



CHAPTER 9

Sponges, Cnidarians, and Worms



Section 1: What is an animal?

- _____ that feed on other organisms
- STRUCTURE- levels of organization of cells
 1. Cells- basic unit of animal structure
 2. Tissues- many cells make up a particular tissue
Example- bone, muscle, nerve
 3. Organ- group of different tissues
Thigh bone contains bone, nerve, and blood tissue
 4. Organ Systems- group of organs working together
Humans have 11 body systems

- FUNCTIONS of ALL animals:

1. Obtain _____
2. _____
3. Move
4. Reproduce

Animals are able to perform these functions because of particular

-
- Behavior or physical characteristic that allows organism to survive



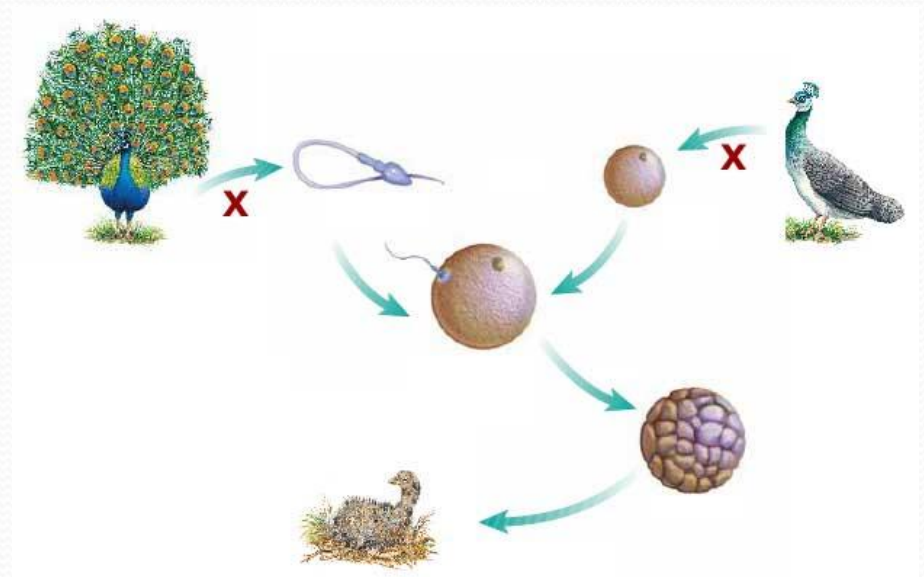
Special Adaptations

- The lion's archetypal roar is used to communicate with other group members and warn intruders of territorial boundaries.
- Long, retractable claws help the lion to grab and hold prey.
- The species' rough tongue helps it to peel the skin of prey animals away from flesh and flesh away from bone.
- Loose belly skin allows the African lion to be kicked by prey with little chance of injury.

Types of Reproduction

_____ Reproduction

two sex cells- sperm and
egg
Fertilization- joining of the two
cells



_____ Reproduction

Single organism produces identical
offspring

EX: Sea Anemones



Classification of Animals

- 1.5 million species
- _____ major phyla
- Classified according to _____ criteria:

