

# *“THE ANIMALS”*

## 1. INTRODUCTION

- Their cells are **eukaryotic**.
  - They are **multicellular organisms**.
  - They are **heterotrophic organisms**.
  - They have complex systems to do functions of Nutrition, Interaction and Reproduction. Example: The Digestive, Circulatory, Excretory or sensory organs.
  - They are classificate into two groups, **Vertebrates and Invertebrates**.
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# “THE ANIMALS”

## 1. INTRODUCTION

- **INVERTEBRATES:**

- They don't have an internal **bony skeleton**.

- **VERTEBRATES:**

- They have **skeleton** with spinal column.

- They have **digestive system** composed of a **digestive tract** (tubo digestivo) and auxiliary organs, **liver** and **pancreas**.

- A respiratory system composed of **gills** (in aquatic animals) and **lungs** (in land animals).

- An excretory system with **kidney**.

- Sexual reproduction** between two different sexes. They can be **oviparus** or **viviparus**.

- An nervous system composed of an **encephalon** protected by **cranium**.

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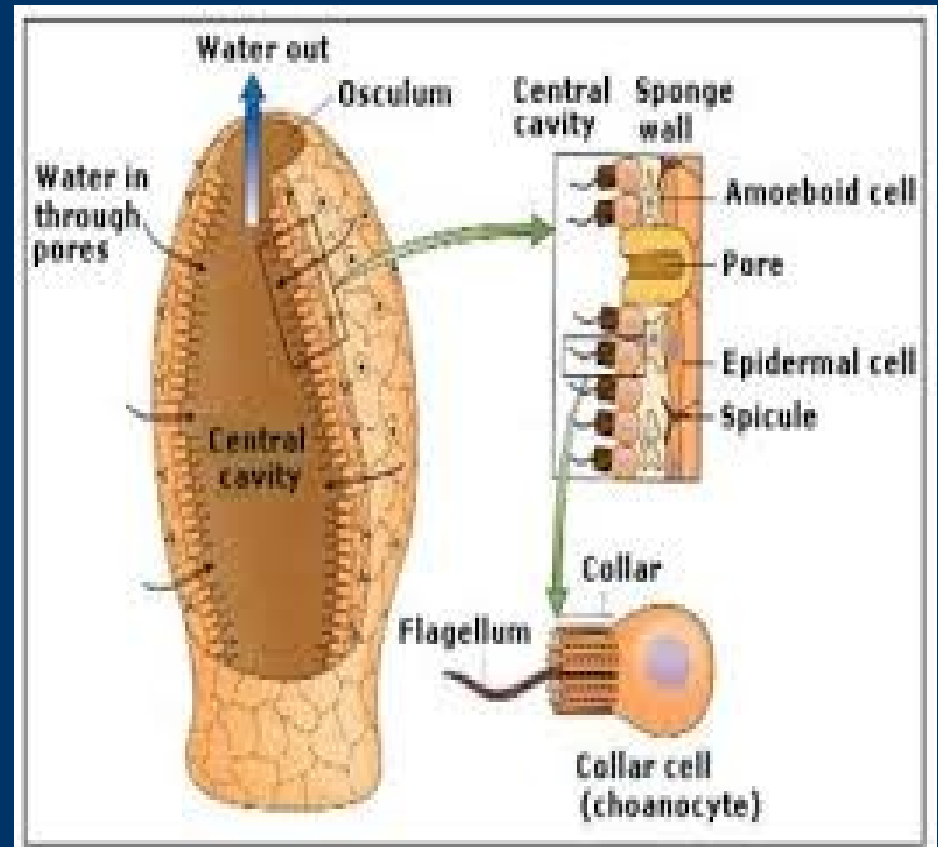
# *“THE ANIMALS”*

