

Introduction to the Animal Kingdom



Which of these is an “animal”?



Answer: They are all animals!



Characteristics of Animals:

heterotrophic

Eukaryotic

multicellular

lack cell walls.

95% = invertebrates (do not have backbone)

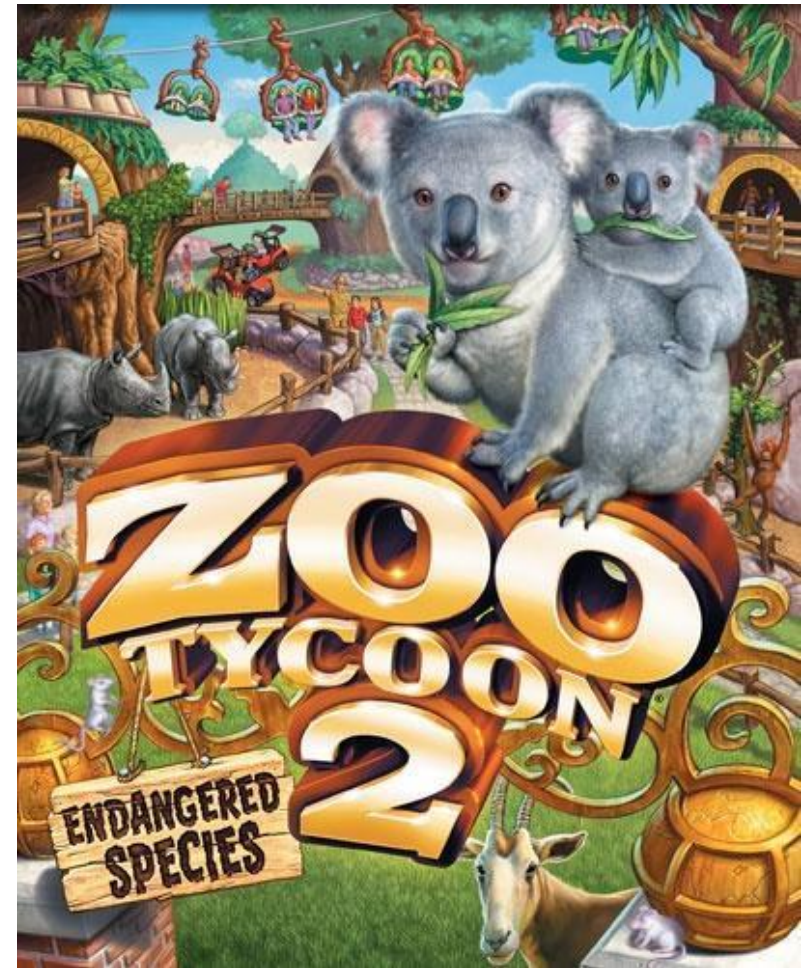
5% = vertebrates (have a backbone)

Biology = study of life

Physiology = Study of the functions of organs

Anatomy = the structure of the organism/organs

Zoology = study of animals



Animal Functions

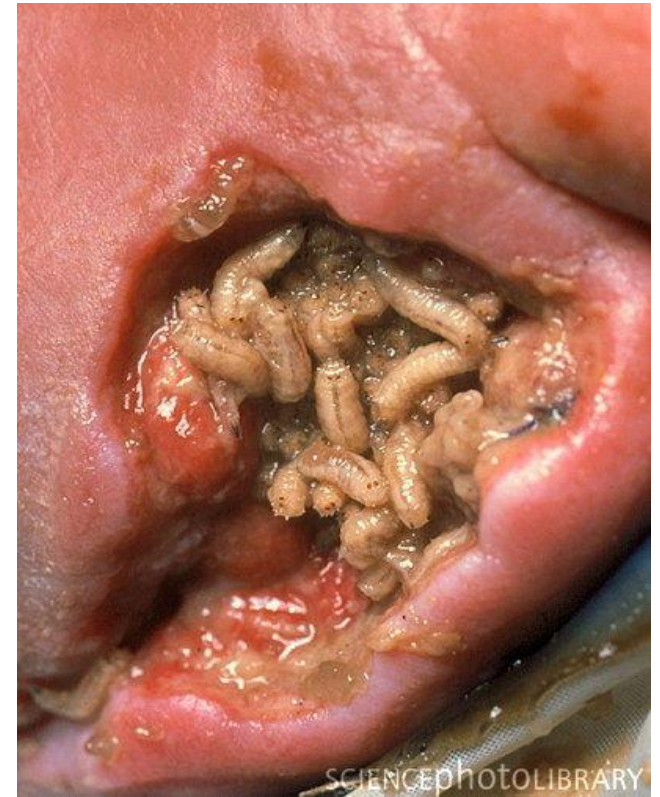
1. Feeding:

