

WELCOME

To: A. Linwood Holton Governor's School;
Our nation's first Interactive Virtual School
You are about to begin an educational experience that
uniquely belongs to Southwest Virginia. I am very
happy to have you in Anatomy and Physiology class
this year. *Karen Webb Smith, Instructor*



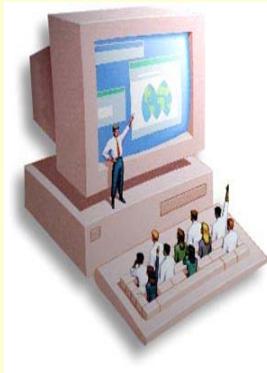
Mrs. Karen Webb Smith: Instructor
Anatomy & Physiology

A. Linwood Holton Governor's School

The following slides will inform you of guidelines for our class.

MEMORIZE:

1. Your LearnLinc Password
2. www.hgs.k12.va.us Anatomy page - format for writing lab reports, chapter reviews, & power point slides
3. Pageout addy & password
<http://smithka.pageout.net>
4. Mrs. Smith's email addy:
ksmith@hgs.k12.va.us
5. telephone # 276-619-4351



IMPORTANT TO REMEMBER:

1. Be on time to class. Always keep headset on and mic over your mouth during class.
2. At the beginning of class everyone should textchat a greeting. This lets your instructor know that you are ready for class.
3. All assignments are to be emailed to ksmith@hgs.k12.va.us and **MUST** be received on time. **ALWAYS** look for a reply from me that I received your email and the assignment. No reply means I did not receive your email.

4. Labs can be done with a partner, but lab reports **MUST NOT** be identical. Data could possibly be alike; nothing else. Always write your lab report according to the lab report format directions on the Governor's School webpage (look at the Anatomy webpage/Class CD). Late Lab Reports will have 10 points deducted per day. After 3 days late the grade will be 0. This will be enforced.

5. If you miss class it is your responsibility to make-up tests & assignments. You can watch class archives.

6. Please remember that this is a college class. You will receive 8 hours of college credit for this class. Please advise your instructor by email of any absences from class. If you miss a test you are responsible for making it up.
7. The Governor's School expects that each student will take tests and do all assignments without the aid of any outside influence. Submission of tests and assignments is your declaration of honesty.

8. Please do **NOT** leave class without permission. You may not miss this class to make up work in another class.

9. It is advisable that you keep a **back up copy** of all work that is emailed to your instructor.

10. I am **always** willing to talk with you and help you in anyway. It is of the utmost importance to me that your participation in the Governor's School is a positive experience. *KSMITH*



Introduction to Human Anatomy & Physiology

Karen Webb Smith, Instructor

1

Unit One

*****ALWAYS** read the case studies and clinical applications in each Chapter. Questions from these will be on tests.

I. Introduction

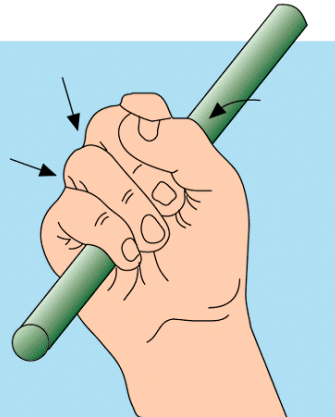
- A. The earliest studies of anatomy and physiology probably dealt with treating illnesses and injuries.
- B. Early healers relied on superstitions and magic.
- C. Later, herbs were used to treat certain ailments.
- D. Eventually, the stage was set for the development of medicine with standardized terms in Greek and Latin.

II. Anatomy and Physiology

- A. **Anatomy** deals with the structure (morphology) of the body and its parts.
- B. **Physiology** studies the functions of these parts.
- C. **Anatomists** rely on observation while **physiologists** employ experimentation.
- D. The functional role of a part depends on how it is constructed.