## 2. INVERTEBRATES

### SPONGES:

- They are aquatic animals permanently attached to rocks.
  - Their body is shaped like a **sac** covered with small pores.
  - They have a large opening in the body called **osculum**.
  - They are **filter feeders**.
  - Sponges have collar cells, **choanocytes**, that obtain nutrients and oxygen from water.
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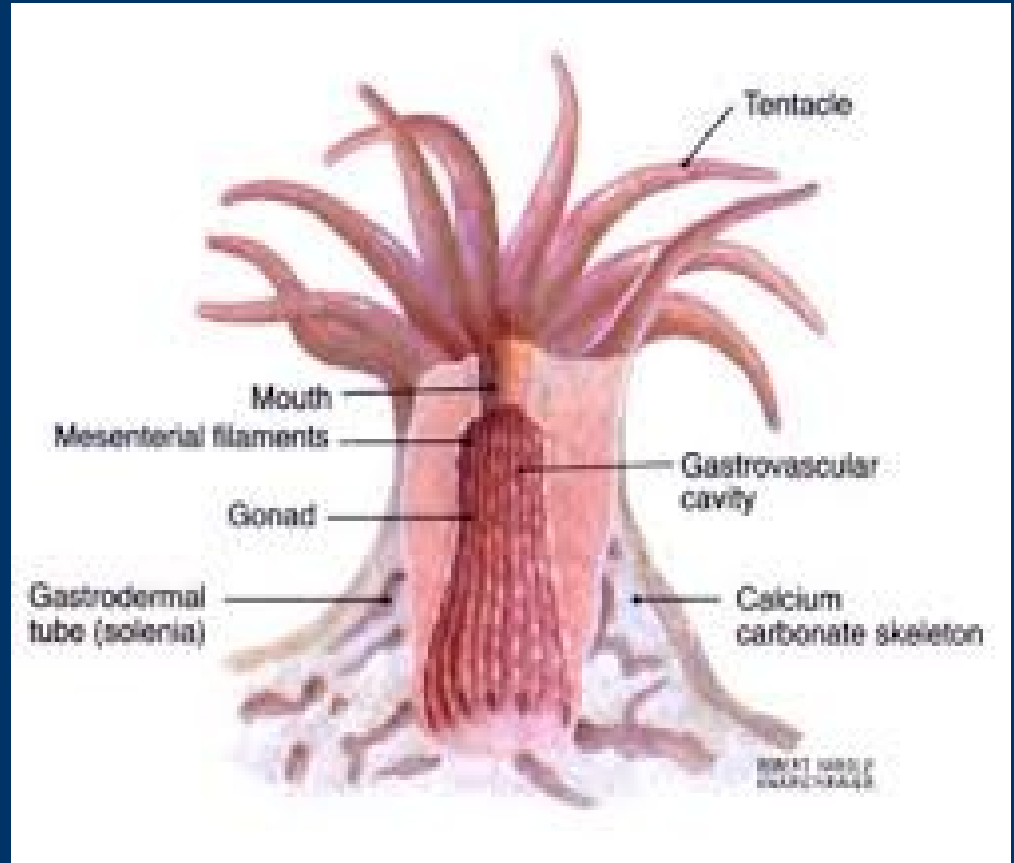
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## 2. INVERTEBRATES

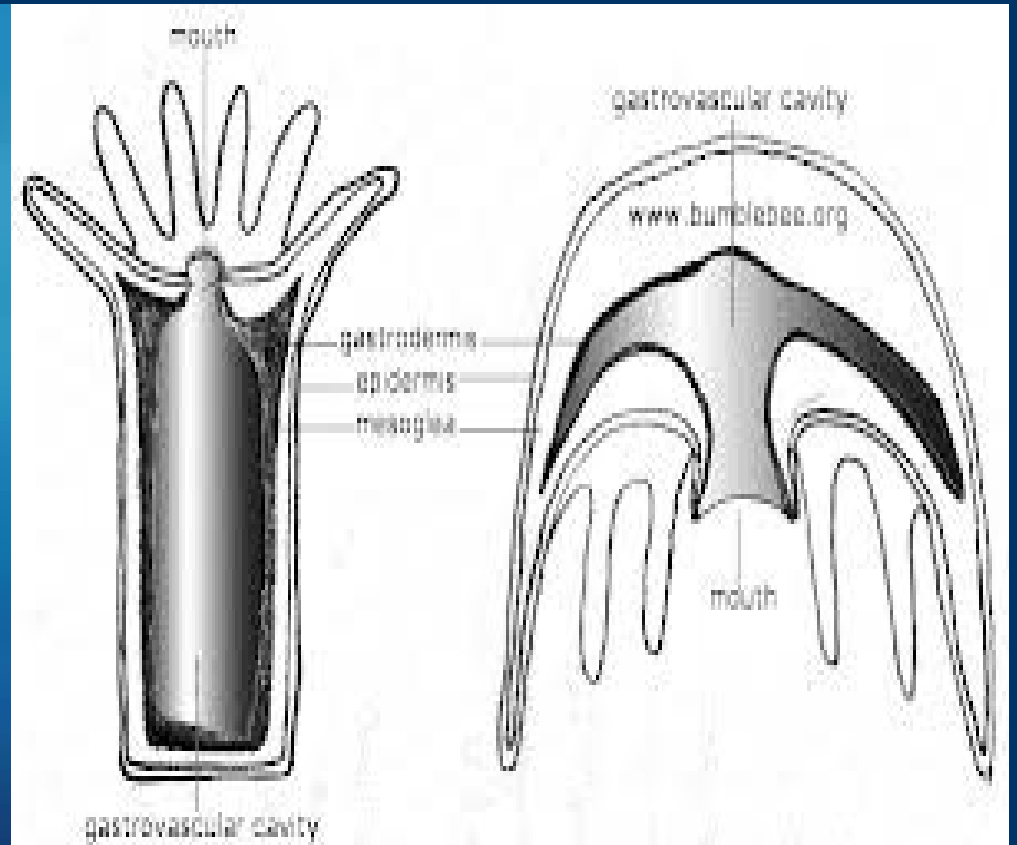
### CNIDARIANS:

