



Natural Sciences 6

# Module 0: Living Things

# Living things

- Everything around us can be classified as:
- Living thing:
  - They born
  - They eat
  - They grow
  - They reproduce
  - They die
- Non-living thing




# Living things

Living things carry out three life processes:

- Nutrition: give us energy.
- Interaction: interact with everything around us.
- Reproduction: when we have babies.

# Living things

How are living things organised?

- There are different levels of organisation.
- But, all living things are made up of cells.
- cells+cells  tissue+tissue  organ+organ  Systems

# Living things

The structure of the animals:

- **Cells:** the nucleus control everything. Surrounding the nucleus is a liquid called cytoplasm. The organelles carry out the life function of a cell. The membrane protect the cell.

# Living things

The structure of the animals:

- **Tissue:** many cells joined together form tissue. Muscles and organs are made up of tissue.

# Living things

The structure of the animals:

- **Organs:** are made up of specific tissue, like the muscles or the stomach.

# Living things

## Human Organ Systems



**Skeletal system**  
*provides structure to the body and protects internal organs*



**Muscular system**  
*supports the body and allows it to move*



**Digestive system**  
*breaks down food and absorbs its nutrients*



**Respiratory system**  
*takes in oxygen and releases waste gases*



**Nervous system**  
*controls sensation, thought, movement, and virtually all other body activities*



**Circulatory system**  
*transports oxygen, nutrients, and other substances to cells and carries away wastes*



# Living things

The structure of plants:

- Plants have also cells and are similar to animal cells but the cell membrane is rigid and have chloroplasts that are responsible for carrying out photosynthesis.

# Living things

What are microbes?

- They are simple and microscopic organism that can be unicellular or multicellular.

# Living things

Unicellular:

- **Bacteria:** Most are microscopic.  
Some have flagella.  
Reproduce by dividing in two.  
Some are beneficial and other can cause illness.

# Living things

Unicellular:

- **Amoebae:** Many are microscopic.

They move around changing shape and extend a part of the cell body in the direction they want to move.

Reproduce by dividing in two.

Can cause illness in humans.

# Living things

Multicellular organism:

- Animals, plants and some fungi are multicellular.
- They are made of many cells.

# Living things

Pluricellular organism:

- Organism are made up of many unicellular organism working together as a colony.
- Each cell is identical or similar to the others.
- Each cell is indepent.

# Living things

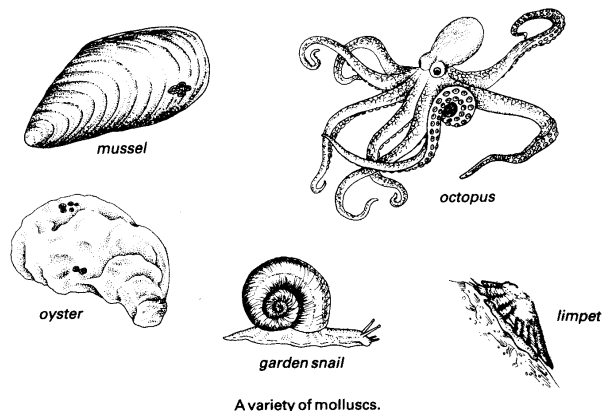
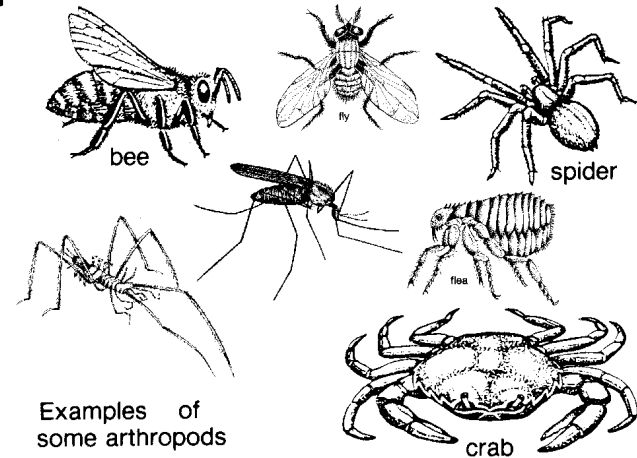
How are animals classified?

- If they have spinal cord (backbone) are called vertebrates.
- If they don't have spinal cord (backbone) are called invertebrates.

# Living things

## Invertebrates:

- **Arthropods:**
  - Jointed legs.
  - Exoskeleton.
  - Are oviparous.
  - Have lungs or gills.
- **Molluscs:**
  - Have soft bodies.
  - Often have a shell.
  - Are oviparous.
  - Have lungs or gills.