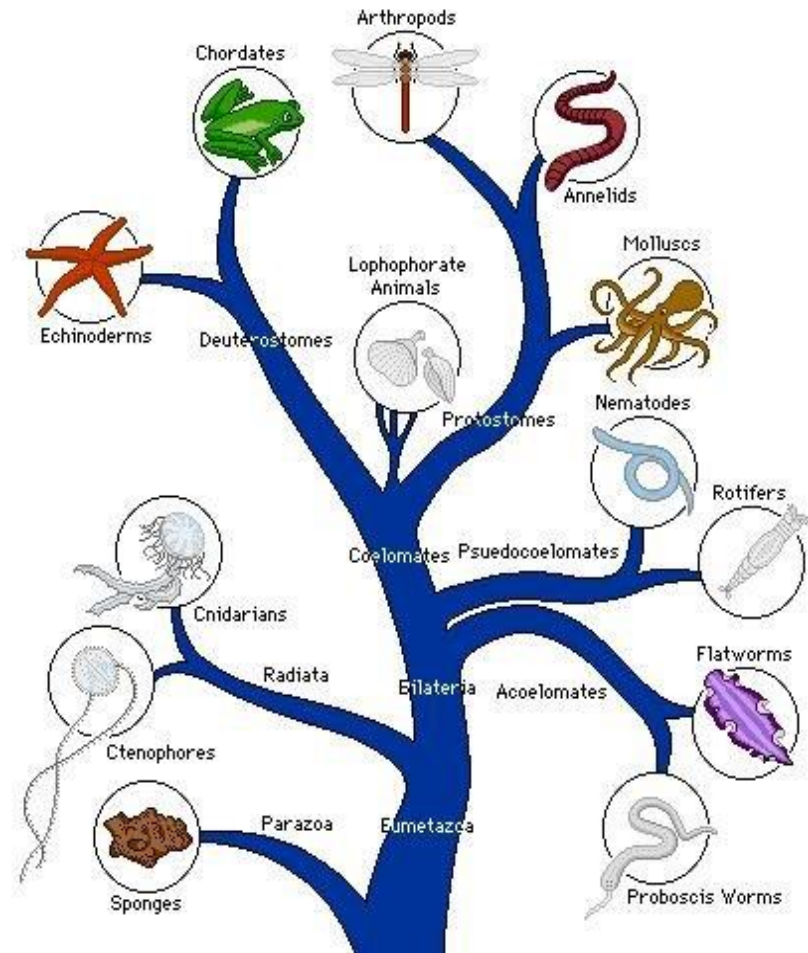
1. Body structure

Vertebrate- with backbone;

1 phylum

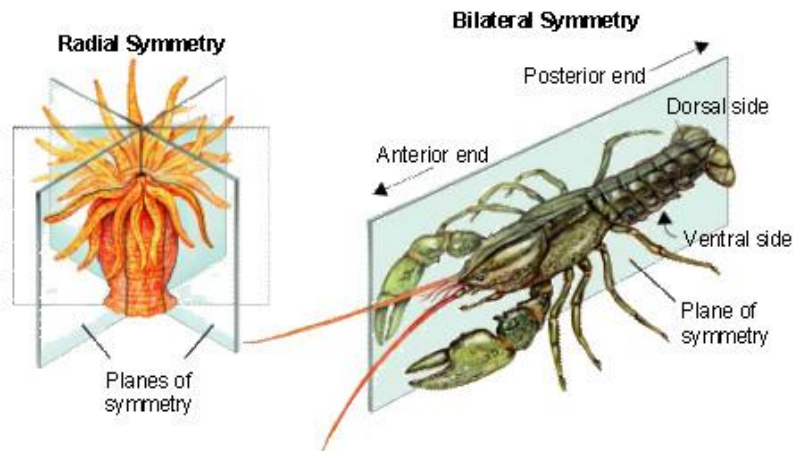
_____ - without backbone 97%
of animal kingdom

2. Development throughout the life cycle
3. DNA



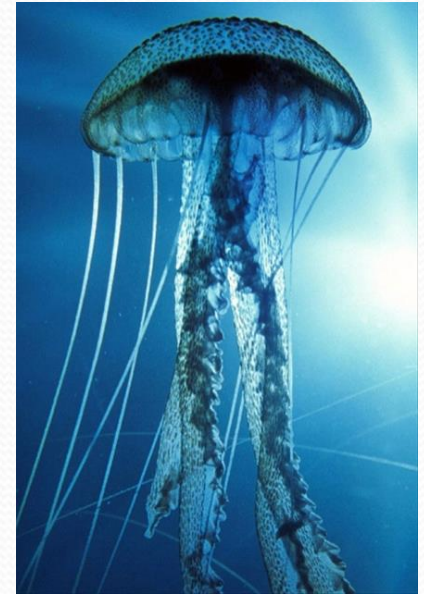
Section 2: Animal Symmetry

- Symmetry- balanced arrangement of parts
- Types of symmetry:
 1. _____ symmetry
One line that divides an object into mirror-like halves
 2. _____ symmetry
Have many lines that all go through one central point