- They are aquatic animals, such as **jellyfish**, **anemones** and **corals**.
  - They have a digestive cavity with a single opening surrounded by tentacles.
  - They are two types:
    - **Polyyps**: They are cylindrical in shape and are attached to the sea floor.
    - **Medusae**: They are umbrella shaped and gellatinous.
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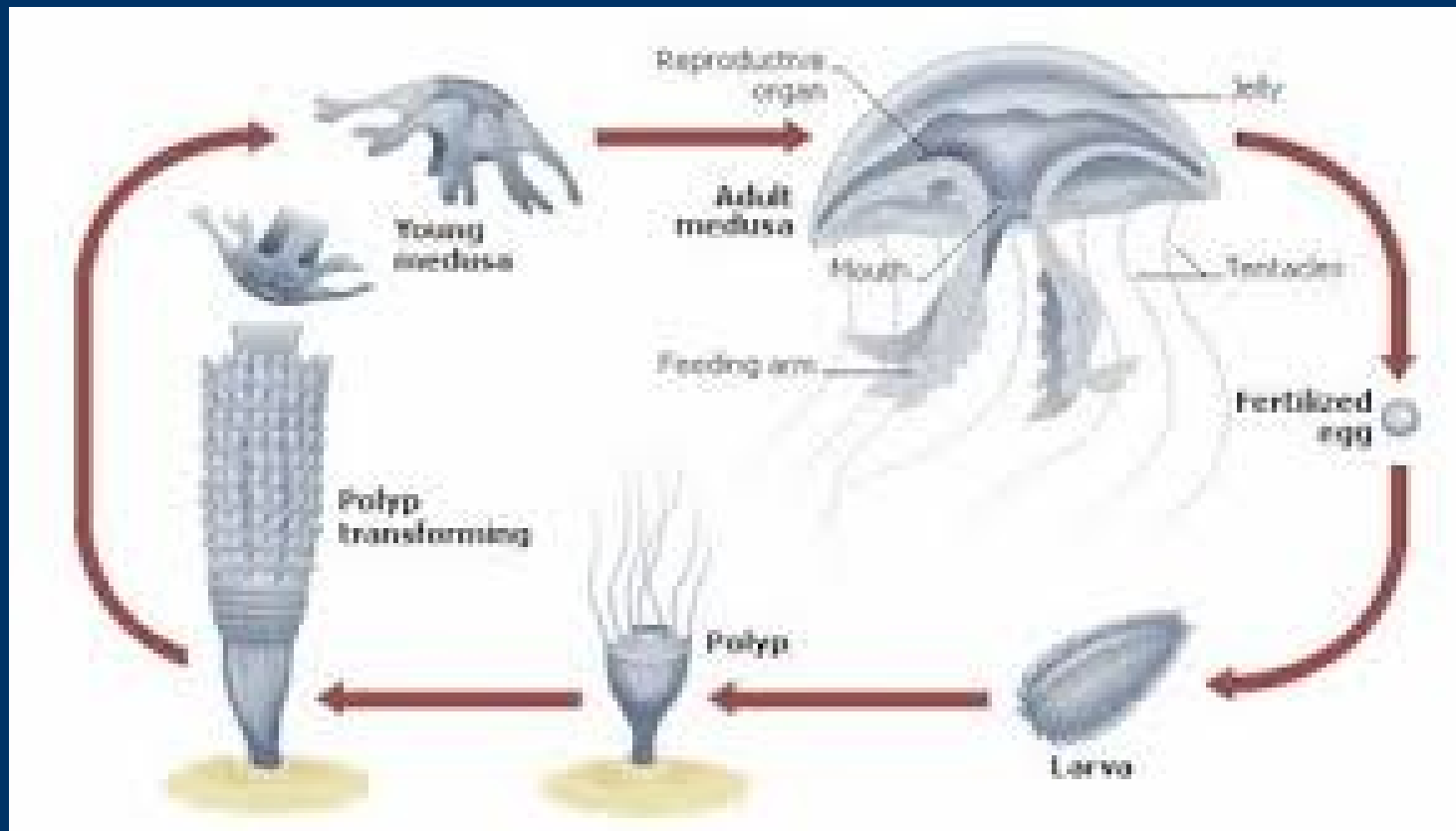


