Organization of Living Organisms

cell: basic unit of life

all living things are made up of cells

unicellular organism: life at this level

For multicellular organisms, life is further organiz

tissue: groups of similar cells working together to do a job

muscle tissue, nervous tissue

organ: grps of different tissues working together to do a job

stomach made of lining tissue, muscle tissue, nervous tissue, and outside connective tissue

organ system: grps of organs working together to do a job

digestive system: mouth, esophagus, stomach, small intestine, large intestine, anus

multicellular organism: grps of organ sys working together to make a complete living thing

Animal Organ Systems

1-integumentary sys

outer body covering, protects anims from H_2O loss, excess sunlight, bacterial invasion

integument: outer body covering

skin, nails, hair, scaly skin, fur, feathers

what does planaria have?

2-skeletal sys

gives body a shape, protects internal organ

exoskeleton: outside body

movement is limited, must molt to grow

endoskeleton: inside body

musc on top of skel, can protect bones

Which is more advanced? efficient?

does planaria have this?

3-muscular sys
- allows movemt, works w/skeleton
- longitudinal musc: expand & contract
- circular musc: enlarge diameter, thin
- diagonal musc: twisting
- what kind of movements can planaria make?

4-nervous sys
- allows organism to respond to environmt
- controls & coordinates all other body sys
- brain, spinal cord, nerves, sense organs, antennae, whiskers
- what does planaria have?

5-respiratory sys
- brings in O_2, gets rid of CO_2
- lungs, gills, skin, nose, mouth
- does planaria have this?

6-circulatory sys

takes O2 & nutr to every cell in body, remove CO2 & wastes

heart, bl vessels

open circ sys: blood is not contained in bl ves

heart (pump)---->bl vess---->open body-> oozes back to heart

closed circ sys: blood is contained w/in vess

which is most advanced? more efficient?

what does planaria have? why do they not need this nor respiratory system?

7-digestive sys
- brings in food, breaks down into form body can use, gets rid of solid wastes
- incomplete digest sys: only one body opening
  - 2-way tract, mouth but no anus
- complete digest sys: one way tract
  - mouth--->organs---->anus
- which is more efficient? advanced?
- what does planaria have?

8-excretory sys
- gets rids of metabolic, nitrogenous wastes, regulates water balance in body
- liquid wastes
- kidneys, sweat glands, urinary bladder
- does planaria have this system?

9-reproductive sys
- produces new individuals
- asexual: cloning, one parent, cell division
- sexual: 2 parents, make special cells,
  - recombination of genes, gives variety in population
- hermaphroditic: 2 sexes in one body
  - ovaries, testes, penis, vagina, uterus

for organisms that can do both, when is it best
- to do one over the other?
  - planaria?

10-immune sys
- fights disease
- WBC, lymph nodes, lymph fluid
  - planaria?

11-endocrine sys

- works with nerv sys to control and coordinate other body systems
- makes and secretes hormones
- hormones are chemical messengers that are made in one place, taken by blood to target organ where they have effect
- pituitary gland: master endocrine gland in brain, controls all other endocrine glands
  - thyroid, thymus, ovaries, testes
- all vertebrates have sys, many lower anims, insects
  - planaria?

Which organ system can you live without?

Final terms to know

cephalization: a concentration of nervous tissue at the anterior end of an organism resulting in a definite head
a concentration of nervous tissue (brain), and usually other senses are found there
the most complex organisms show this

regeneration: the ability to regrow body parts
this is different than healing, characteristic of lower anim

segmentation: a repetition of body parts
a characteristic of more complex organisms
do we have this?
examples?

ectotherm: organism that cannot regulate its internal body temp

endotherm: organism that regulates a steady internal body temp