SENIOR ONE

TERM ONE
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SL SCIENCE LECTURES

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PRODUCT OF SCIENCE LECTURES 256
KISSEM BIOLOGY DEPARTMENT

MEANING OF BIOLOGY

- BIOLOGY is derived from two Greek words
- "**BIOS**"- meaning life
- "**LOGOS**"-knowledge
- Therefore ***biology is the study of living things.***
- **"What do you think is the difference between science and biology?"**
- **What other branches of science do you remember?**
- The people who study biology are called ***biologists.***

LIVING THINGS AND NON-LIVING THINGS

- ***What are living things?***
- ***What are non-living things?***
- Classify the above organisms as living

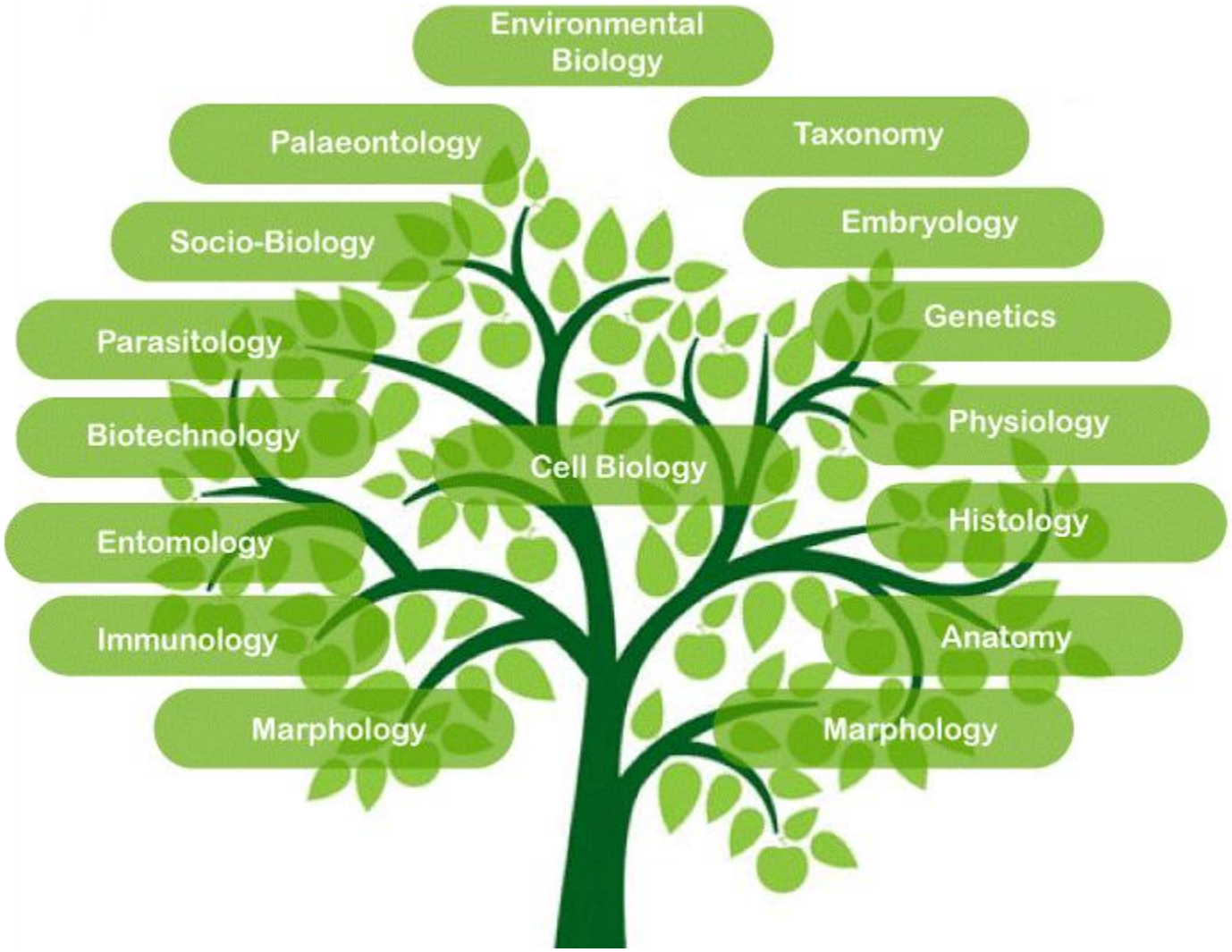
Or non-living things

Explain your choice of classification above?

