Anatomy & Physiology

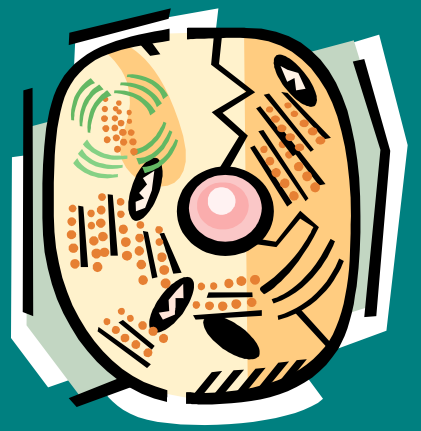
Orientation and organization

Mrs. Wilson

Taxonomy- human classification

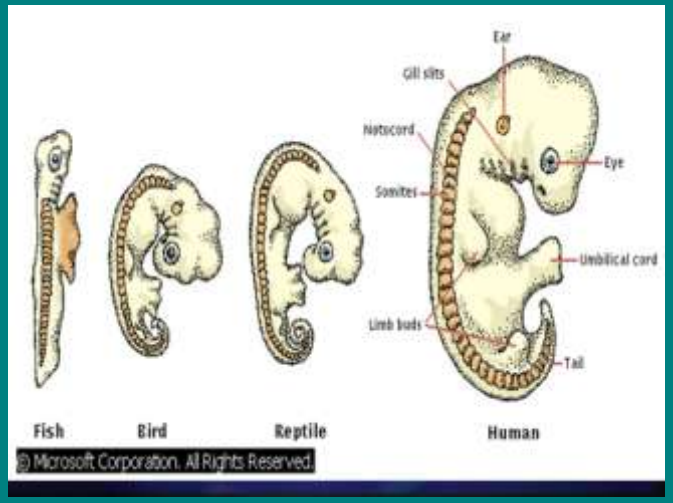
Kingdom – Animalia

- Eukaryotic cells
- No cell walls
- heterotrophs



Phylum chordata

- Fish, reptiles, amphibians, birds, mammals
- Notochord-
  - becomes vertebral column
- Dorsal hollow nerve cord
  - Brain / spinal cord
- Pharyngeal pouches
  - eustachian tube



Subphylum vertebrata

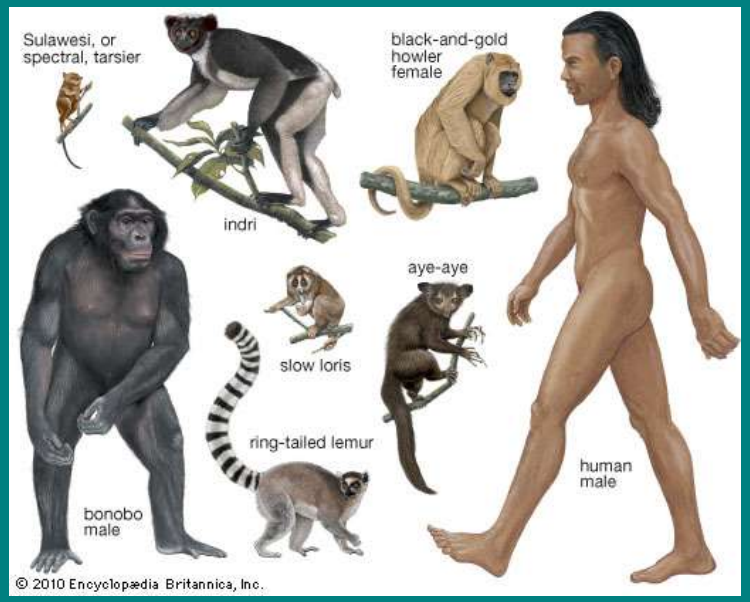
- Vertebral column

Class Mammalia

- Hair
- Mammary glands
- 3 ear ossicles
- Heterodont dentation (shape of teeth)
- Attached placenta

Order Primates

- Lemurs, monkeys, great apes, humans
- Grasping digits
- large developed brains



Family hominidae

- humans, chimps, gorillas, and orangutans
- Large cerebrum
- Bipedal locomotion

Genus homo

- Flattened face
- Prominent chin
- Nostrils inferior on nose

Species sapiens

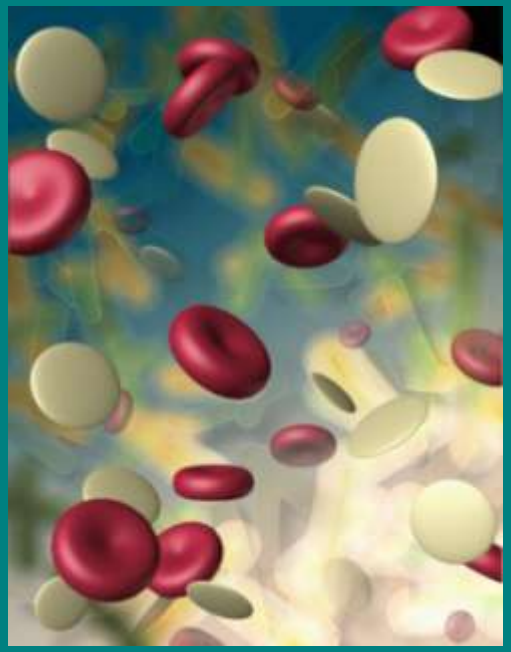
- Present day man
- Largest cranium
- http://media.hhmi.org/biointeractive/click/explore-your-inner-animals/?_ga=2.59981997.1421093696.1506972015-1859879287.1506972015

Requirements of life/characteristics

1. development
    a. Cell differentiation
2. Organization
    a. organelles
    b. tissues, organs, systems

