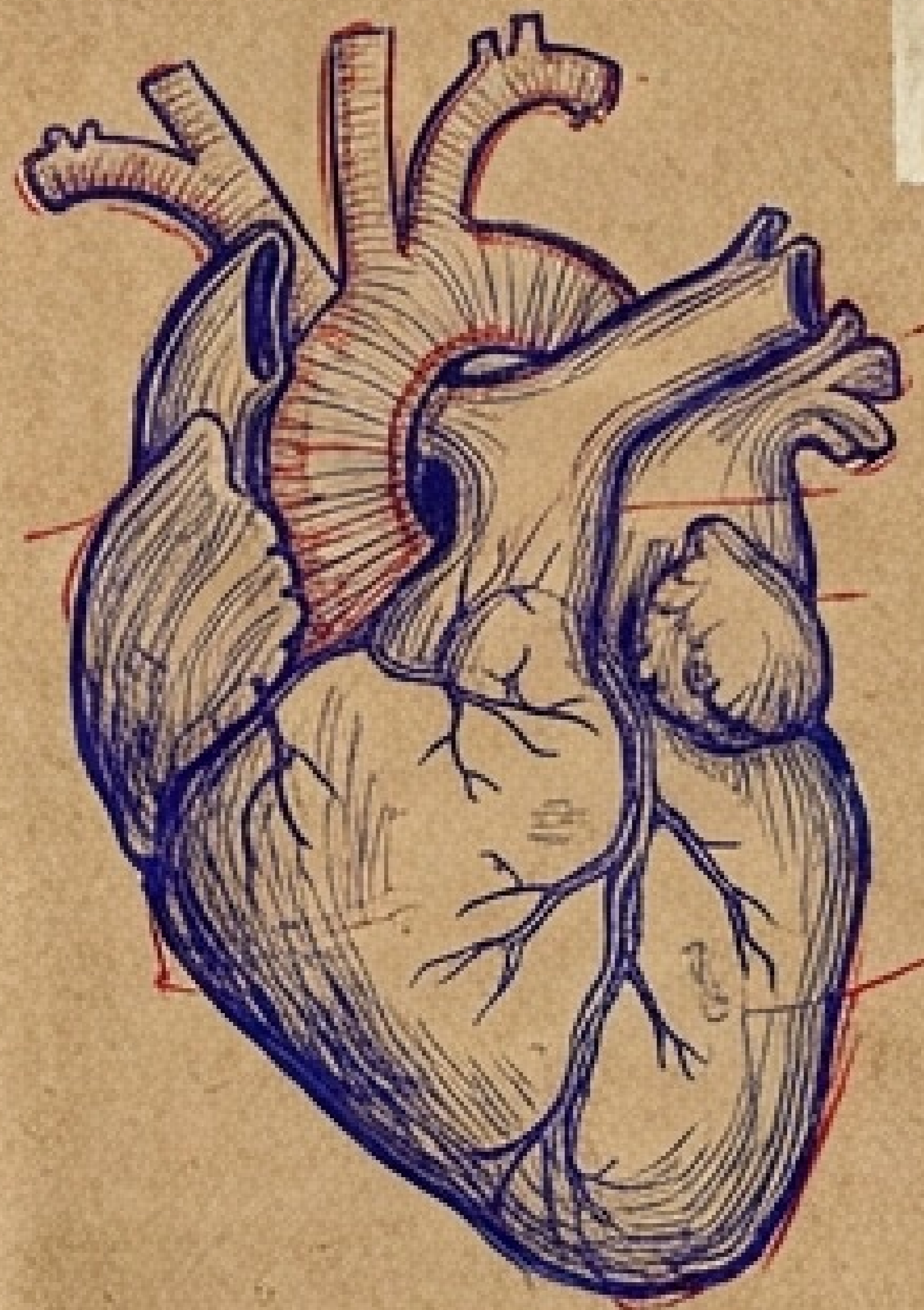


Animals & Human Body

Grade 10 Detailed Study Notes



Hello
my name is

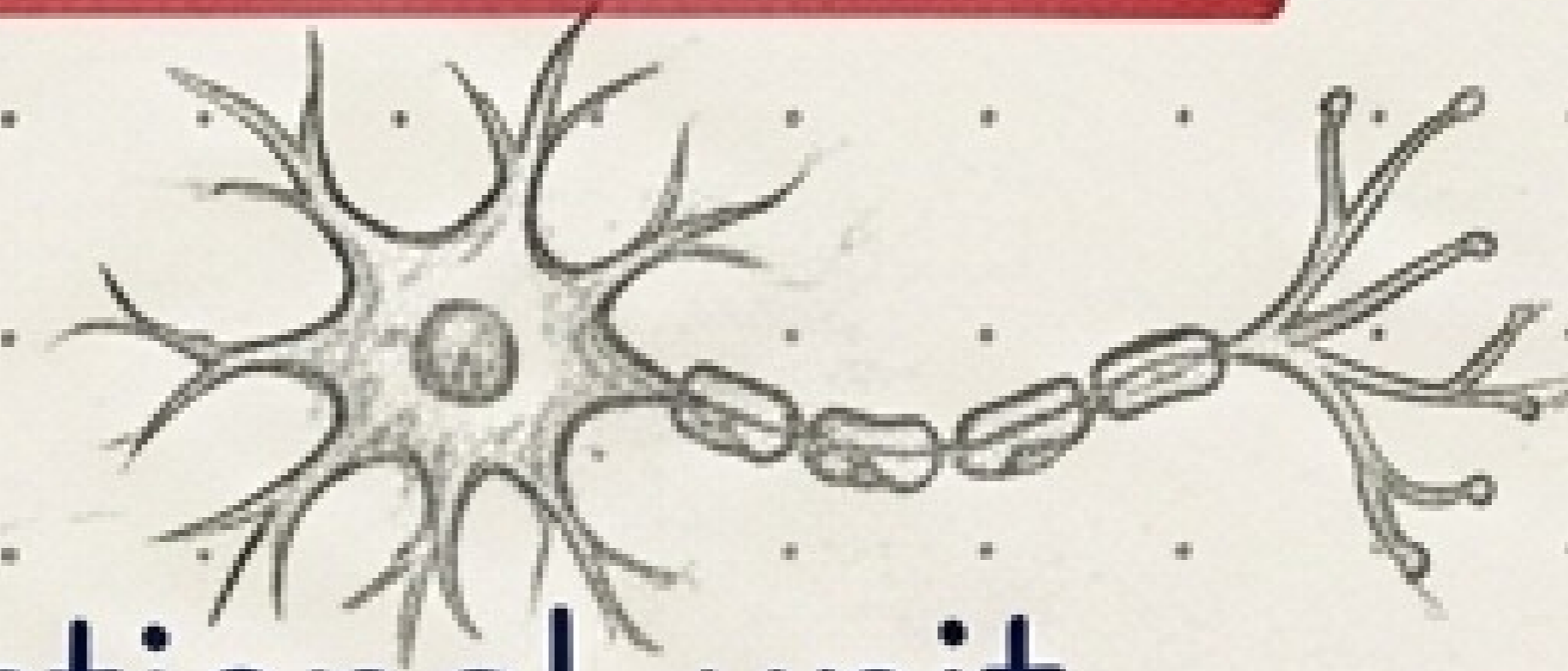
Property of: Grade 10 Biology Student

Subject: Life Sciences

Status: Exam Prep Mode