Animals with Radial Symmetry

- Sea stars, jellyfishes, sea urchins
- _____ distinct front or back ends
- _____ live in water
- Do not move very fast
 - Some stay in one spot
 - Others creep along the bottom
 - Some moved by water currents



Animals with Bilateral Symmetry

- _____
- Larger and more complex than radial sym organisms
- Streamlined body for quicker movement
- _____ in front end
- Adaptations to obtain food and avoid enemies



Section 3: Sponges and Cnidarians

- Sponges
 - Found in oceans, freshwater lakes and rivers
 - Adults are attached to hard surfaces underwater
 - Water currents responsible for:
 - Carrying food and oxygen to sponge
 - Taking away waste products
 - Reproduction and offspring transport



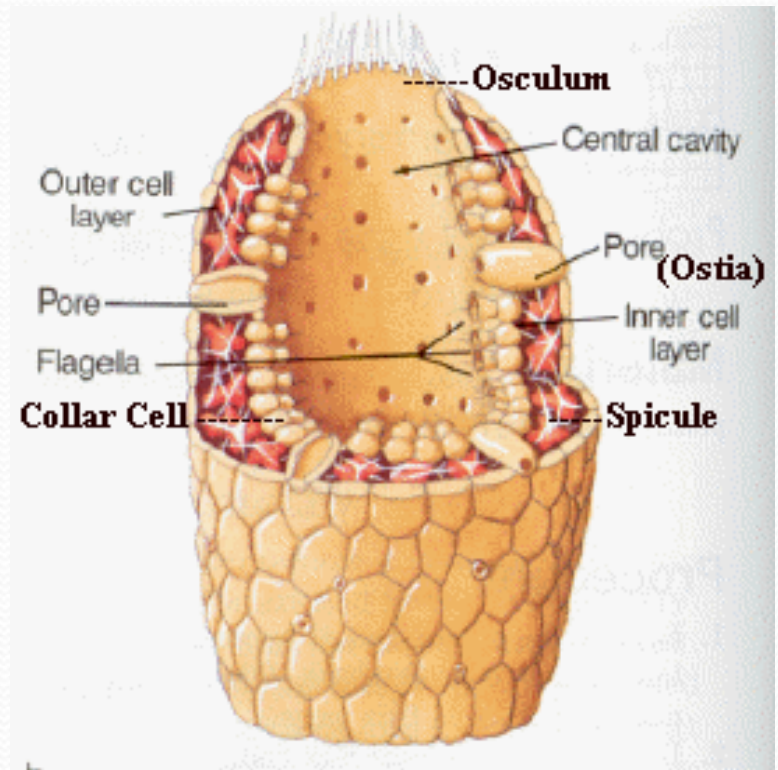
Sponge- Body Structure

- _____
- _____ tissues or organs
- Belong to phylum Porifera (“having pores”)
 - Pores for material transport
- Spikes to _____ soft body + _____ against predators