Herbivore = eats plants

Carnivore = eats animals

Omnivore = eats plants and animals

Detritivore = eats decaying organic material



Filter Feeders = aquatic animals that strain food from water

Examples: whale
shark, sponges



Parasite = lives in or on another organism
(symbiotic relationship)



Examples:
roundworms,
tapeworms, ticks, lice

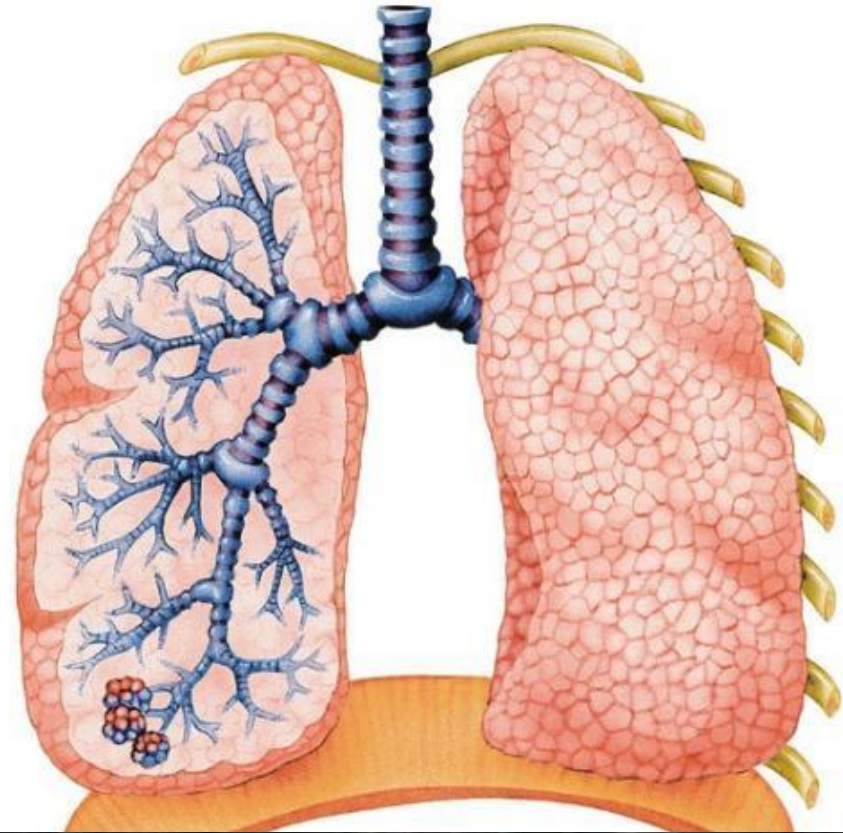


2. Respiration:

Take in O_2 and
give off CO_2

Lungs or gills

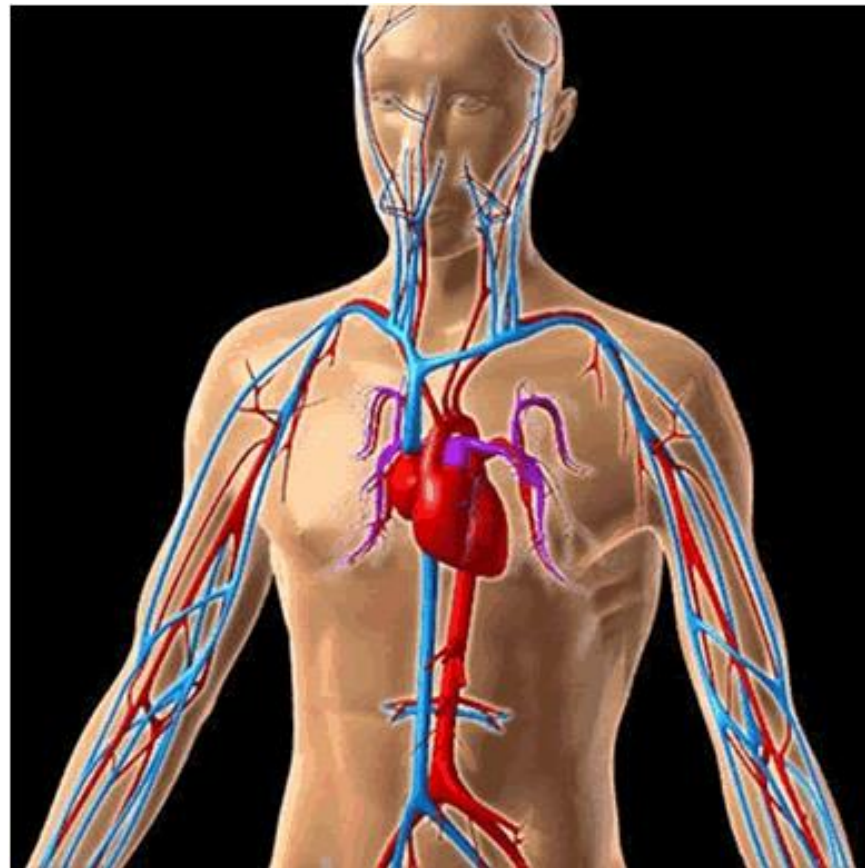
or through skin
(diffusion)