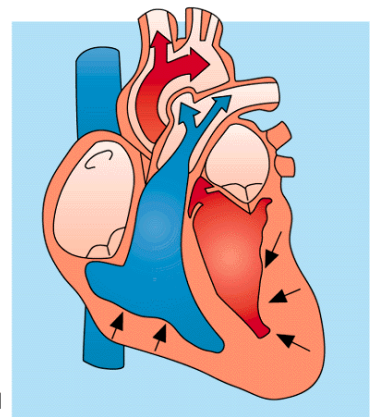
Relationship of Structure and Function (1)

Grasping

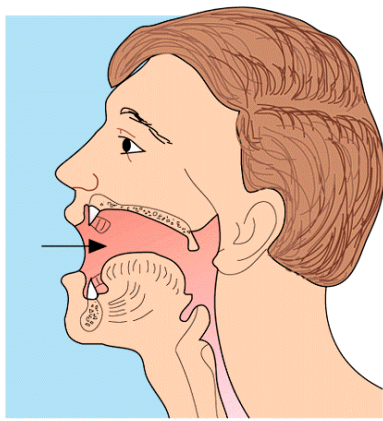


Relationship of Structure and Function (2)

Pumping blood



Relationship of Structure and Function (3)



Receiving food

III. Characteristics of Life

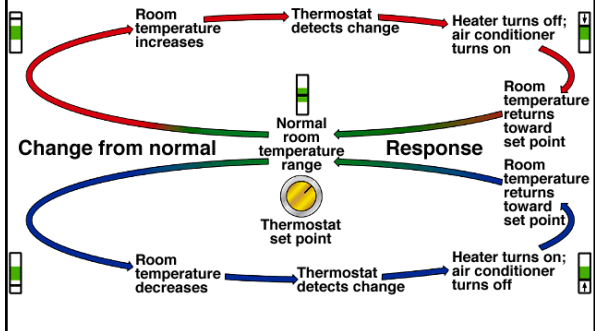
- A. Fundamental characteristics of life are traits shared by all organisms.
- B. Characteristics of life include (KNOW THESE)
Characteristics of Life:
movement, responsiveness, growth, reproduction, respiration, digestion, absorption, circulation, assimilation, excretion
- C. Taken together, these 10 characteristics, which are physical and chemical events or reactions, constitute metabolism.

IV. Maintenance of Life

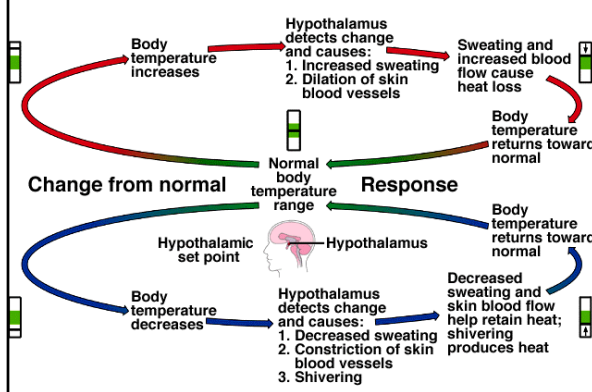
- A. Requirements of Organisms
The body's organ systems work together to maintain life. The reproductive system works to perpetuate life.
Requirements of Organisms:
water, food, oxygen, heat, and pressure
- B. Homeostasis: The maintenance of a stable internal environment. Most of the body's metabolic activities work to ensure homeostasis.
The human body is composed of about 70 trillion cells.