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## CNIDARIANS REPRODUCTION





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### 2. INVERTEBRATES

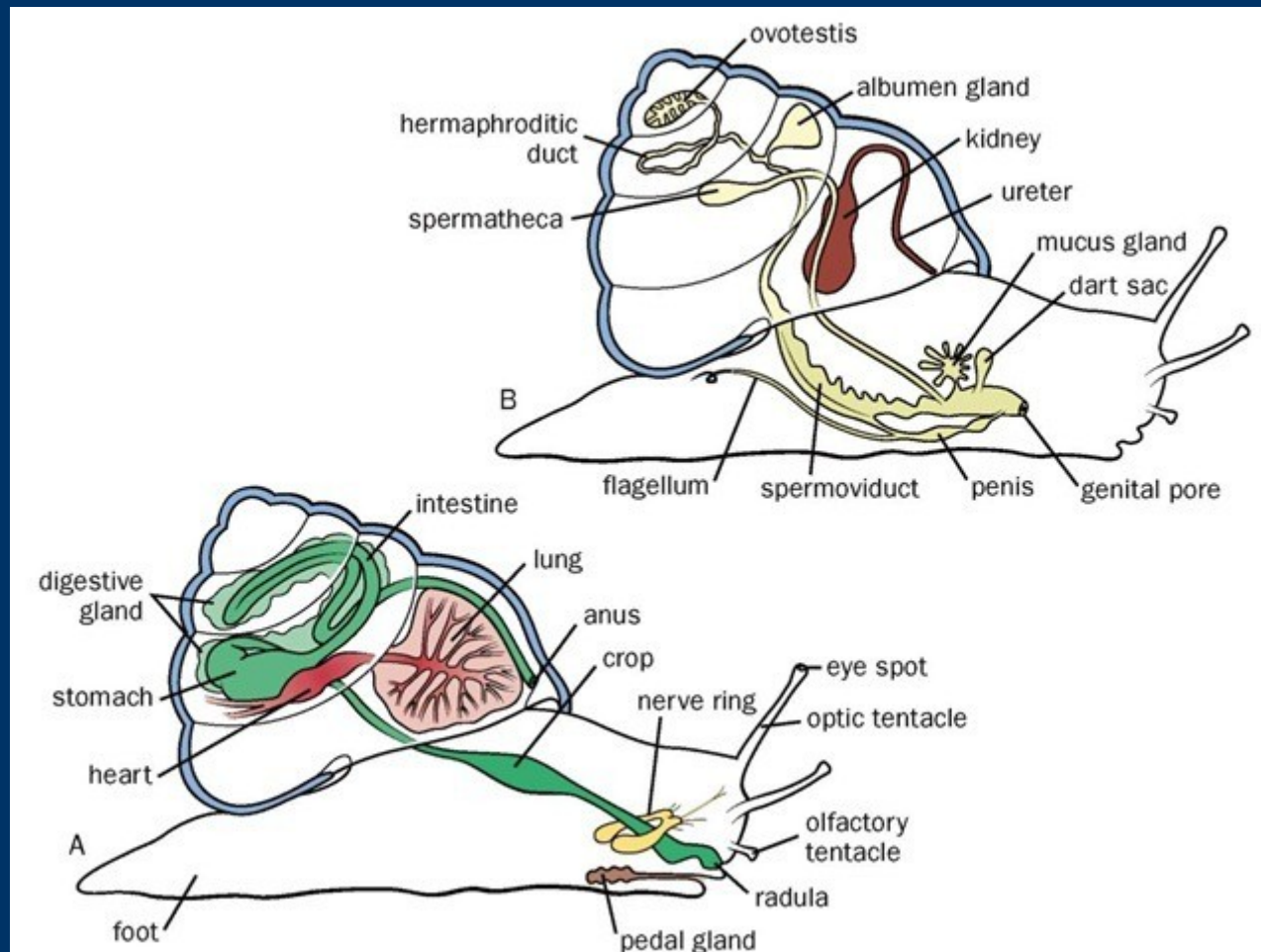
#### MOLLUSCS

- Their body have an external layer (**mantle**) surrounding the **visceral mass**.
  - They have an **internal or external shell** (octopus and slugs don't have shell).
  - They have a **muscular foot** to move around.
  - They have a **radula**, a type of **tongue** with very small teeth for biting and chewing food (except bivalves).
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## 2. INVERTEBRATES