3. Circulation:

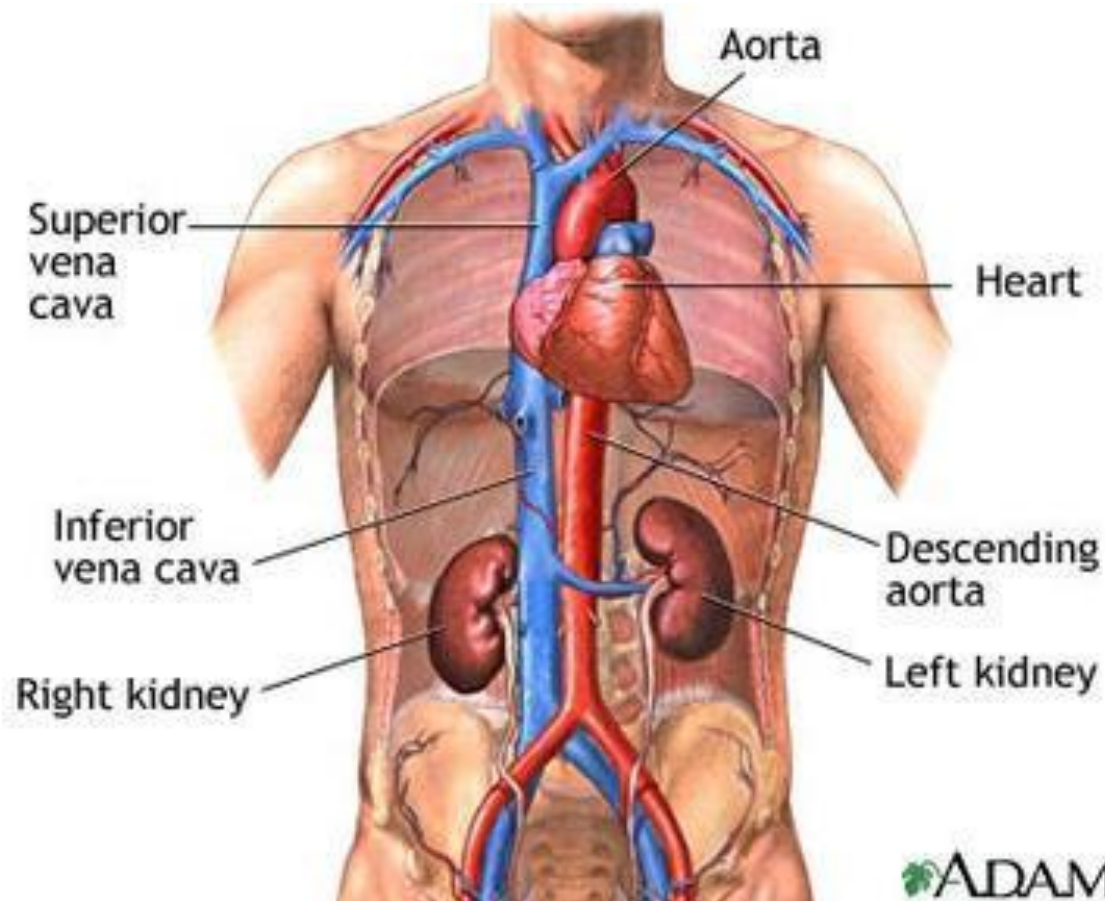
Very small animals rely on diffusion

Larger animals have circulatory system



4. Excretion:

Primary waste product is ammonia



The kidney is the main organ of excretion

5. Response:

Nervous System

Stimulus → Response



6. Movement:

How they move can vary

(swim, crawl, fly, run, slither)

*Some animals don't move at all!



What is the difference between:

Quadrupedal & Bipedal

Terrestrial & Aquatic

Sessile & Motile

7. Reproduction: Most reproduce sexually = genetic diversity

Many invertebrates can also reproduce asexually



Quick Check

1. A basking shark obtains its food by _____
2. An animal that eats plants and other animals is called a(n) _____
3. Any animal that lives on or in another animal and causes harm is called a _____
4. The study of the functions of organs is called _____
5. An animal that feeds on dead or decaying matter is called a(n) _____
