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## BIO 101

Outline 25

lectures: Dr. C.K. Mburu (Mr. Pap)

Topic: Concept of life

Biology is the study of life and its interaction with the environment which include the structure, growth function, evolution and taxonomy.

Living organisms ~~are~~ are made of cells that can obtain and use energy to make food.

Non-living organisms do not have cells and cannot use energy to make food.

Cell is the basic unit of life; living organisms are made up of cell.

### Characteristics of living organism

growth: living organisms grow from the division of cells. growth in animals are definite while plants are indefinite.

the bigger you look, the more the cells and mass you have.

\* Look up difference between Unicellular and Multicellular organisms.

2) Reproduction: living organisms have the ability to give birth to their younger ones [Reproduce]

- Replicate in other to continue the lineage.

3) Fitness - Is the strength of living organism to contribute to the next generation.

4) Imitability / Response: Is the ability of living organisms to respond to change in the environment. e.g. light, temperature, etc. and stimuli either positively or negatively.

5) Movement: living organism changes their location in search of food, safety, etc. c.

6) Nutrition: All living organisms require energy and food for their activities.

Excretion) living organism has the ability to pass out unused products in their body after digestion.

NB: Why we feel tired after eating is because our body requires energy for digestion.  
The stronger the food you eat, the more the digestion.

A Respiration is the biological process by which living organisms take in oxygen and release carbon dioxide to produce energy.

8) Autotrophy: living organisms die after living for a time.

# General Practical Biology 1

## BIO 107

### Sheets

- \* Get a file and plain because you will report all your practicals
- \* Get your textbook for your 20% mark.
- \* When you draw, don't paint (free hand sketch).
- \* Lines should not touch each other during lab.
- \* Spell correctly.

### Instructions:

#### Introduction:

- \* Use of Laboratory is a specially organised room or place or building/hall designed and equipped for research analysis and experimental procedures.
- \* Laboratory can be defined as a building, room or place [under a tree etc.] specially designed and equipped for scientific research, experiments and analysis with aid of apparatus and specimens.
- \* A science laboratory can be said to be a controlled facility or workspace designed for scientific research, experiments and analysis. It is equipped with specialized instruments and apparatus to test theories, explore scientific principles and make precise measurements in the field of biology, chemistry and physics.

### Laboratory Safety Rules:

Working in the laboratory can be interesting and rewarding. However, it can be quite dangerous if proper safety rules are not taken at all times.

Therefore, Proper Safety Precautions must be taken while working in the laboratory.

Those Safety Precautions/Measures are as follows:

1. You must put on your laboratory coat before entering the laboratory [against chemical splash, broken glasswares etc.]
2. Read all laboratory instructions before entering the laboratory.
3. Do not touch any equipment in the laboratory except you are asked to do by the laboratory Instructors & lecturer to avoid damages/accidents.
4. Do not use any equipment you do not know how it operates.
5. Do not eat or drink or smoke in the laboratory.
6. Read Carefully the labels on reagents and chemical bottles before using them.
7. Wash your hands thoroughly before and after experiments are conducted.
8. Know the position of the fire extinguisher and always make use of it and the exit door if fire outbreak occurs.
9. Return all the equipments used for the practicals to their Vanshies after the experiments.
10. Do not leave matches ends on the floor of the laboratory to avoid fire outbreak.
11. Do not inhale chemical substances or reagents in the laboratory.

(b) Report any laboratory accident to the laboratory Attendant immediately.

(b) Follow all written and Verbal Safety Rules.

### Format for Reporting Protocols:

- Title: Every experiment must have a title.
- Date: The date which the experiment was carried out.
- Aim: Why you embarked on the practical.
- Materials: List the materials and apparatus used in carrying out the experiment.
- Procedures: The step by step way you carried out the experiment numbered as 1, 2, 3

Note: Procedures are reported in past tense.

Observations - State your observations.

Conclusion/Conclusion  
Draw and labeled.

\* Record \*

Invertebrate Zoology.  
Lower Plants.