1. Levels of Organization

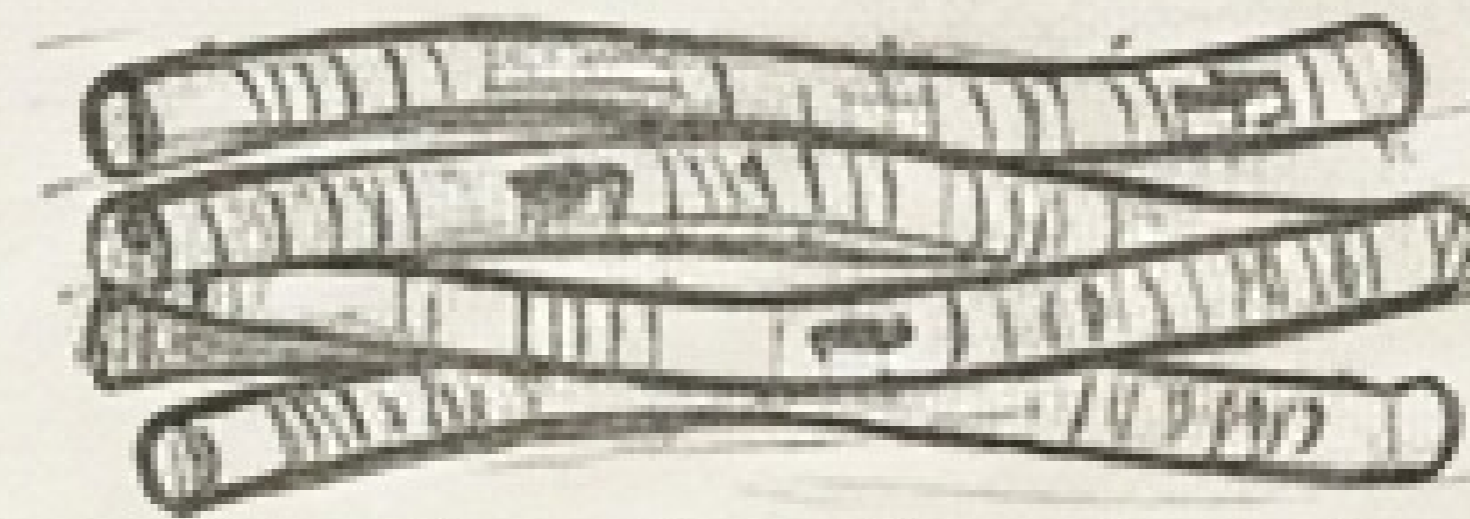
Cell



Nerve Cell.

Basic structural & functional unit.

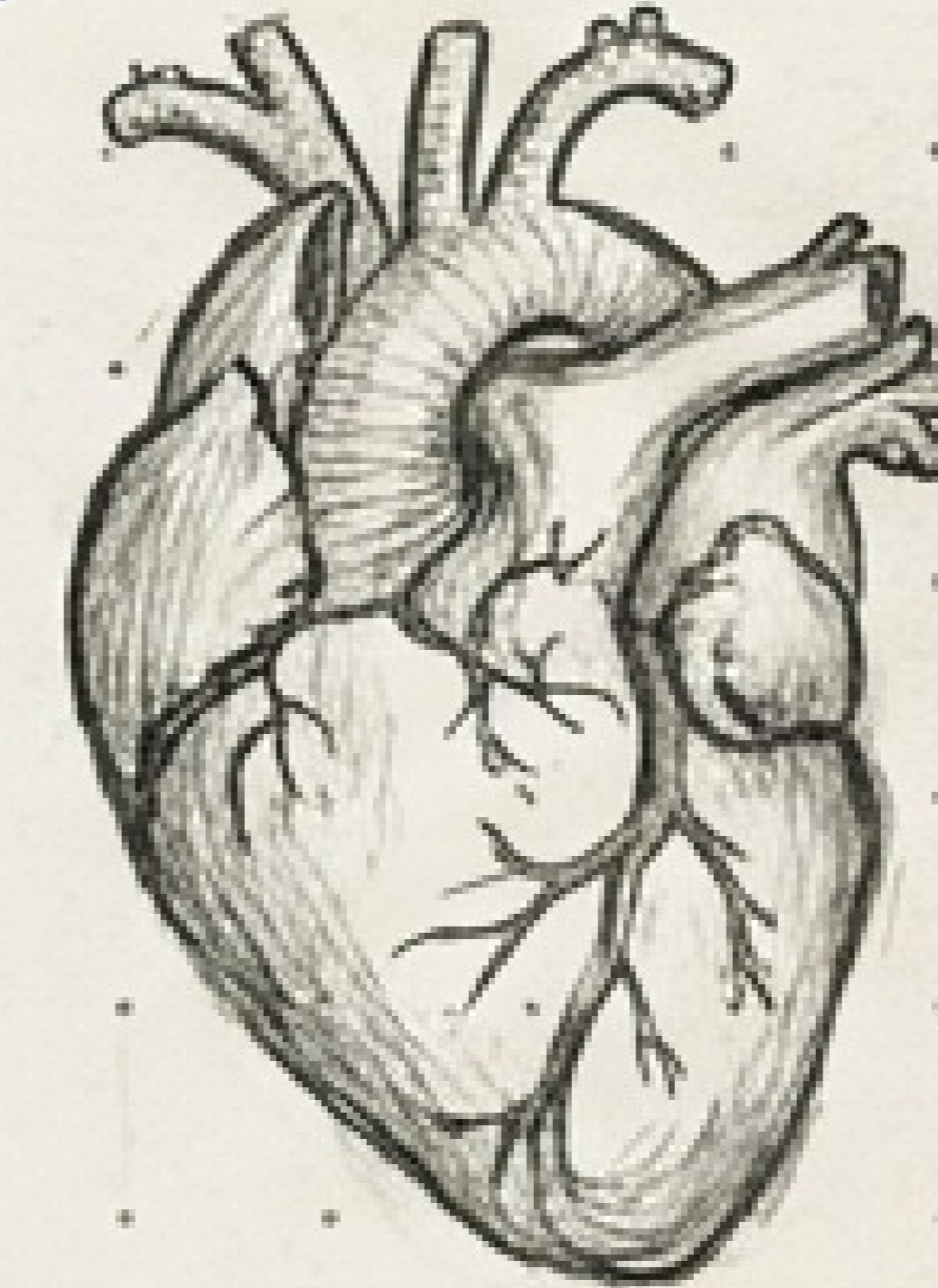
Tissue



Muscle Tissue

Group of similar cells performing a function.