6. Animals can respire with lungs, gills, or _____
7. Sexual reproduction increases genetic _____
8. What is the main organ of excretion? _____
9. The study of animals is called _____
10. Responses occur as a result of a(n) _____

What are the seven functions of living systems?

1. Feeding

2. _____

3. Circulation

4. _____

5. Response

6. Movement

7. _____

Body Symmetry

- the body plan of an animal, how its parts are arranged

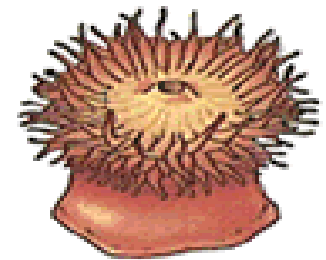
Asymmetry - no pattern (corals, sponges)



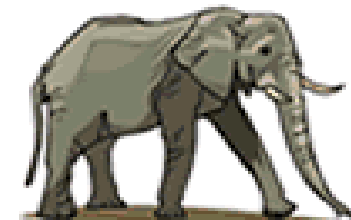
Asymmetrical



Radial



bilateral



Radial Symmetry - shaped like a wheel
(starfish, hydra, jellyfish)





Jellyfish are animals with radial symmetry
They are predators
Some are venomous

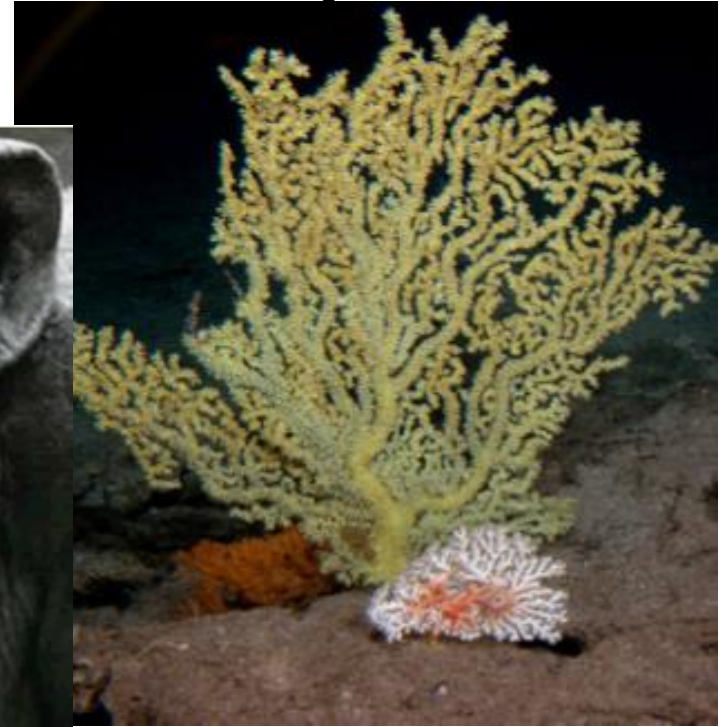
Bilateral Symmetry -

has a right and left side

(humans, insects, cats, etc)