BRANCHES OF BIOLOGY

- Biology originally had two branches. **Plant science** and **animal science.**

- However they have expanded include other fields.
- **Assignment find out the meaning of the following branches as shown in the tree**
- **State the various opportunities that would be undertaken when working in those fields**
- **State the importance of the various branches of biology towards our day to day life.**



TRIAL EXAMPLES

- After the outbreak of COVID -19 ,the ministry wanted to assemble a group of scientists, however the HR of the ministry lacks knowledge about which group of scientists to bring together.

As a biology student advise the HR which branches of biology would be essential in this struggle?

- An insect has been flying across Lake Victoria. It keeps on destroying crops until when they are completely leafless. However it can be used as a protein source .

Identify the branches of biology in which specialists must be obtained to address the insect.

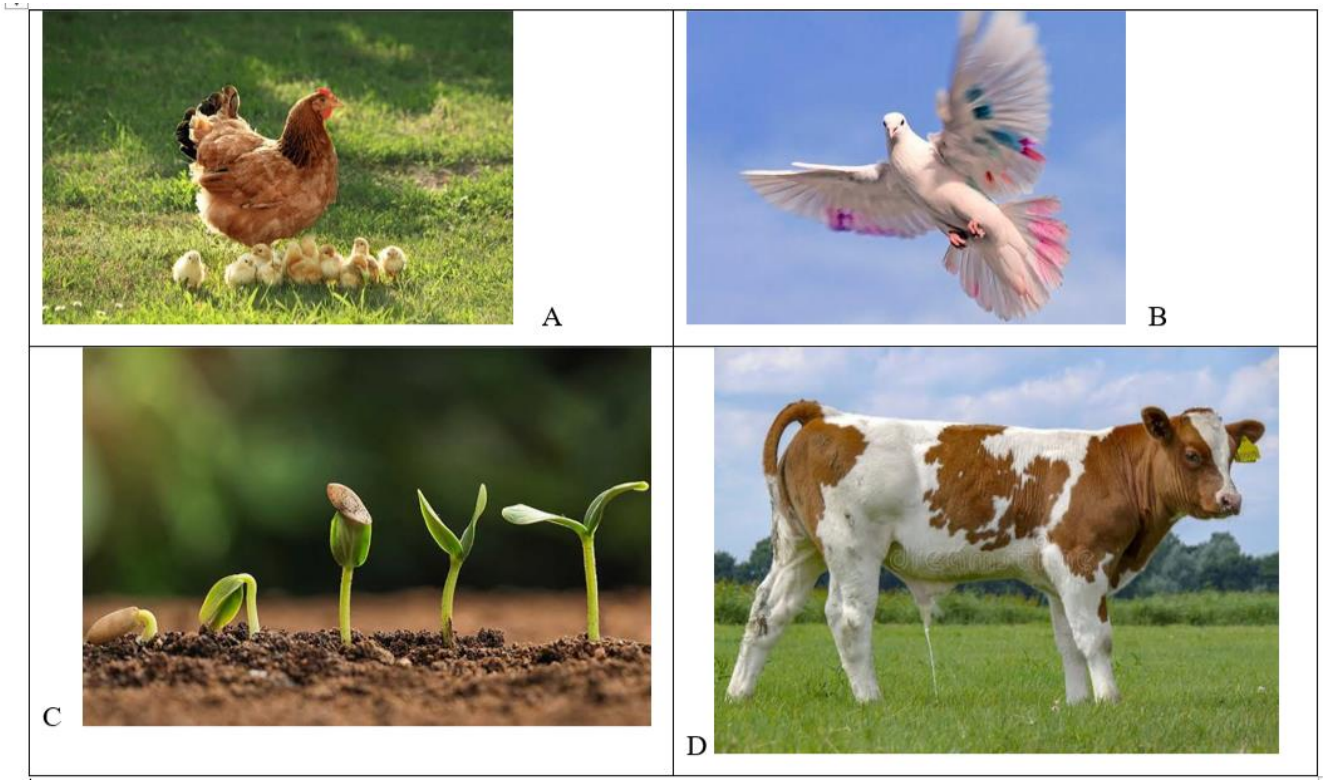
What is the role of each specialist you have identified above?