Organ



Heart

Group of tissues.

Organ System

Group of organs working together (e.g., Digestive).

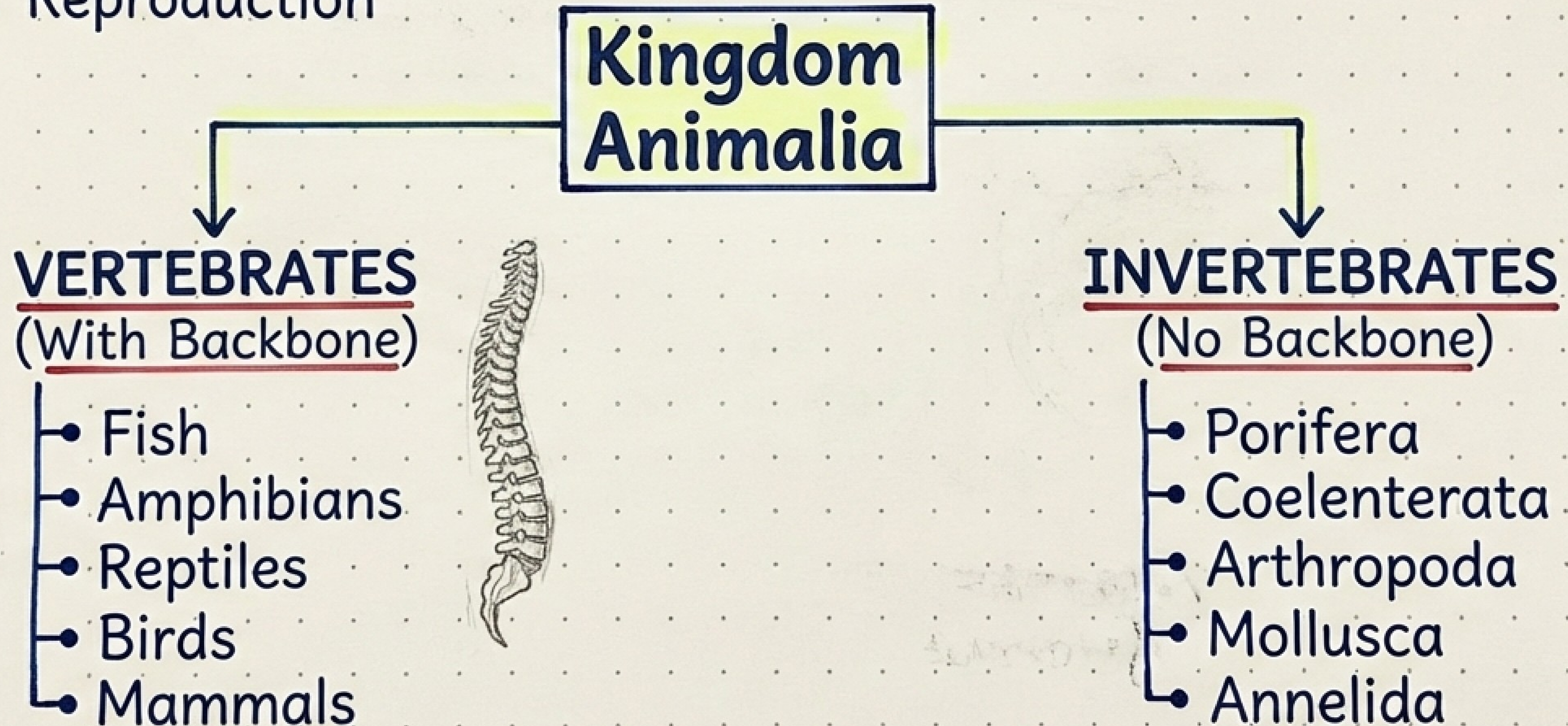
Organism

The complete living being.

Remember: It's a hierarchy!
Smallest → Largest.