Identify the Symmetry



Cephalization - an anterior concentration of sense organs (to have a head)



Octopus –
member of the
class
Cephalopoda
(head-foot)

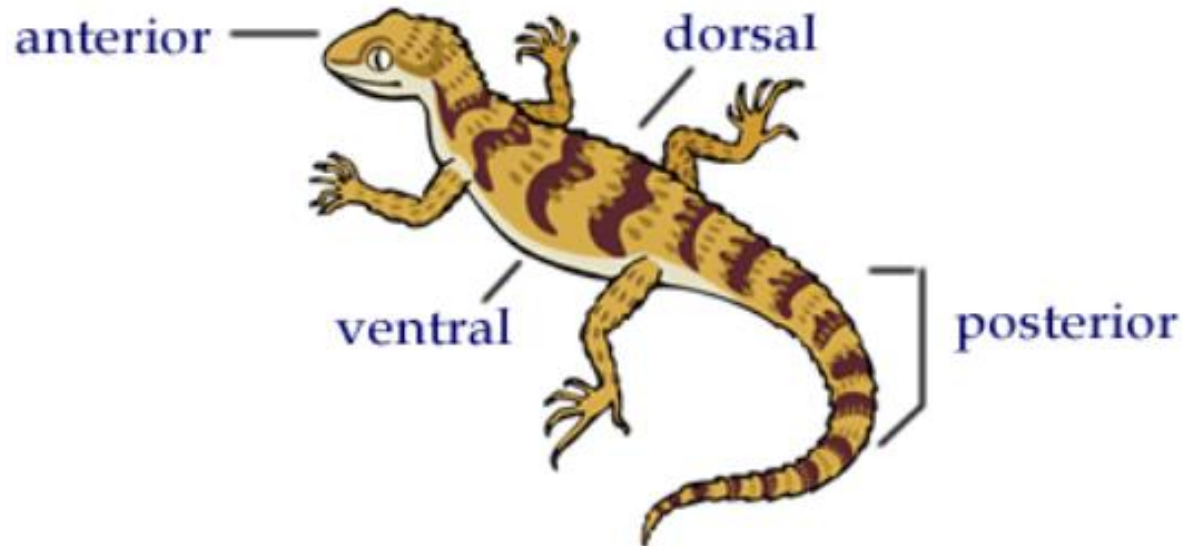
Body Sides

anterior - toward the head

posterior - toward the tail

dorsal - back side

ventral - belly side



Segmentation

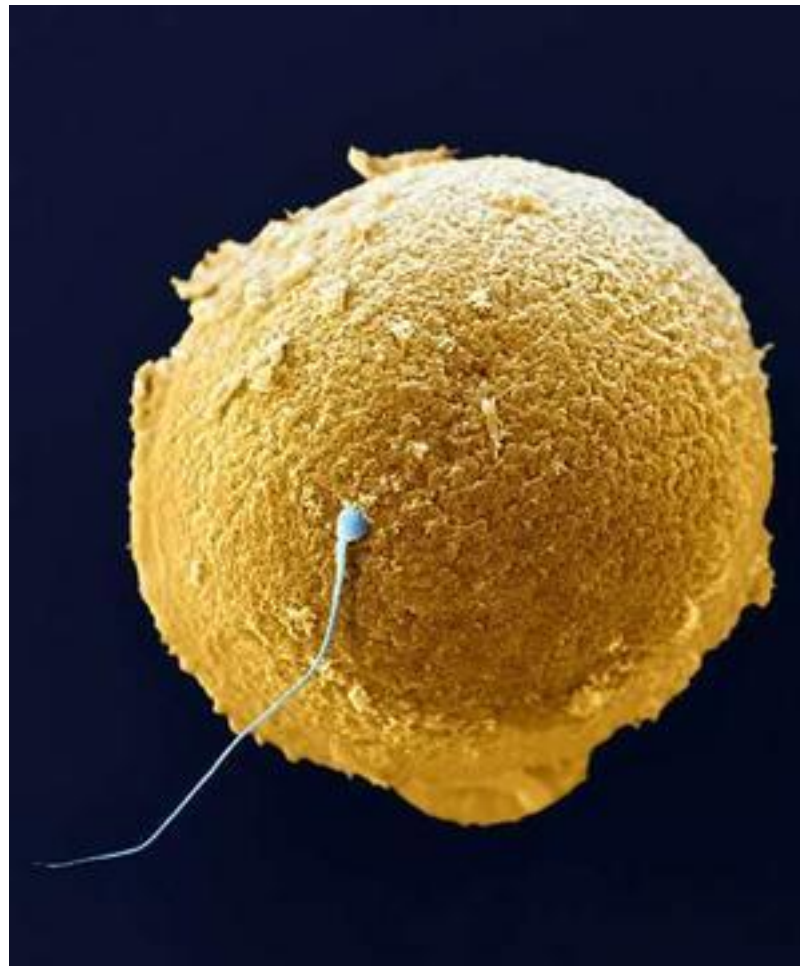
Animals have body segments, and specialization of tissue (*even humans are segmented, look at the ribs and spine*)