### MOLLUSCS



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## 2. INVERTEBRATES

### MOLLUSCS

There are three main classes of molluscs:

- **Bivalves:** They have two shells.
  - **Gastropods:** They have one-piece spiral shell (except slugs)
  - **Cephalopods:** They have changed their muscular foot into a group of tentacles.
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## BIVALVES



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## GASTEROPODS



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## CEPHALOPODS



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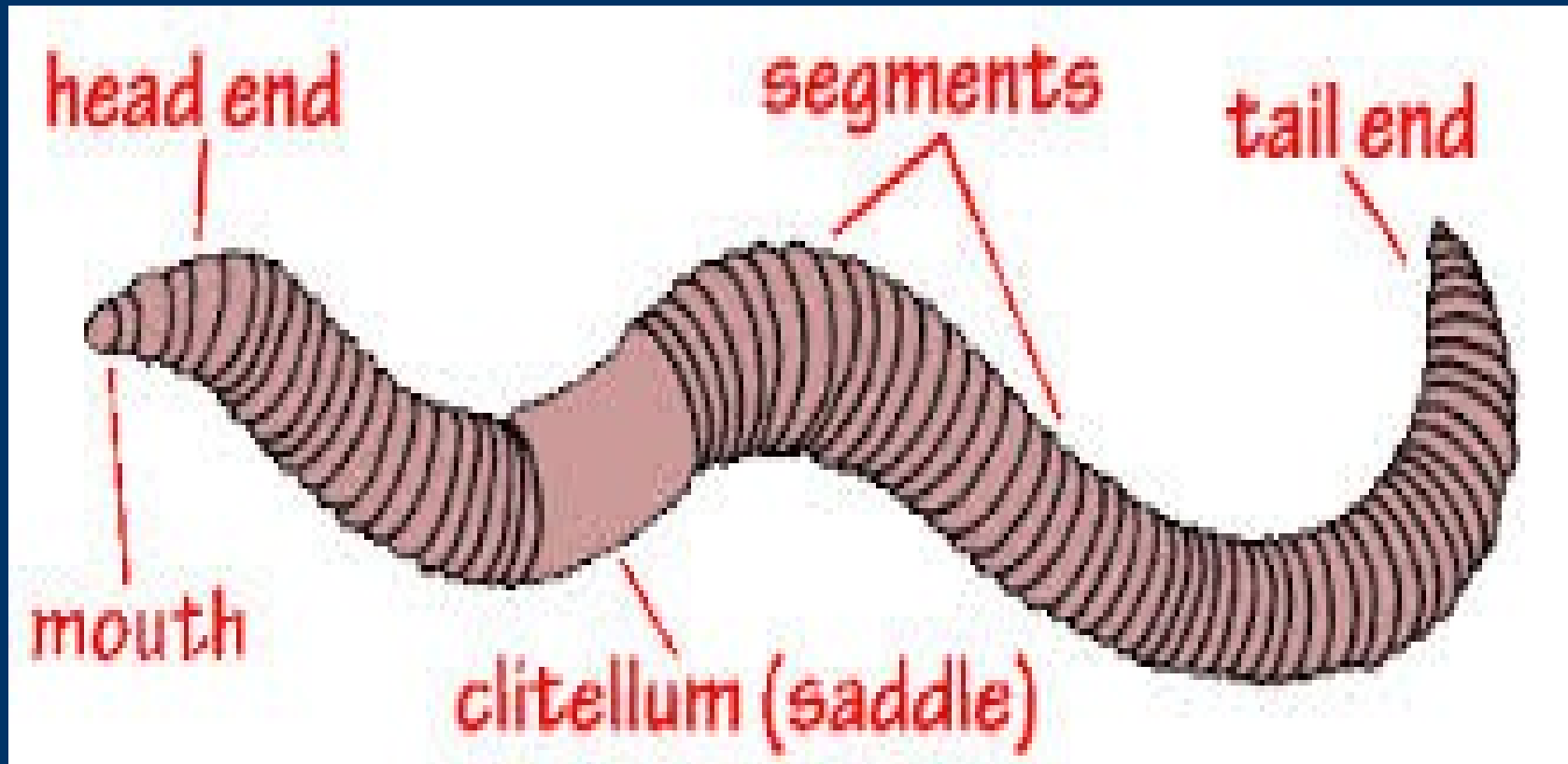
## 2. INVERTEBRATES