# Living thing



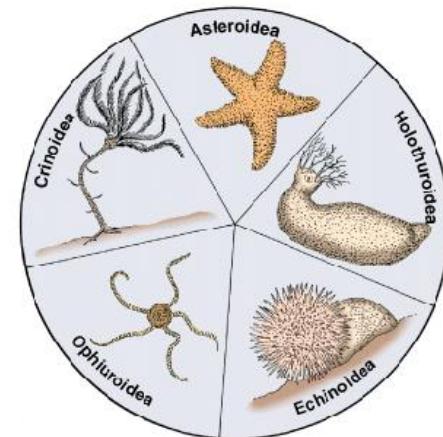
## Invertebrates:

- Annelids :

- Segmented bodies.
- Are oviparous.
- Have lungs or gills.

- Echinoderms:

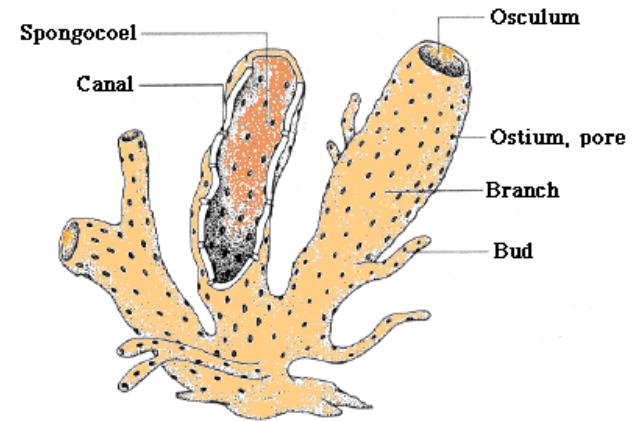
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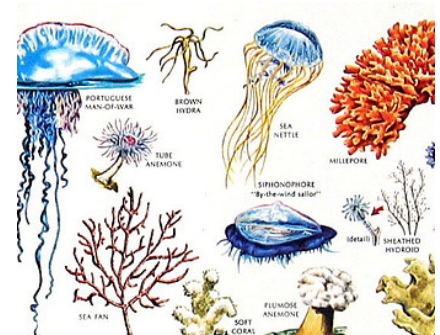
# Living things

## Invertebrates:

- **Porifera** : { Have soft body.  
Reproduce by forming buds.  
Absorb oxygen through pores.



- **Coelenterates**: { Have soft bodies.  
Can have tentacles.  
Reproduce by forming buds.  
Absorb oxygen through their skin.



# Living things

## Vertebrates:

- Mammals :
  - Fur and skin.
  - Usually have four legs.
  - Are oviparous.
  - Have lungs.
- Fish:
  - Have scales, fins and tails.
  - Are oviparous.
  - Have gills.


# Living things

## Vertebrates:

- Reptiles :
  - Have scales.
  - Usually have four legs, except snakes.
  - Are oviparous.
  - Have lungs.
- Birds:
  - Have feathers, two legs and two wings.
  - Are oviparous.
  - Have lungs.

# Living things

## Vertebrates:

- **Amphibians:**  Have smooth skin and four legs.  
Some have tail. (Newt)  
Are oviparous.  
Have gills when are babies and lungs when they are adult.

# Living things

## How do plants carry out nutrition?

- **Plants :**
  - Absorb water and nutrients from the soil. This mixture produce **raw sap**.
  - The raw sap travels through the stem to the leaves.
  - Leaves absorb ebergly from sunlight and carbon dioxide from air. They use them to convert **raw sap** in **elaborated sap**.
  - The elaborated sap travels through the stem to the rest of the plant. Elaborated sap contains nutrients that plant uses to live and grow.

# Living things

How do plants carry out nutrition?

- **Plants:** During photosynthesis, plants drop oxygen to the atmosphere.

# Living things

How do plants reproduce?

Plants reproduce by producing seeds. They can be **Angiosperms** and **Gymnosperms**.

- **Angiosperms:** They are flowering plants and have fruits.
- **Gymnosperms:** They produce cones that contain seeds.



# Living things

How do animals carry out nutrition?

The animals cannot produce their own food. They can be:

- Carnivores: Eat other animals.
- Herbivores: Eat plants.
- Omnivores: Eat animals and plants.

# Living things

Food chains:

The animals that eat or are eaten by each other. Food chains includes animals, plants and other organism.

- Plants: They are producers, because they produce their own food.
- Herbivores: Are primare consumers, beacuse they eat plants.
- Omnivores and carnivores: Are secondary consumers, because they ear primary consumers.
- Decomposers: They transform plant and animal matter into nutrients.

# Living things

Food web:

Many animals consume more than one type of food, because of this the animals often belong to more than one food chain.

# Living things

How do animals reproduce?

The animals can be:

- Viviparous: When they give birth.
- Oviparous: When they lay eggs.

# Living things

Ecosystems and biospheres:

- **Ecosystem:** Includes all the living things and non-living things.
- **Biosphere:** Is made up of all the ecosystems on Earth.