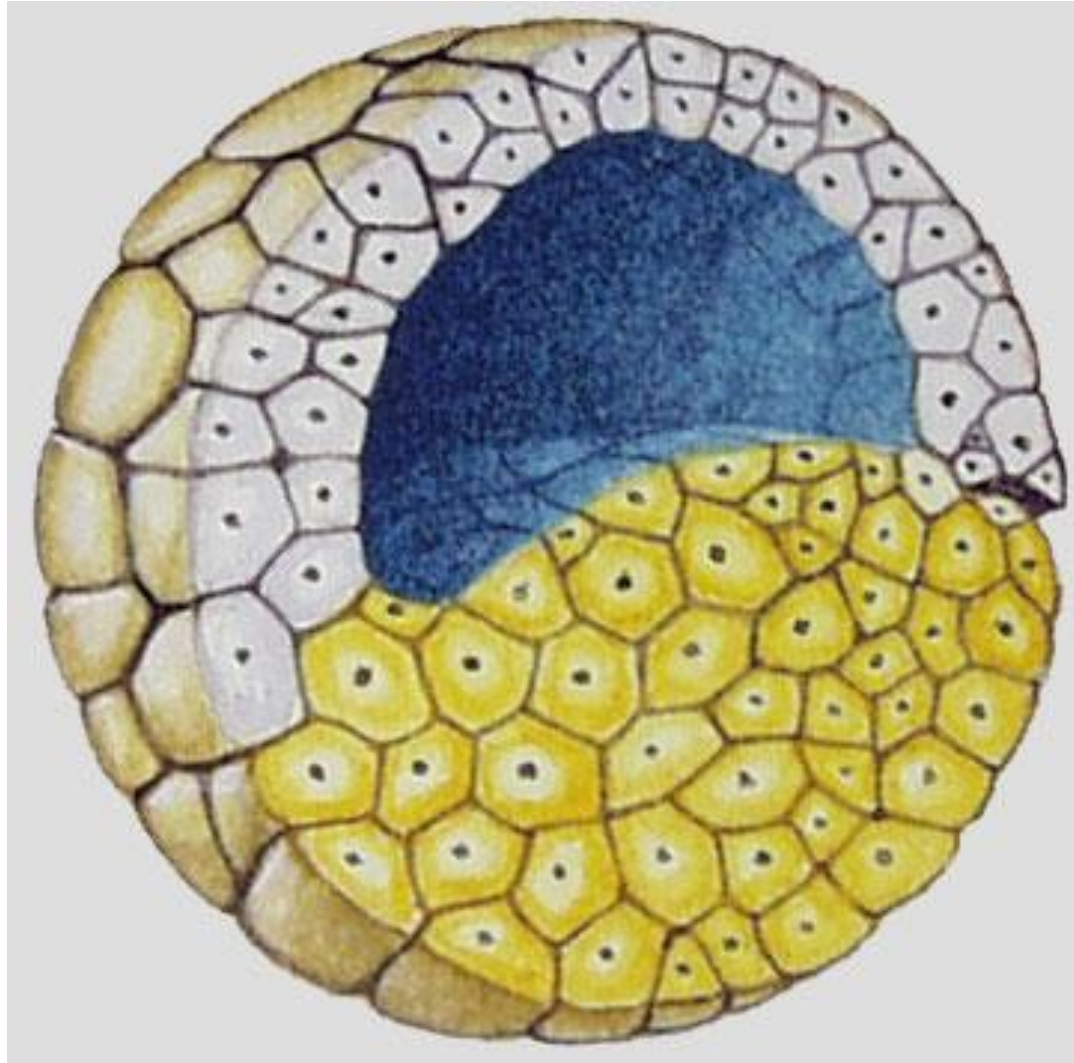
Trends in Animal Evolution

Early Development