### ANNELIDS

- Annelid's bodies are long and cylindrical.
  - They are divided into segments called **metameres**.
  - The digestive tract starts at the mouth and ends at the anus.
  - Respiration is **cutaneous**.
  - **Earthworms** feed on organic particles, but **leeches** feed on blood (they are parasites).
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## ANNELIDS





# *“THE ANIMALS”*

## 2. INVERTEBRATES

### ARTHROPODS

- This is the biggest group in the animal kingdom.
  - They have **legs, antennae** and **external skeleton** (exoskeleton).
  - They can have different types of mouth, adapted to different type of food.
  - Land arthropodes breath through **tracheas** and aquatic ones through **gills**.
  - During their life cycle they **shed** the skeleton and make a new one.
  - Some species change their look and their functions as they grow. This process is called **metamorphosis**.
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## 2. INVERTEBRATES

### ARTHROPODS

The most important groups of arthropods are the following ones:

- MYRIAPODS:
  - They have a head which has a pair of antennae.
  - Their **trunk** has many pair of legs. Ex: **Centipedes**.



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## 2. INVERTEBRATES

### ARTHROPODS

- ARACHNIDS:

-Their body is divided into two parts, abdomen and cephalotorax.

-This group includes, **spiders** and **scorpions**.



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## 2. INVERTEBRATES

### ARTHROPODS

- CRUSTACEANS

- Their body is divided into abdomen and cephalotorax.

- The cephalotorax has two pair of antennae.

- Many crustaceans have five pair of legs.

- This group includes prawns, lobster and crabs.



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## 2. INVERTEBRATES

### ARTHROPODS

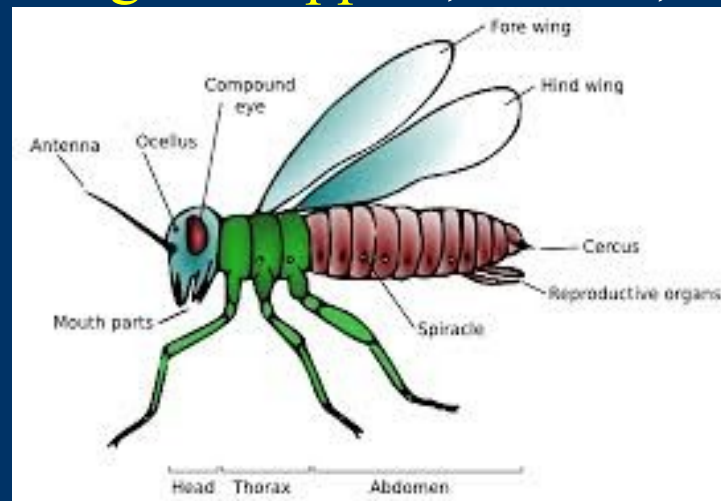
- INSECTS

-Their body is divided into **head**, **torax** and **abdomen**.