IMPORTANCE OF BIOLOGY

- Study the images below and explain how the knowledge of biology is utilised in each field .
- Suggest any other 7 fields thought know where biology is important

LIFE PROCESSES IN LIVING ORGANISMS

- All living organisms share common characteristics that are called life processes which support their life .
- It is these characteristics that separate them from non living things.
- There are seven characteristics of life summarised as “MRSGREN”
- Movement
- Respiration
- Sensitivity
- Growth
- Reproduction
- Excretion
- Nutrition



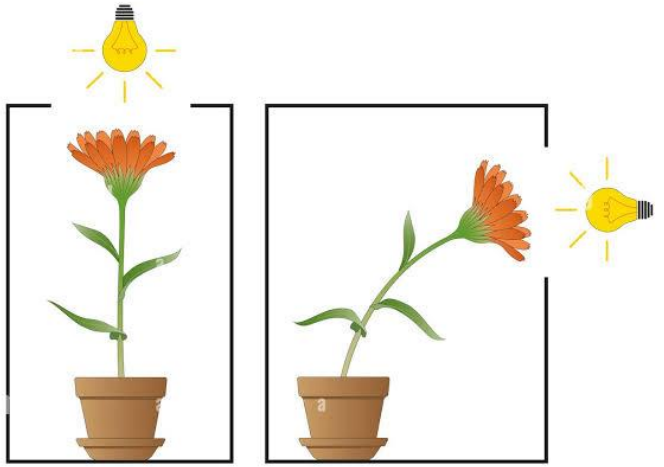
- Study the images below and identify the life processes

MOVEMENT

- This is known as locomotion.

Why do animals move from one place to another?/ why do you always move.

- Plants don't move but show response towards a stimulus.
- The plant parts that show movement are flowers, leaves ,stems. The response can be towards light, touch ,gravity.



RESPIRATION

- This is the process by which organisms break down food in the presence or absence of oxygen to release energy..
- The energy is used in carrying out activities in the body such as growth, transportation of materials and movement of parts or the whole body.

Where does respiration occur in :

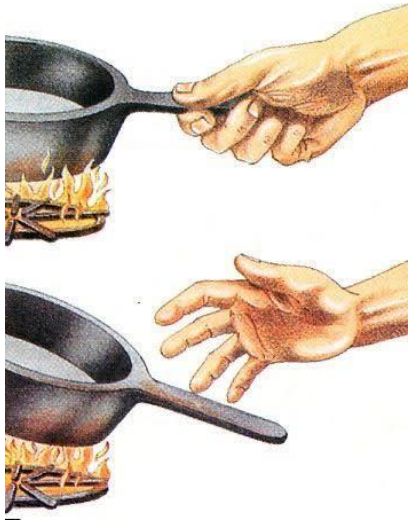
- ✓ Animals?
- ✓ Plants?

Give some differences how respiration is manifested in plants and animals

SENSITIVITY

- This is an organism's ability to sense or detect and respond to changes(stimuli) in its environment.
- The changes include heat, touch ,smell and pain. These reactions to stimuli are called responses.

What is the difference between sensitivity exhibited by plants and animals?



GROWTH

- This is the division and increase in number of cells resulting into an increase in the living matter.
- Plants exhibit localised growth at points called meristems and it takes place throughout the life of plant.
- Growth in animals occurs in all parts and stops at a certain age.
- Why do you have to grow?

REPRODUCTION

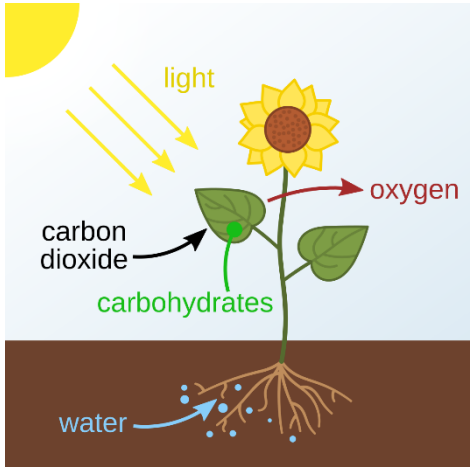
- This is when the living organisms produce their young ones.
- They reproduce through sexual means in which the male and female reproductive cells known as gametes that fuse to form a zygote. The zygote which grows into an adult. Some organisms reproduce asexually or without gametes.
- Are there any differences between reproduction in plants and animals if so state them?

EXCRETION

- This is the removal of waste products or by-products of chemical reactions in the body.
- Why do you think excretion is important in the lives of living organisms.
- Generate a list of waste products that are removed from the body of animals and their respective organs from which they are removed from
- Plants do not have specialised structures to remove waste products research about this and give a scientific explanation as to why this is so?