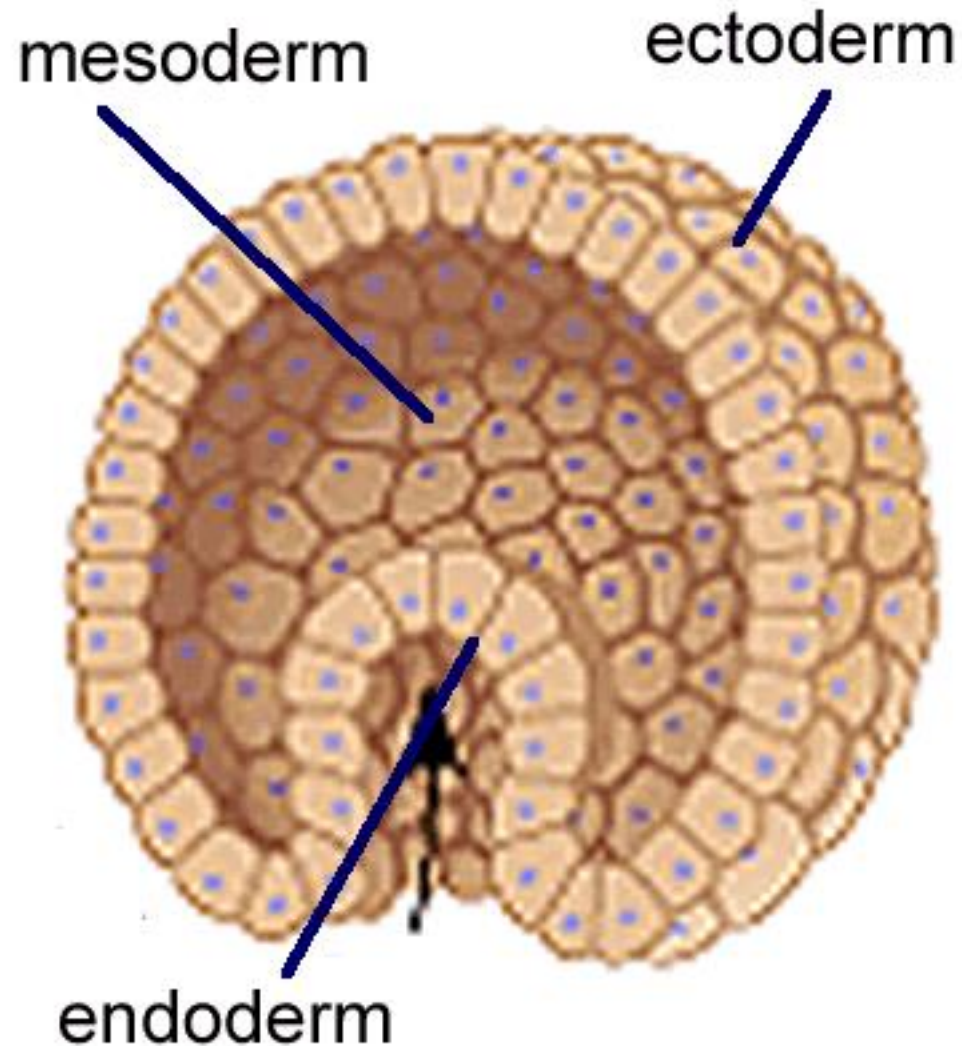
Animals begin life as a **zygote** (fertilized egg)