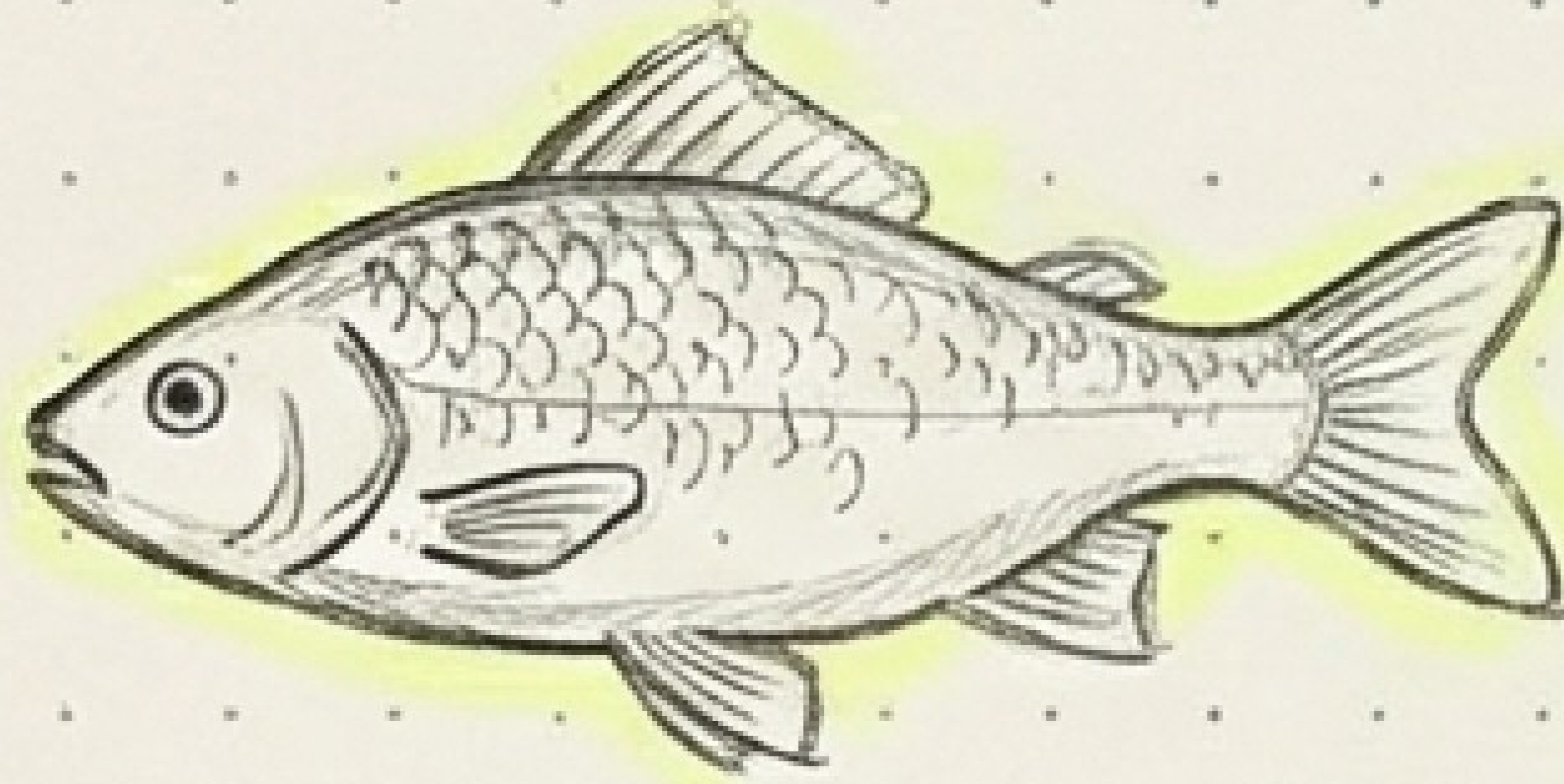
2. Classification of Animals

- Scientific Basis for Sorting:
 - Presence/Absence of Backbone
 - Presence/Absence of Backbone
 - Body Symmetry (Bilateral/Radial)
 - Body Cavity (Coelom)
 - Mode of Reproduction
 - Habitat



3. Body Forms & Adaptations

Streamlined



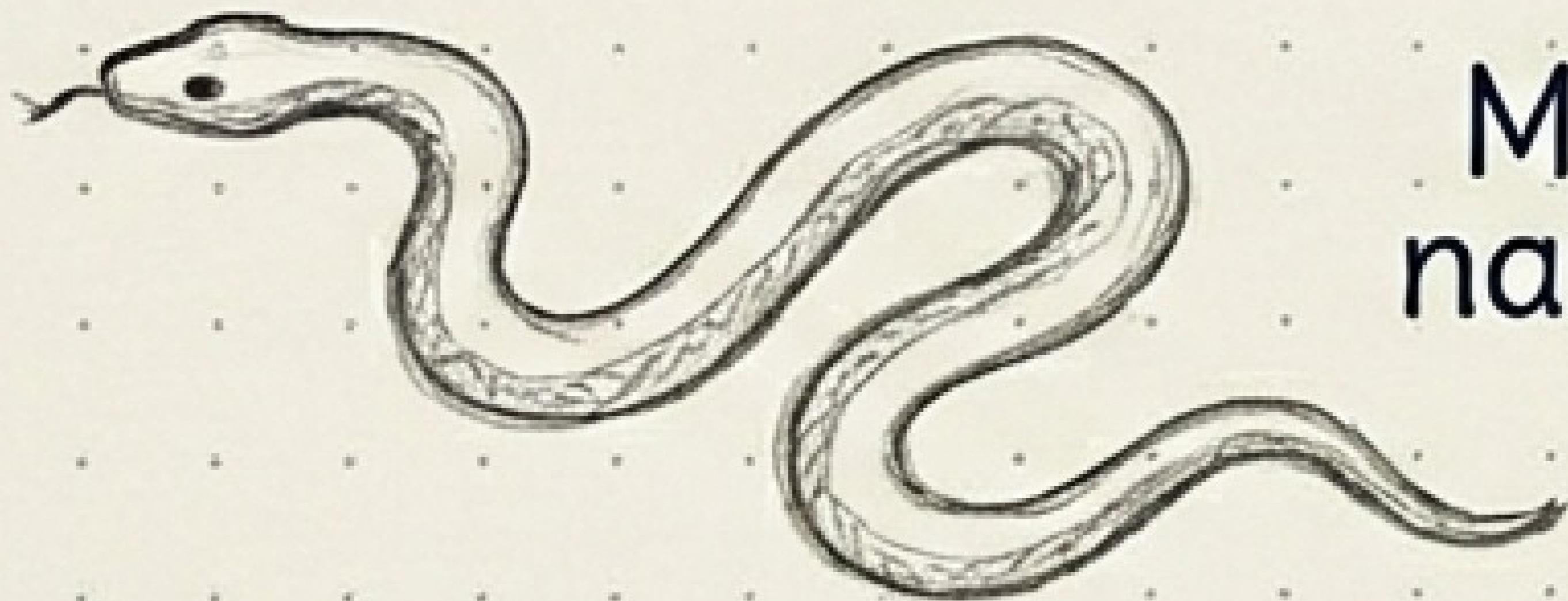
Reduces water resistance (Fish).