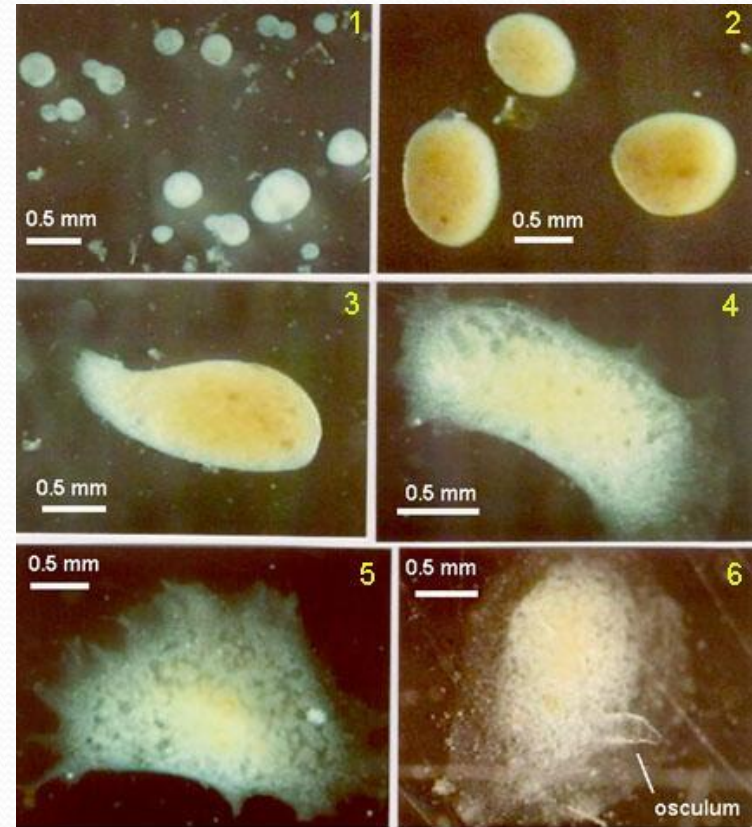
Obtaining Food and Oxygen

- Eat single-celled organisms by _____ that passes through them
- Collar cells line the central cavity and trap food
- Jelly-like cells digest the food



Reproduction

- Able to reproduce both
-
- a. Asexual by budding
 - b. Sexual- no opposite sexes
 - One sponge can produce both sperm and egg cells
 - Sperm cells released into water and float into another sponge where the eggs are fertilized
 - _____ develops
 - Immature form of animal that looks very different from adult



Reaggregation of cells and tissue in a disintegrated freshwater sponge. Small reaggregated masses coalesce into large spheres (panels 1&2). By one week, spheres flatten out and attach to substrate (panels 4-6).

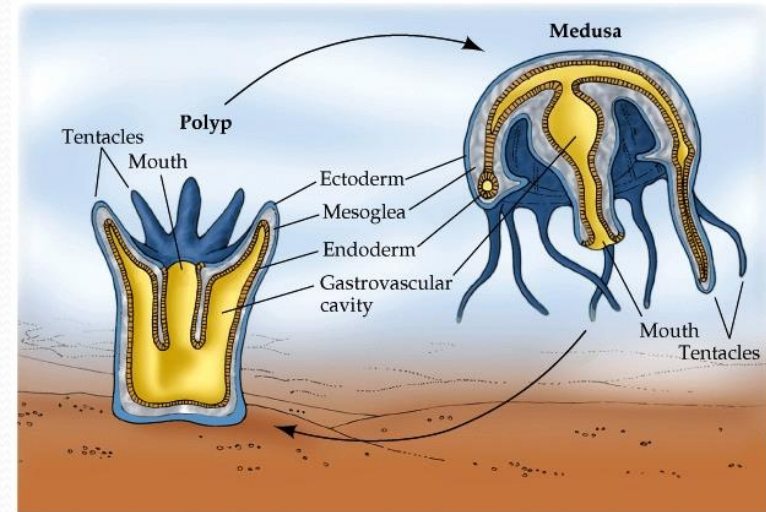
Cnidarians

- Jellyfishes, corals, and sea anemones
- Invertebrates with stinging cells to:
 - Capture food and bring into central cavity
 - Defend themselves
- Obtaining Food
 - Use _____ to obtain food
 - Use tentacles to pull prey into its mouth



Cnidarians- Body Structure

Characteristic	POLYP	MEDUSA
Radial symmetry		
Central Hollow Cavity		
Tentacles with stinging cells		
Body plan	Vase-shaped	Bowl-shaped
Structure location	Mouth open at _____	Mouth opens _____
Example	Sea anemone	jellyfish