KNOW Terms: set point, homeostatic mechanism, negative/positive feedback, normal range

Homeostatic Mechanism

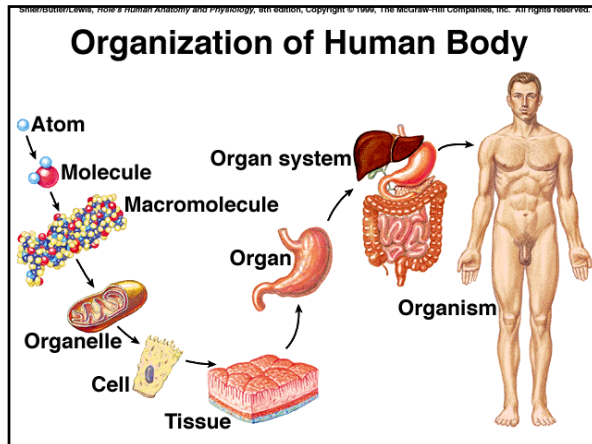


Homeostasis



V. Levels of Organization

- A. The human body is the sum of its parts and these parts can be studied at a variety of levels of organization. Know examples of the following:
Atom
Molecule
Macromolecule
Organelle
Cell
Tissue
Organ
Organ system
Organism
- B. The chapters that follow consider human structure and function at these various levels.



VI. Organization of the Human Body

A. Major features of the human body include its cavities, membranes, & organ systems.

B. Body Cavities

I. axial portion – head, neck, trunk
dorsal cavity = cranial cavity and vertebral canal
viscera – organs in a cavity
ventral cavity = thoracic cavity (lungs) and abdominopelvic cavity (abdominal and pelvic cavities)
diaphragm – separates the 2 ventral cavities
mediastinum – region that separates the right and left lungs

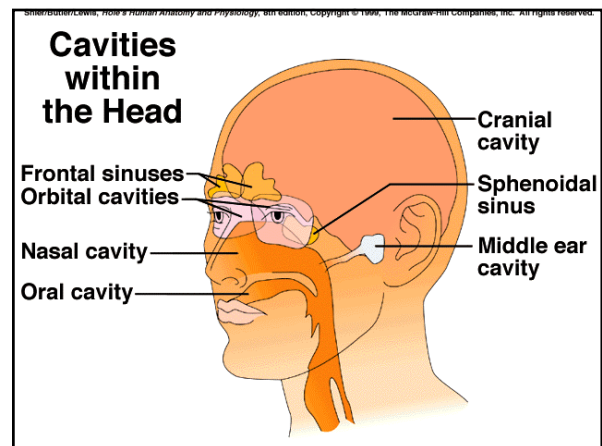
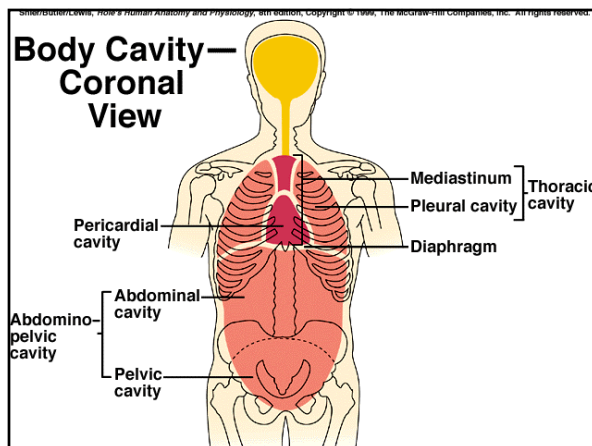
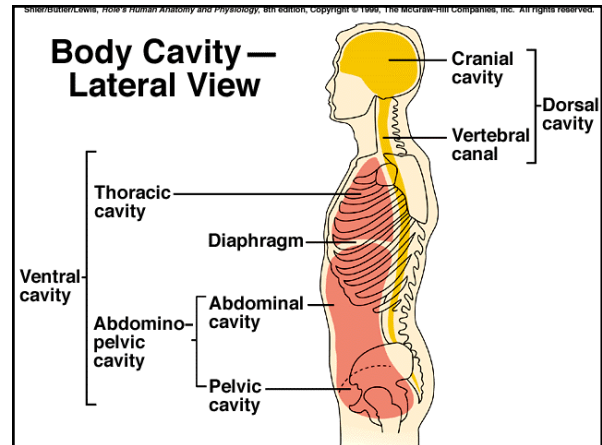
II. appendicular portion – upper and lower limbs