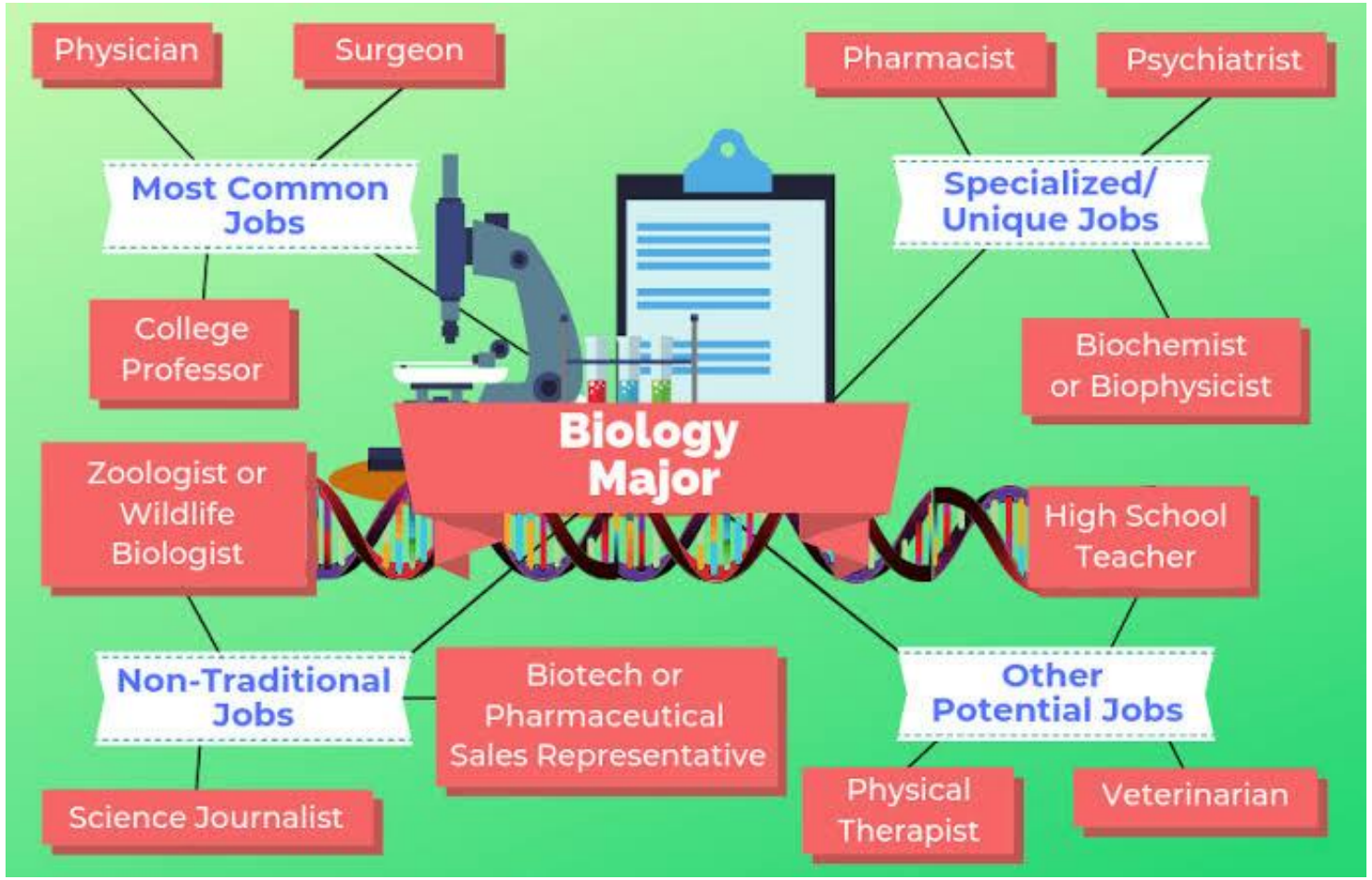
NUTRITION

- This is the process where living organisms feed on materials from the environment and make them part of their body or use them to provide energy.
- Animals feed on already made food which is taken through the body by a process called **Digestion**.
- Plants make their own food from carbon dioxide and water in the presence of sunlight through a process called **photosynthesis**.



CAREERS IN BIOLOGY

EXPLAIN THE ROLES OF THE VARIOUS PEOPLE SHOWN BELOW




Any Questions