Movement and Reproduction

- Cnidarians can move to escape danger and get food
- Movement directed by _____
- Reproduce both _____
 - Asexual by _____
 - Two ways of sexual:
 - One organism with two sexes
 - Individuals of each sex

Life in a Colony

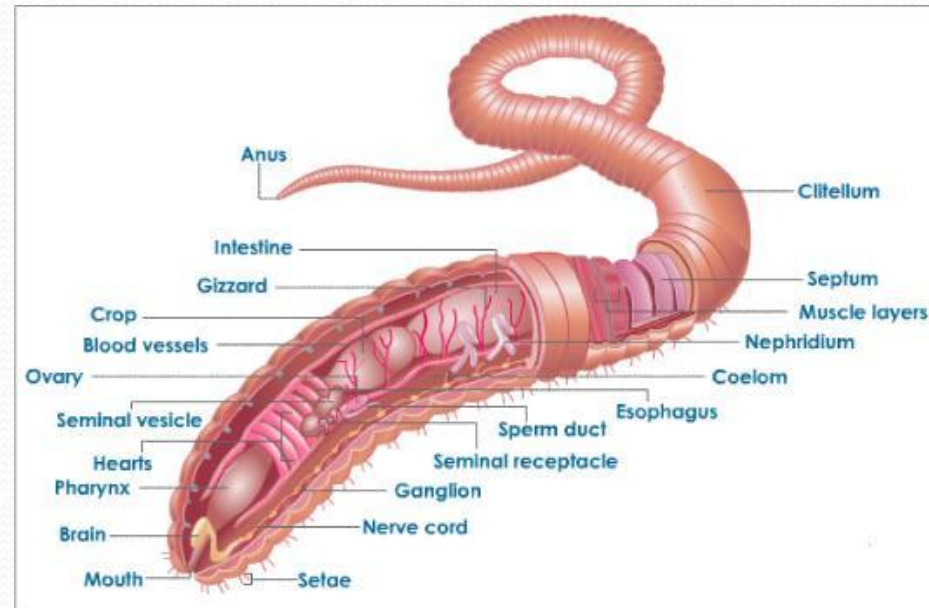
- Colony
 - group of many individual animals living together
- Examples:
 - Stony Corals form a coral reef
 - Portuguese Man-of-War
 - Contain as many as 1,000 individuals functioning as one unit



Section 4: Worms

- _____ with long bodies and no legs
- _____ symmetrical
- Have _____ - knot of nerve tissue at head end
- Can reproduce either

-
- Asexual by:
 - Having both sex organs
 - Breaking into pieces
 - Sexual by fertilizing eggs



Classification of Worms

- Divided into **3 major phyla**:
 - Flatworms (Platyhelminthes)
 - Roundworms (Nematoda)
 - Segmented worms (Annelida)



Flatworms

- Flat and soft as jelly
- Tapeworms, planarians, flukes
- Size- microscopic up to 10-12 meters long
- **One Opening Digestive System**
- Some act like parasites living off of host organisms
- Rarely kill hosts