Fusiform



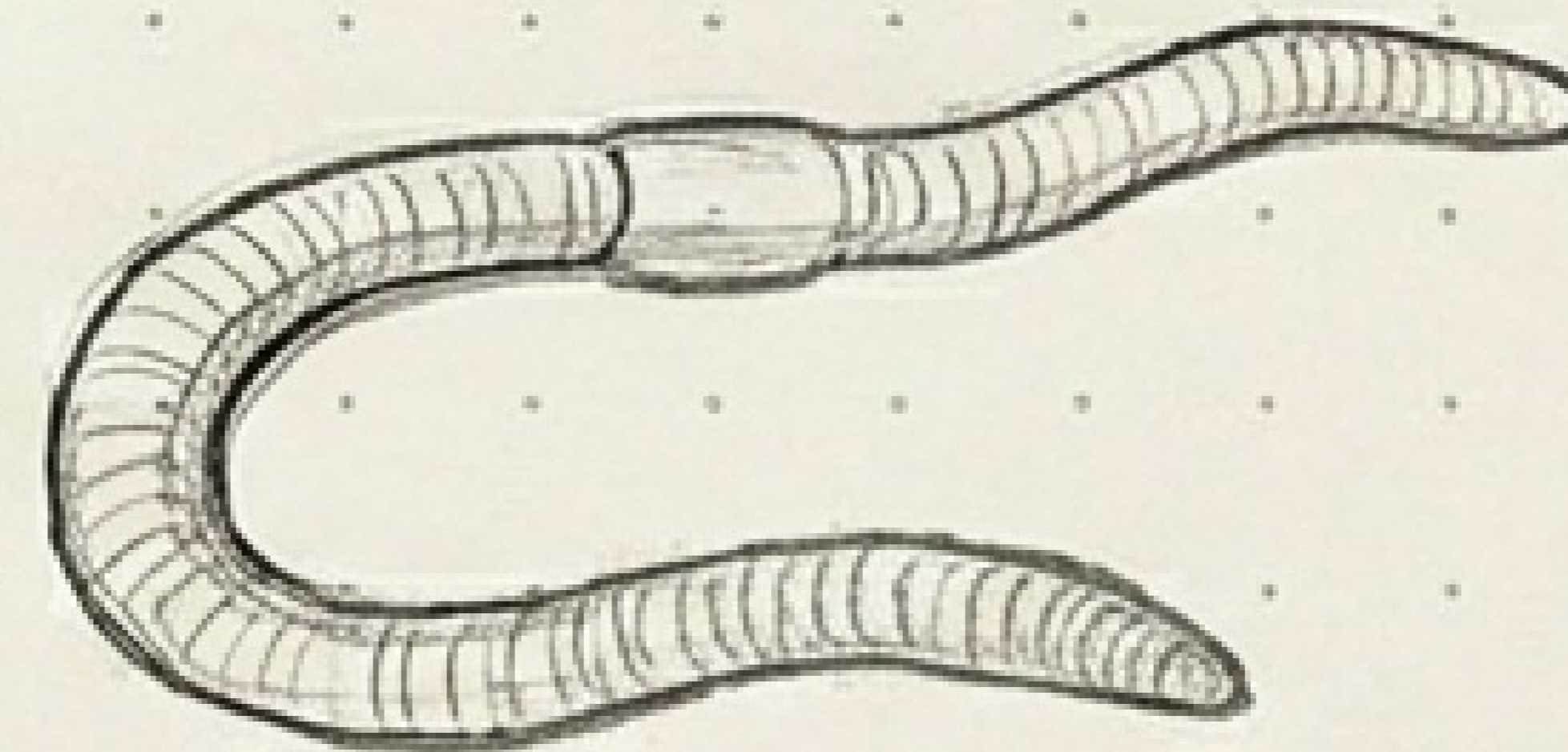
Helps in flying (Birds).

Cylindrical



Movement in narrow spaces.

Flattened






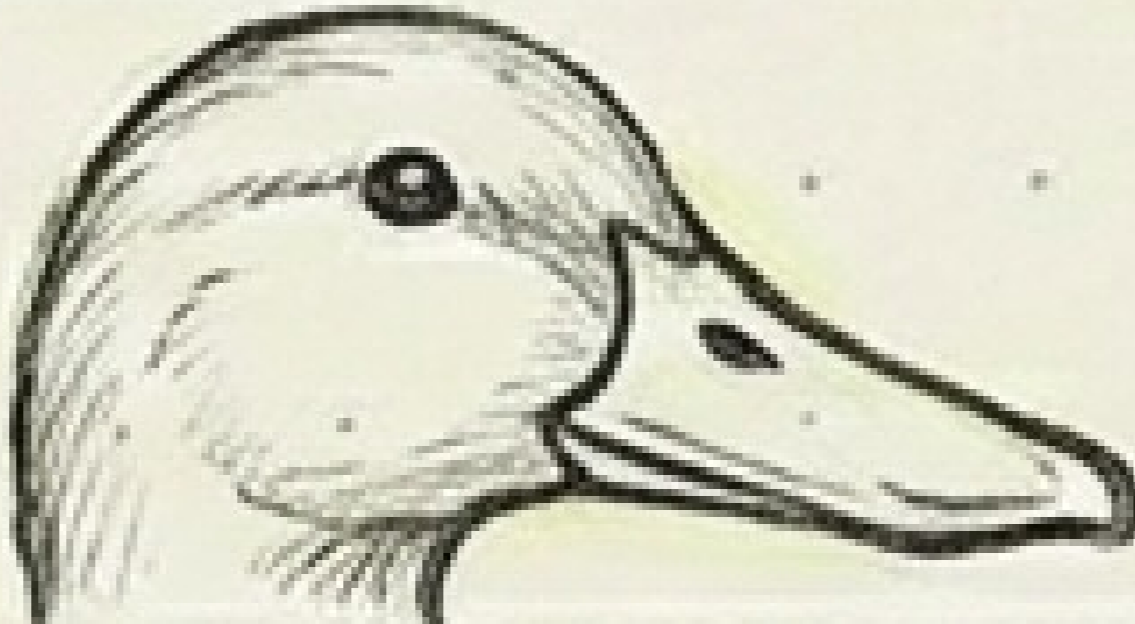
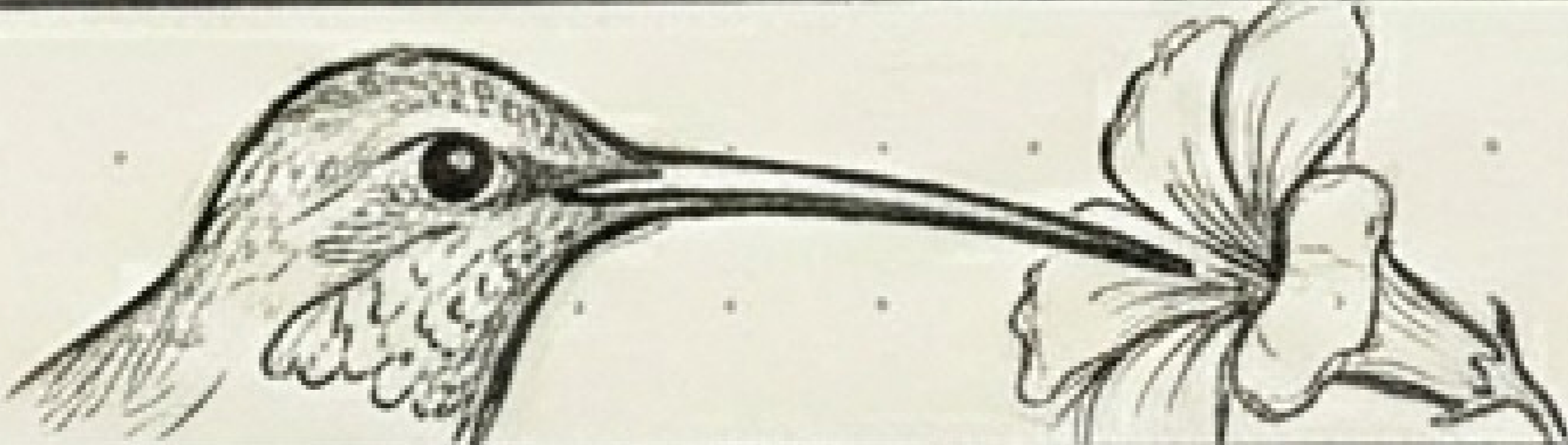
Burrowing in soil.