-The head has a pair of antennae.

-The torax has three pair of legs and often two pair of **wings**.

-This group includes **grasshoppers**, **beetles**, **ants**, **butterflies** and **flies**.



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## 2. INVERTEBRATES

### ECHINODERMS

- They have a **dermoskeleton** composed by **limestone plates** covered by skin.
- They have a system of tubes which seawater circulates through, **system of ambulacra**. They use this system to move, breath and get oxygen.
- This group includes **sea urchins** and **starfish**.



# *“THE ANIMALS”*

## 3. VERTEBRATES

There are five groups of vertebrates: **fish**, **amphibians**, **reptiles**, **birds** and **mammals**.

- **FISH**

- They live in fresh water or saltwater and breath through **gills**, and have fins that use to move through water.

- Their body have **head**, **trunk** and **tail**.

- Fish are **poikilotherms (cool-blooded)**.

- Most of them have a **swim bladder**, which fills up with air and allow them to float.

- They have a **lateral line**. It is a sensory organ to detect movement in the water.

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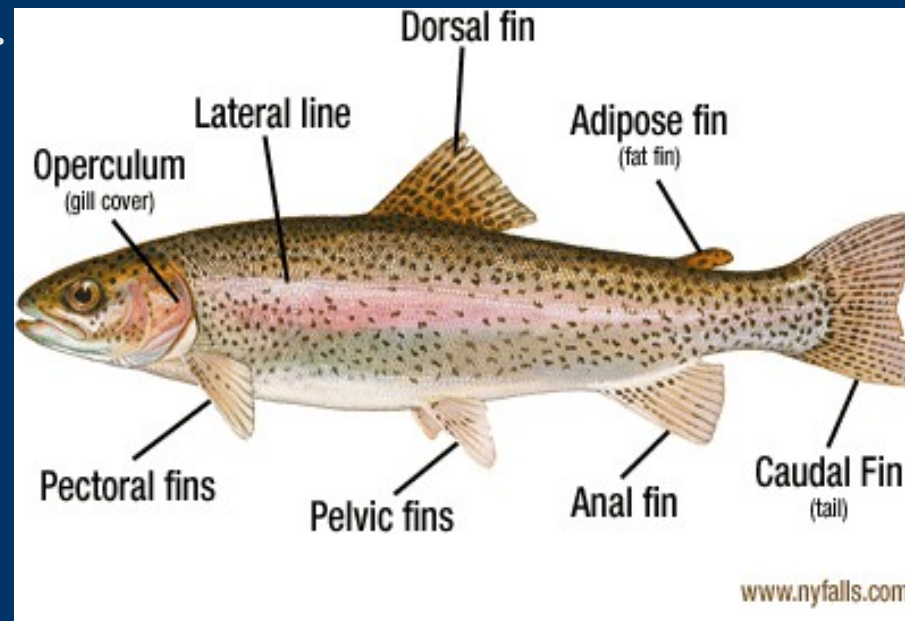
## 3. VERTEBRATES

- FISH

- They are mainly oviparus.

- Most of them have a bony skeleton, but some of them have a cartilaginous skeleton (Ex. Sharks).

- Their body is covered by scales and the operculum cover and protect the gills.





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## 3. VERTEBRATES

- AMPHIBIANS

- Amphibians live between land and water.

- They have a wet skin without scales.

- Young amphibians have tail, but don't have limbs. Adults amphibians lose their tail and develop limbs.

- They are poikilotherms.

- The larvae breath through gills, but the adults have **cutaneous** or **pulmonary respiration**.

- They are mainly oviparus.

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## 3. VERTEBRATES

- AMPHIBIANS

-The most important orders of the amphibians class are **anurans** (frogs) and **urodeles** (salamanders).



# *“THE ANIMALS”*

## 3. VERTEBRATES

- REPTILES

- Their bodies are covered with **thick scales**.

- They have lungs (pulmonary respiration).

- Reptiles are poikilotherms.

- Most of reptiles lay eggs that are covered with a shell to prevent **deshydration**.

- There are four orders of reptiles:

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# *“THE ANIMALS”*

## 3. VERTEBRATES

- REPTILES

Chelonia: Tortoises and freshwater turtles.



