDGEMENT.

The main purpose of this book is to illustrate and show how chemistry influences our lives.

Chemistry is so fundamental to our world, it plays a role in all our lives and touches almost every aspect of our existence.

DEDICATION.

This book is dedicated to Kitante Hill School.

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WHAT IS CHEMISTRY?

Chemistry is a field of scientific study that explores the nature of materials, the changes that occur to them under different conditions and the manner in which they were formed.

* It is also the study of the substances of which this universe is made.

WHY IS CHEMISTRY STUDIED?

The knowledge of Chemistry is necessary in the understanding of composition properties and behavior changes of matter that form the environment.

We study Chemistry in order;

To save the environment.

* Under Chemistry we learn how to make environmentally friendly materials (things that will not be harmful to the environment) mainly biodegradables.
* We can use Chemistry to clean the environment we can recycle wastes into useful things.
* Human waste can be made into biogas for cooking.
* Plastics and other non-biodegradables can be recycled into new and better things.

To learn how to solve our problems.

* We are able to separate mixtures (oil and water using a separating funnel)
* Obtaining pure substances from their crudes (pure alcohol from crude alcohol, different petroleum products) by fractional distillation.
* To stop rusting of iron materials by making alloys, coating with zinc etc.
* To magnetize and demagnetize iron materials.

Manufacturing important chemical products.

* Sanitizers for disinfecting our hands and surfaces.
* Soap for washing clothes.
* Medicine for treating people.
* Paint for decorating houses, preventing rusting etc.

To understand behavior of different substances.

* This is enables us to know what substances are dangerous when combined and how to stabilize them.
* We are able to identify acids from bases.
* We are then able to safeguard against the dangers of corrosive and explosive materials.

Lastly for career development or for employment opportunities e.g. medical doctors.

HOW IT RELATES WITH OTHER SUBJECTS.

Chemistry creates a solid background that blends the sciences and mathematics together. This is why it is also called a central science.

Biology.

* Chemistry is used to understand the chemical processes that occur within living organisms.
* As well as chemical makeup of different biomolecules.

Physics.

* Chemistry is used to understand the behavior of atoms and molecules and how they interact with energy and forces.

Mathematics.

* In Chemistry taking measurements, performing dimensional analysis, determining temperature, density and so on cannot be done without mathematics.

Additionally, Chemistry is also a foundational subject for many other fields such as medicine, engineering and materials science.

CAREERS UNDER CHEMISTRY.

Since Chemistry is a science it offers a lot of job opportunities i.e.

* Quality control chemist (QC) monitors and tests the use of materials during the production process.
* Chemical engineers evaluate methods of turning chemicals into marketable and usable products.
* Teachers develops and teaches chemistry science from which other careers develop.
* Pharmacologists are responsible for developing new drugs and perform studies on their effect on humans and animals.
* Chemical technician works in a laboratory assisting with research and helping to conduct experiments.

There are so many other careers other than the ones mentioned.

CONTRIBUTION OF CHEMISTRY TO UGANDA’S ECONOMY.

* Provides employment e.g. teachers.
* Used to make agricultural products e.g. pesticides that can be sold.
* Used in processing of food to add more value to it.
* Used in making drugs to ensure better health. Used in industries to make products and taxes can be collected from them.
* Used in extraction of minerals from the earth e.g. gold.
* Used in separating petroleum products e.g. petrol.

EXAMPLES OF CHEMISTRY IN OUR DAILY LIVES.

DIGESTION.

* This relies on chemical reactions between food, acids and enzymes to breakdown food into soluble molecules to be absorbed by the body.

RESPIRATION.

* Is a chemical process which is a reaction between glucose and oxygen to produce heat and energy.

SOAPS AND DETERGENTS.

* They are used to emulsify dirt and grime so that it can easily be washed from clothes and dishes.

DRUGS.

* Chemistry aids in the manufacture and application of different drugs to treat various diseases.

RUSTING.

* Relies on a chemical reaction between water and oxygen.

COOKING.

* This a chemical change that alters food to make it more palatable and digestible.

CONCLUSION.

Chemistry is a very important subject it contributes a lot to our lives. Therefore, we cannot live without it.

MINDMAP SHOWING THE RELATION OF CHEMISTRY.