Key Adaptations:

- **Water Life:** Gills for respiration
- **Land Life:** Lungs for breathing
- **Cold Regions:** Thick fur for insulation

4. Bird Beaks: Form follows Function

Beaks are modified for feeding habits to reduce competition & ensure ecological balance.

Shape	Bird Example	Function/Diet
Hooked	 Eagle	Carnivorous (tearing meat)
Conical	 Sparrow	Seed eating (cracking shells)
Chisel-like	 Woodpecker	Boring into wood
Broad & Flat	 Duck	Filter feeding
Long Tubular		Nectar feeding

5. Human Skeletal System

Fact: 206
Bones in the
adult body!

Skull
Protects Brain

Rib Cage
↳ Protects Heart & Lungs

Vertebral Column

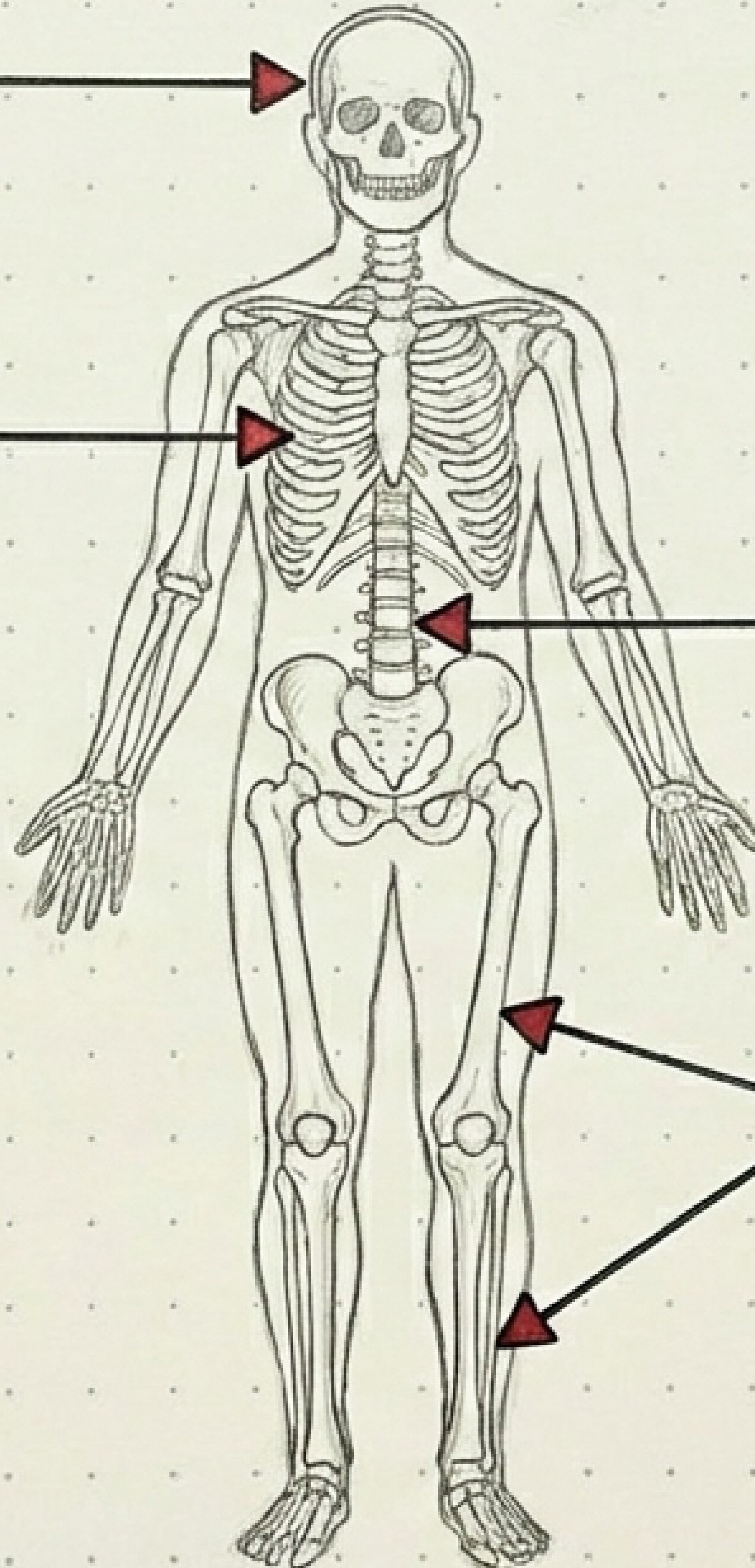
↳ Protects Spinal Cord

Limbs

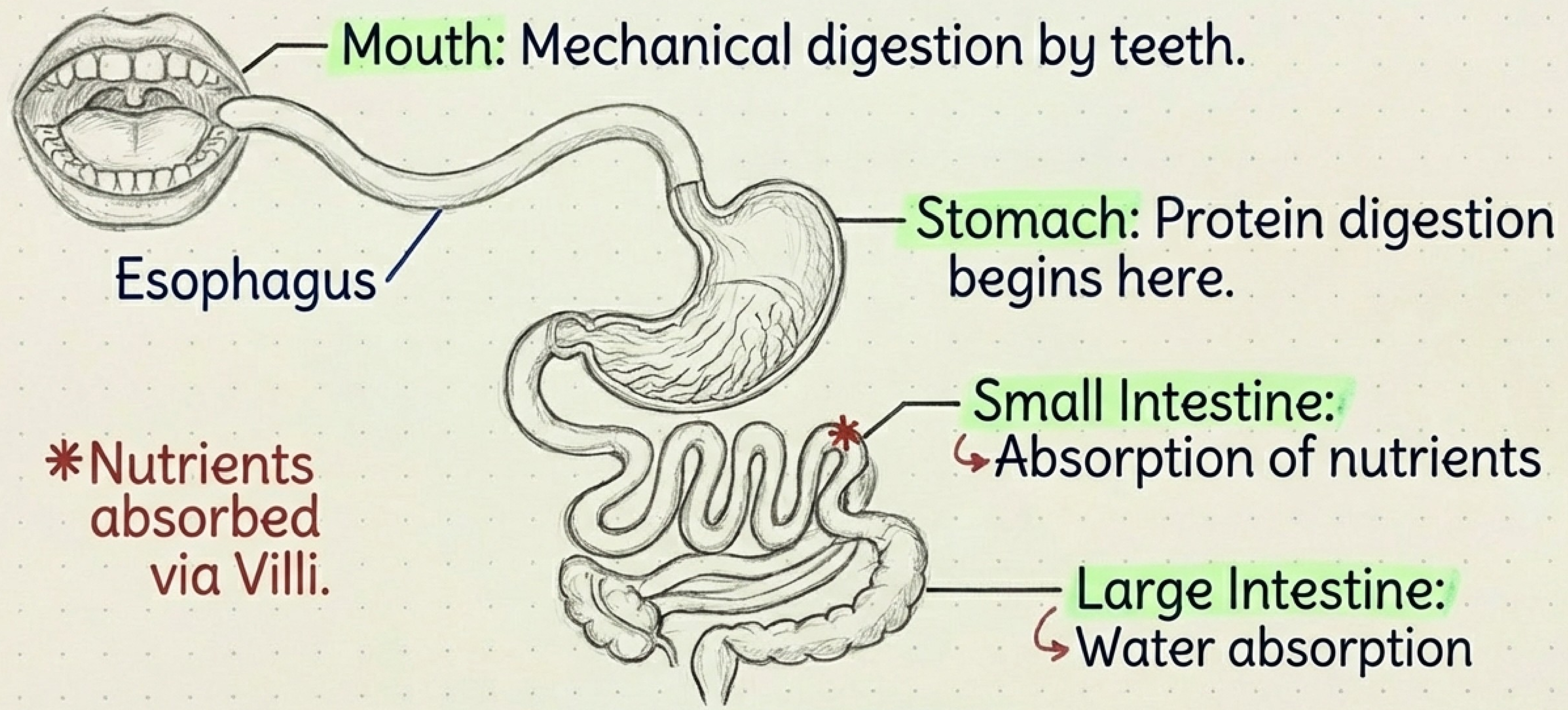
↳ Enable Movement

Major Functions:

1. Support
2. Protection
3. Blood cell formation
(occurs in Bone Marrow)

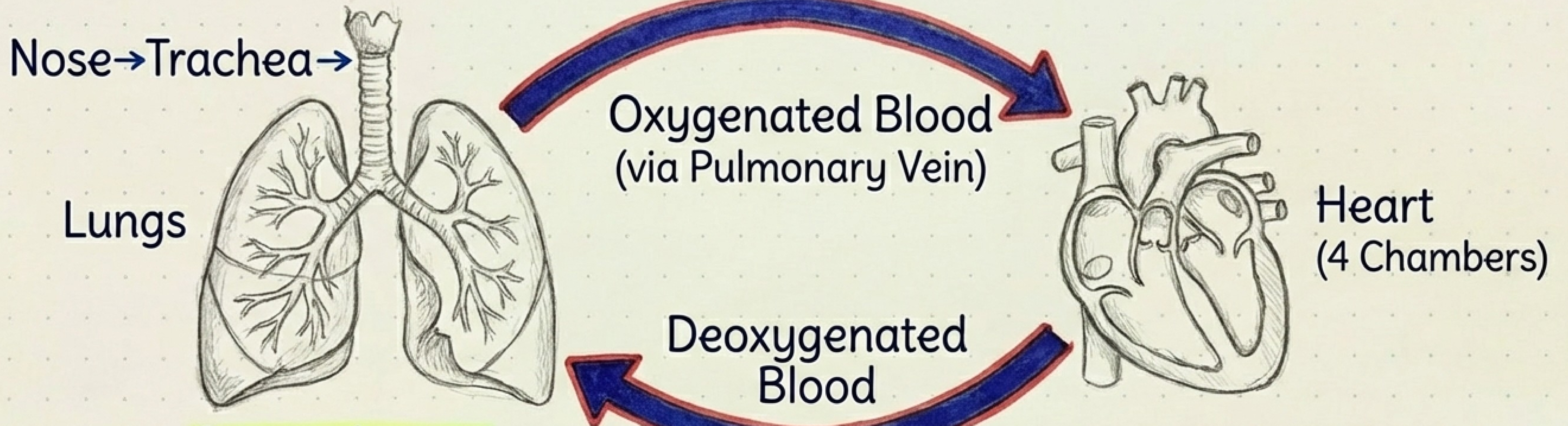


6. Human Digestive System



Goal: Converts food into absorbable nutrients.

7. Respiratory & Circulatory Loop



Gas exchange happens in the Alveoli.