# *“THE ANIMALS”*

## 3. VERTEBRATES

- REPTILES

Squamata: Lizards and chamaleons.



# *“THE ANIMALS”*

## 3. VERTEBRATES

- REPTILES

Crocodylia: Crocodiles.



# *“THE ANIMALS”*

## 3. VERTEBRATES

- REPTILES

Ophidia: Snakes.



## *“THE ANIMALS”*

### 3. VERTEBRATES

- BIRDS

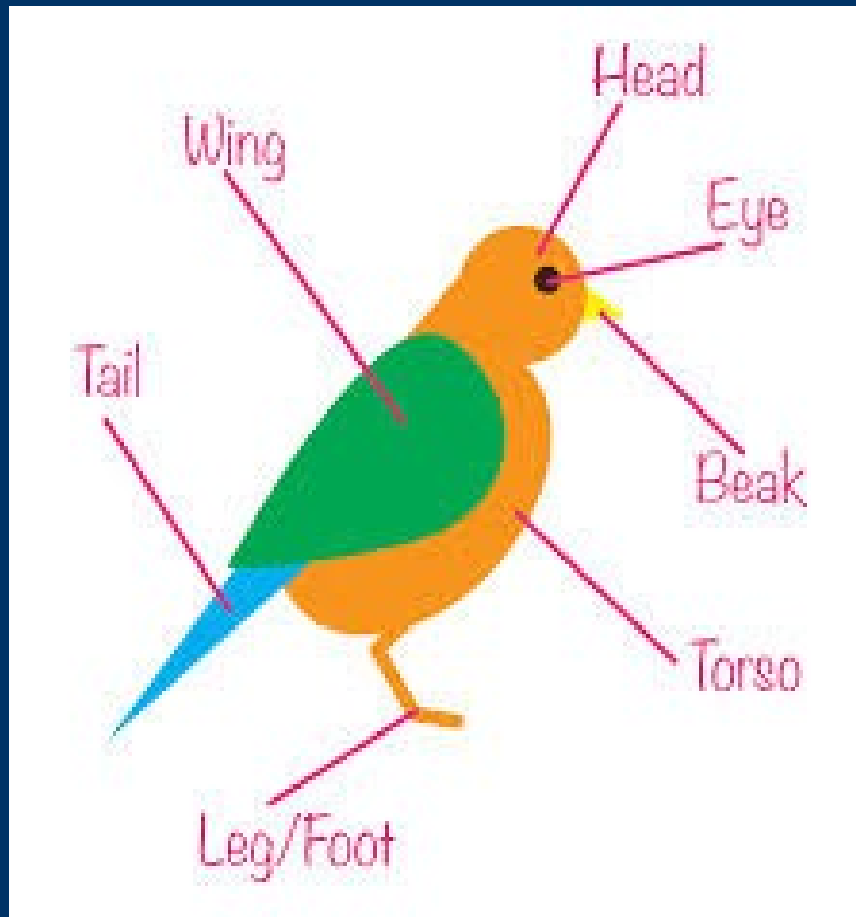
- Birds don't have **teeth** but have a **beak**.
  - Their body is covered with **feathers**, to keep it warm and also allow them to fly.
  - The back limbs are covered with scales, and the front limbs are extended into **wings**.
  - Birds bones are **thin and hollow**.
  - Birds are **homeotherms** (they can maintain a constant body temperature).
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# *“THE ANIMALS”*

## 3. VERTEBRATES

### BIRDS



# *“THE ANIMALS”*

## 3. VERTEBRATES

- MAMMALS

- Mammal's body are covered with **fur** to regulate their bodies temperature.
  - The female have **mammary glands**.
  - They are homeotherms and breathe through lungs.
  - Mammals are divided into three groups according to their reproduction:
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### 3. VERTEBRATES

- MAMMALS

Monotremes: They are **oviparus**.

Example: Duck-billed platypus (Ornitorrinco).



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### 3. VERTEBRATES

- MAMMALS

**Marsupials:** They are **viviparous**, but after birth, the youngs complete their development in an **external pouch** where the mammary glands are.



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## 3. VERTEBRATES

- MAMMALS

**Placentals**: They are **viviparous**. The youngs are already well developed when they are born.

They are: whales, horses, mice, bats, monkeys,...and human beings.