The cells in the zygote divide to form the **BLASTULA** - a hollow ball of cells

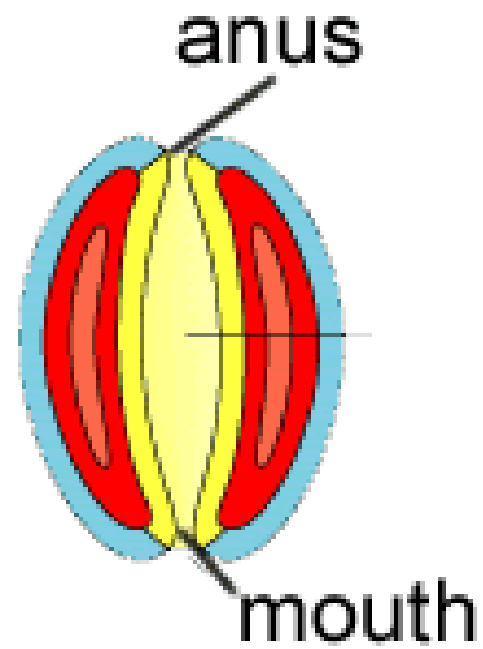
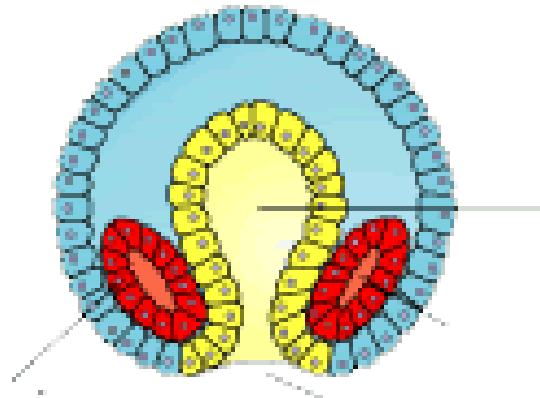


The blastula pinches inward to form three
GERM LAYERS



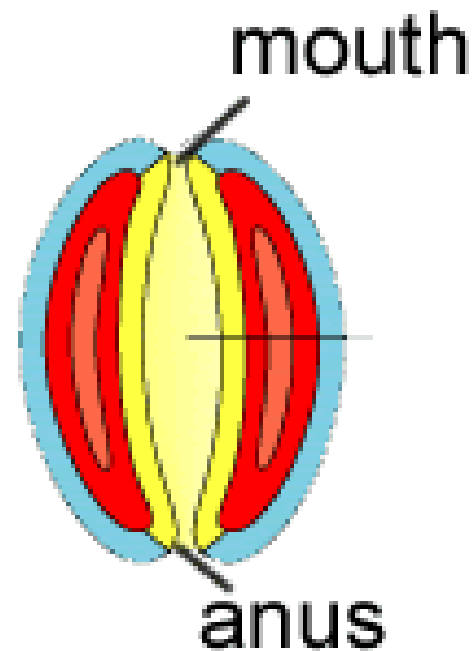
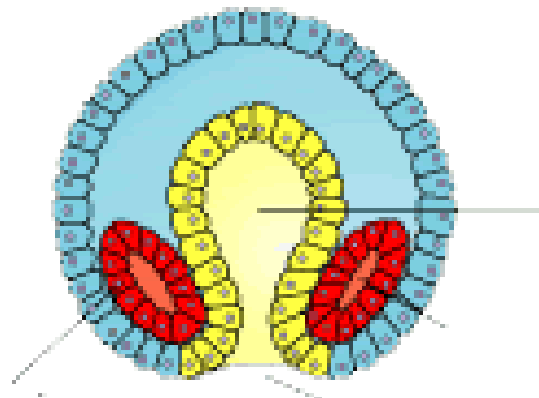
Protostome

MOUTH
FIRST



Deuterostome

ANUS
FIRST



Animal Kingdom Phyla

Phylum Porifera
– sponges



Phylum Cnidaria
– sea
anemones,
jellyfish, hydra



Phylum Platyhelminthes - flatworms



Free-living Planarian

Lives in freshwater
Can regenerate



Parasitic

Tapeworm

Lives in intestines
Food contamination

Phylum Nematoda -
roundworms



Phylum Annelida –
segmented worms



Phylum Mollusca – clams, squid, snails



Phylum Arthropoda – crustaceans, insects, spiders



This is the largest phylum in the animal kingdom and contains the most number of species

Phylum Echinodermata - starfish



Phylum Chordata – includes all vertebrates