3. Adaptation
   a. tolerance range allowing functions to occur
   b. narrow range- less adaptation
4. responsiveness- irritability
   a. sense changes and react
   b. internal / external

5. Movement
   a. internal and external
   b. ex: blood flow
6. Reproduction
   a. offspring
   b. growth/repair



7. Growth
   a. increase size
   b. cellular maturation
8. Respiration
   a. oxygen used by cells to release food energy
   b. remove carbon dioxide

9. Digestion and absorption
   a. food is broken down
   b. nutrients passed into body fluid
10. Circulation
   a. body fluids
   b. nutrients/oxygen
   c. metabolic waste

11. Synthesis (assimilation)
    a. simple molecules into more complex
12. Secretion
    a. products released into body
    b. hormones/enzymes
13. Excretion
    a. removal of metabolic wastes

5 Basic Physical Needs

1. Water
   a. most abundant in body
   b. used for metabolism
   c. regulates temp.

* faint, raise BP, raise salts, kidneys shut down, death

2. Oxygen

a. 20% normal air

b. release food energy

* Death in minutes

3. Food

a. energy source/ chemical reactions

* Digest body, system shut down, death

4. Heat

a. made by metabolism

* Enzyme destruction, death

5. Pressure

a. atmospheric- breathing

b. hydrostatic- blood pressure

* death

Body organization

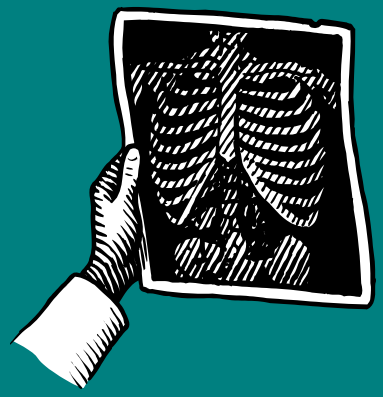
1. Cells
    a. 60-75 trillion
2. Tissues
    a. group of cells working together to do a job
    b. muscle, epithelial, nerve, connective

3. Organs
   a. group of tissues working together
   b. stomach, heart, skin, kidney
4. System
   a. group of organs working together
   b. integumentary, circulatory, nervous
5. Organism
   a. living thing

Human systems

1. Integumentary
   a. skin, hair, nails, sweat glands, sebaceous glands
   b. protect tissues
   c. regulate body temp
   d. support sensory receptors

2. Skeletal
   a. bones, ligaments, cartilage
   b. internal support
   c. framework
   d. blood cell production



3. Muscular
   a. smooth, skeletal, cardiac
   b. movement, posture, body heat
4. Nervous
   a. brain, spinal cord, nerves, sense organs
   b. regulate body activities
   c. detect changes and respond

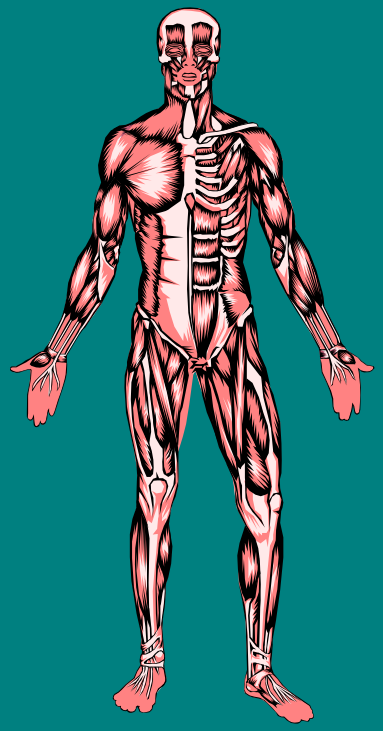
5. Respiratory

a. nasal cavity, pharynx, larynx, trachea, bronchi, lungs

b. gaseous exchange

c. maintain acid base balance in blood

6. Circulatory
   a. heart, arteries, veins, capillaries
   b. movement of materials
   c. blood movement



7. Lymphatic
   a. lymph vessels, nodes, thymus, spleen, tonsils
   b. body immunity
   c. drainage of tissue fluid
   d. absorption of fats

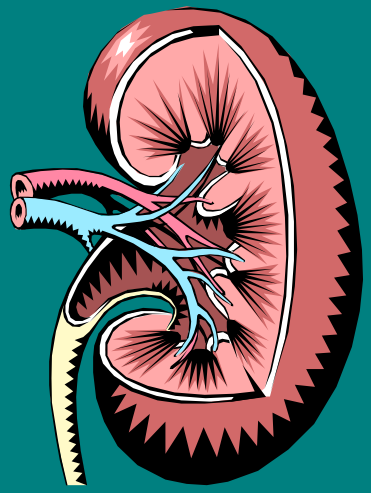
8. Urinary

a. kidneys, ureters, urinary bladder, urethra

b. remove wastes from blood

c. water and electrolyte balance

d. store and transport urine



9. Endocrine

a. pituitary, thyroid, parathyroid, adrenals, pancreas, ovaries, testes, pineal, thymus

b. secrete hormones

c. chemical regulation of body

10. Digestive

a. mouth, tongue, teeth, pharynx, esophagus, stomach, small/large intestine, salivary glands, pancreas, liver, gallbladder

b. ingestion, digestion, absorption

c. elimination of wastes

11. Male reproductive

a. scrotum, testes, seminal vesicles, vas deferens, penis, urethra, prostate, bulbourethral gland

b. make and maintain sperm

c. transfer sperm to female

12. Female reproductive
    a. ovaries, oviducts, uterus, vagina, vulva, clitoris
    b. make/maintain eggs
    c. receive sperm
    d. site of fertilization
    e. support fetal development
    f. delivery of fetus