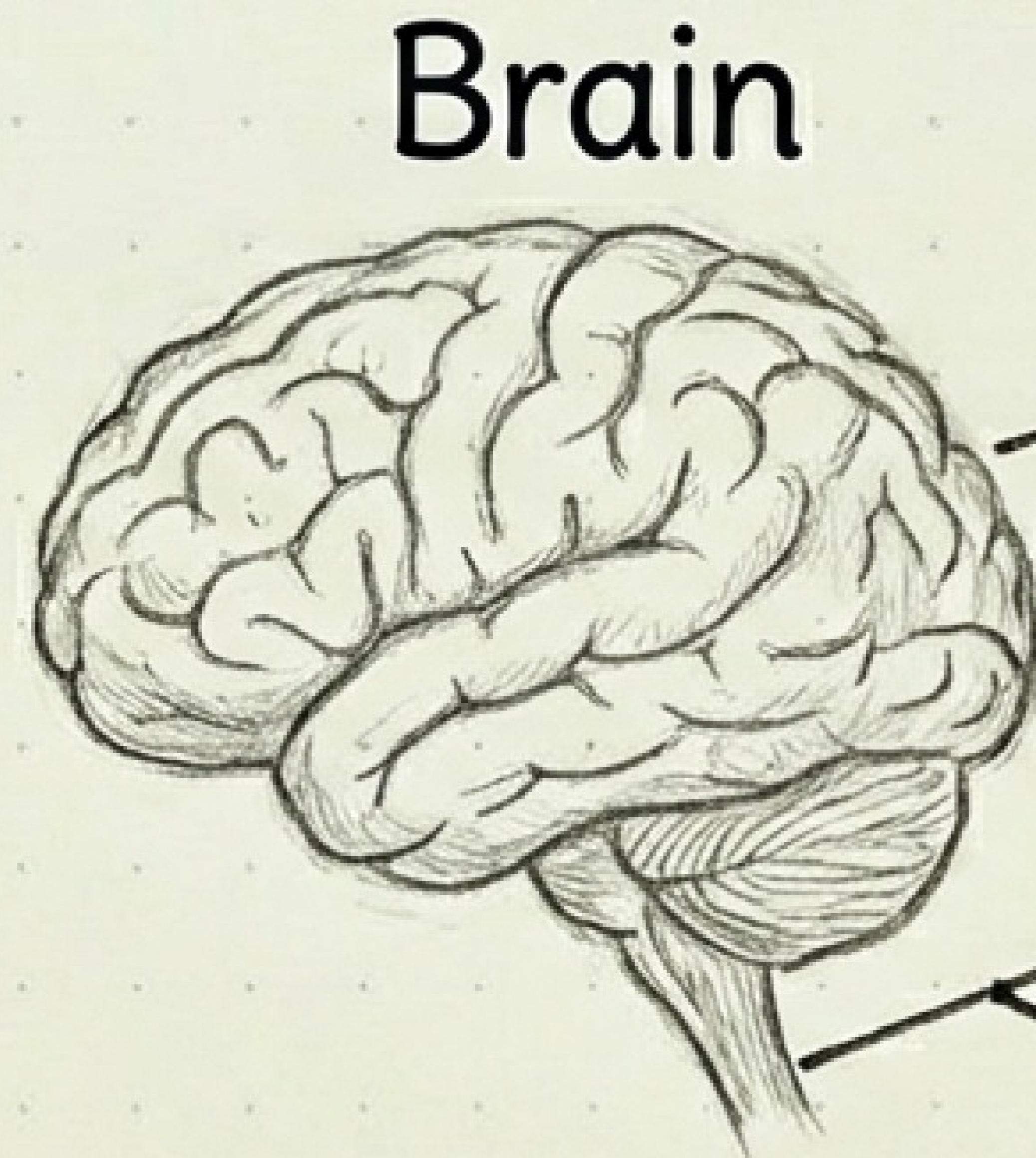
Arteries: Carry Oxygenated Blood (O_2).

Veins: Carry Deoxygenated Blood.

These systems work together to keep cells fueled!

8. Nervous System (The Control Center)

Coordination



Brain

Reflex Action

Spinal Cord

Nerves

The Hardware

Functional unit = Neuron

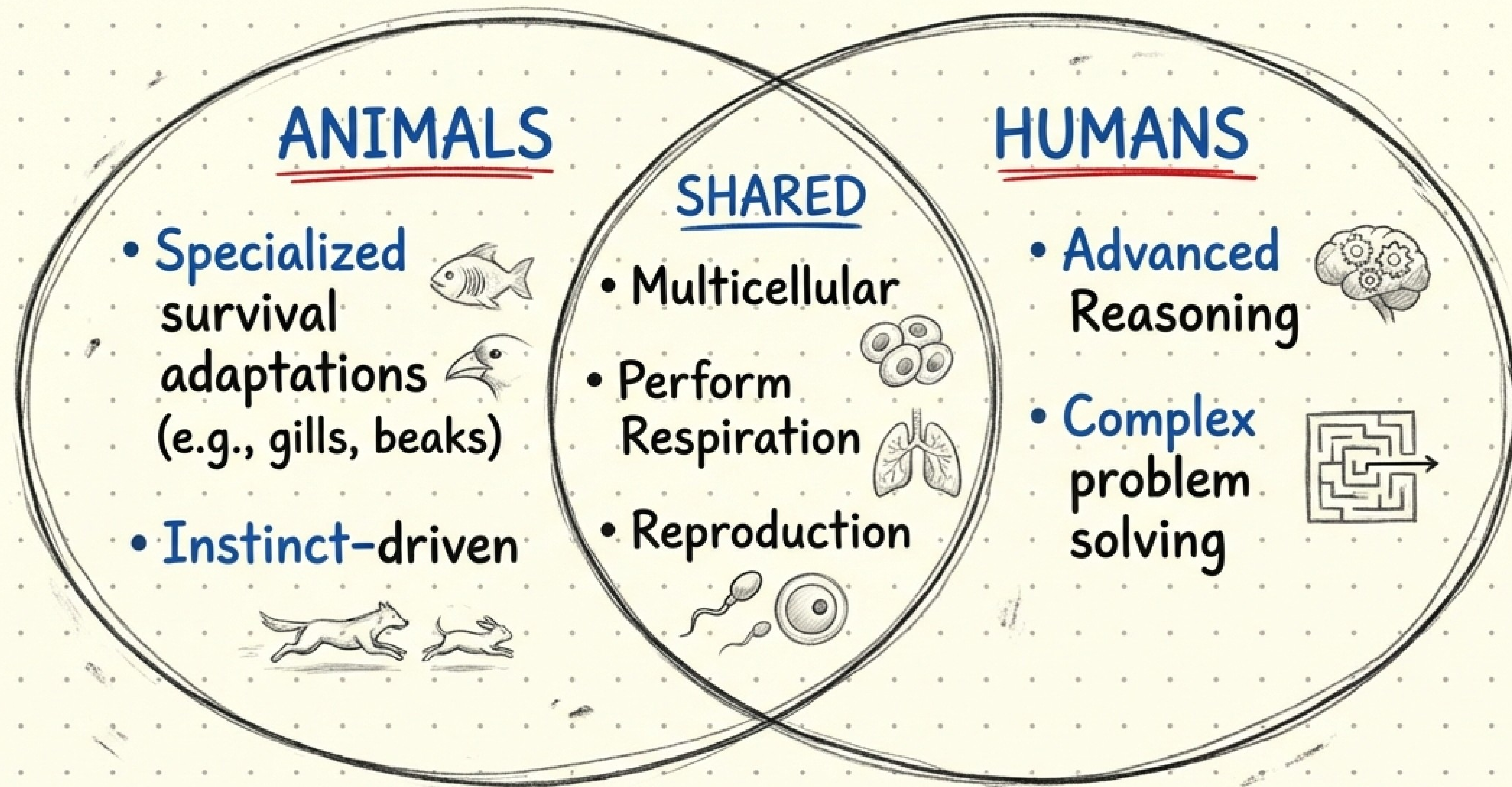
Memory

Thinking



Reasoning

9. Humans vs. Animals



Biologically similar, mentally distinct.

10. Quick Quiz: Test Yourself!

1. Which part of the small intestine absorbs nutrients?
2. Which animals are warm-blooded?
3. What does bone marrow produce?
4. Which beak shape cracks seeds?
5. What is the functional unit of the nervous system?

Answers: 1. Villi | 2. Birds | 3. Blood cells | 4. Conical | 5. Neuron