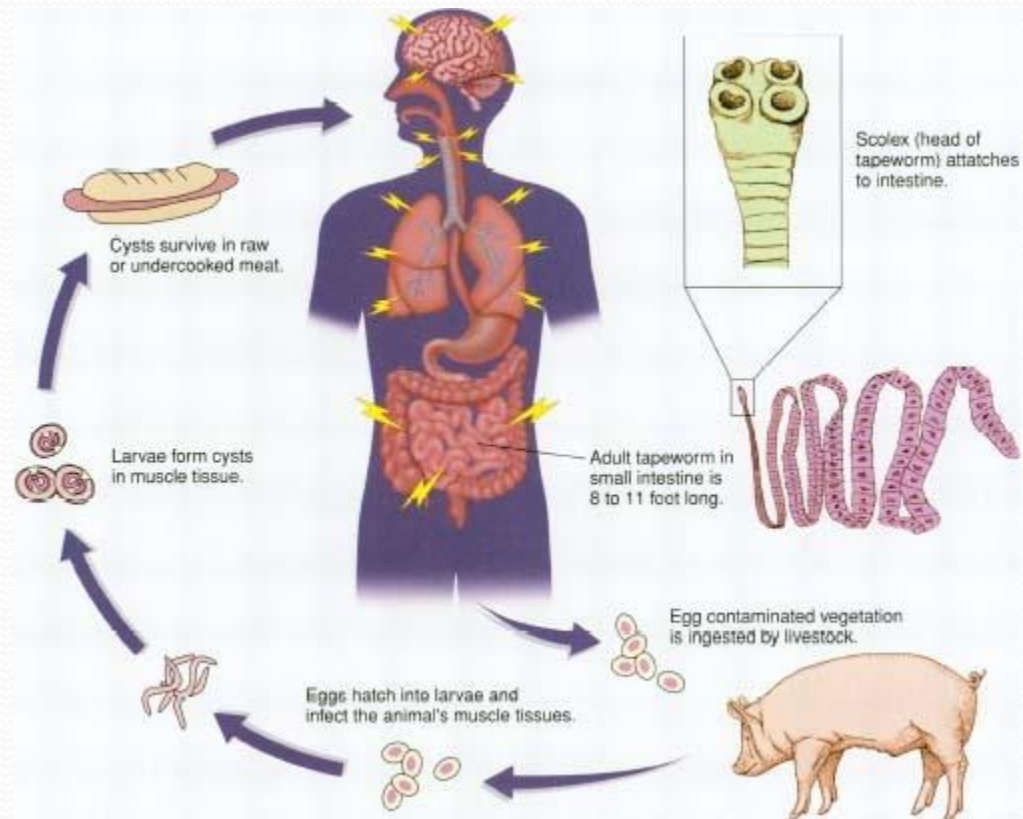
Example of Flatworm: Planarian



- Free-living flatworm
- Obtaining Food-
 - _____ - feed on dead or decaying material
 - Will also attack smaller organisms
- Eat like vacuum cleaners
 - Glides onto food and slides a feeding tube into organism
 - Digestive juices release via tube and into organism
 - Break down food and then is sucked up into planarian
- Have _____ to detect light and cells to pick up odors

Example of Flatworm: Tapeworms

- Parasitic flatworm
- Some able to live inside a human host
- Able to _____ in a lifetime



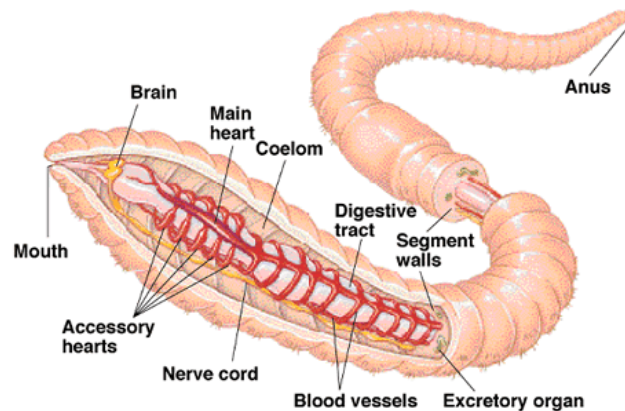
Roundworms

- Some free-living and some parasites
- Cylindrical bodies
- Efficient _____ Digestive system
 - a tube that opens at both ends
 - Food enters through mouth + exits through the anus
 - Process occurs in 3 orderly steps
 - Food broken down by digestive juices
 - Digested food is absorbed into animal's body
 - Wastes are eliminated



Segmented Worms

- Bodies are made up of linked sections called segments
- Contain nerve cord and digestive tube
- _____
- Contain _____ system
 - Blood moves only inside of blood vessels
 - Blood moves more quickly in this system



Earthworms

- Must live in a moist environment
 - Keeps the skin moist
 - Obtain oxygen from the moisture on the skin