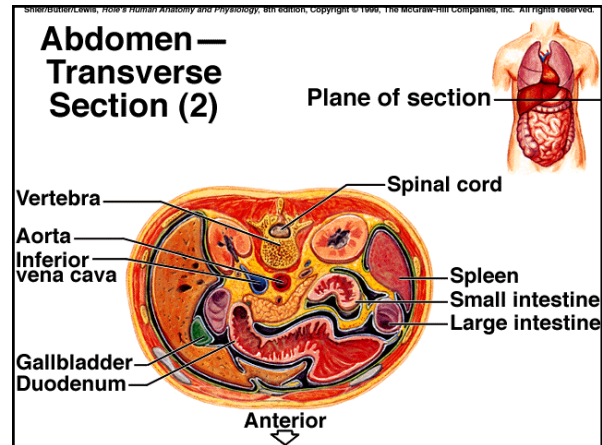
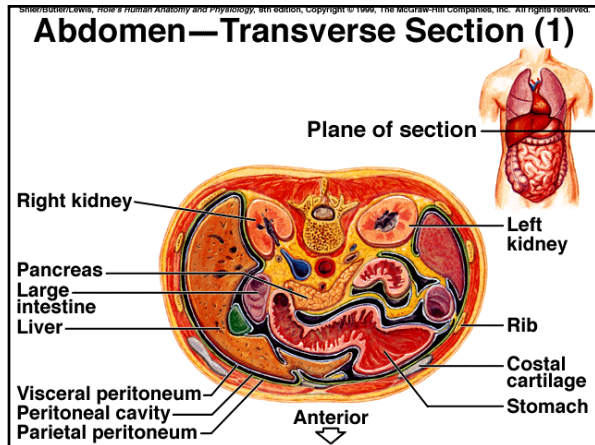
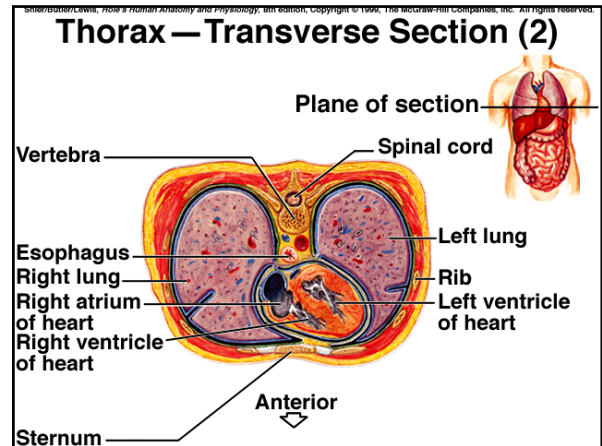
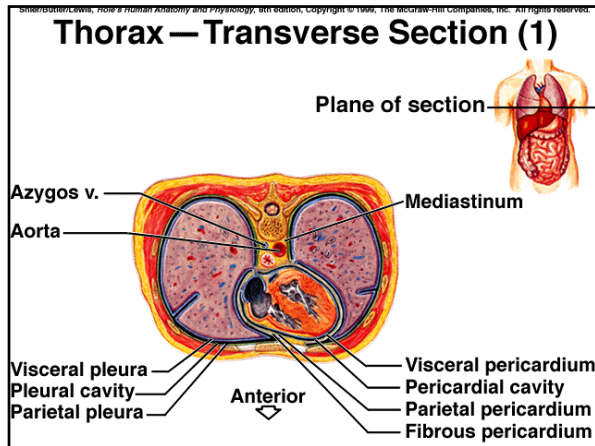
C. Thoracic and Abdominopelvic Membrane - membrane – a thin pliable layer of tissue covering surfaces, separating or connecting regions, structures, or organs of an animal or plant. (Webster)

******Serous membranes** line walls of thoracic & abdominal cavities & fold back to cover the organs within these cavities. They secrete **serous fluid**.

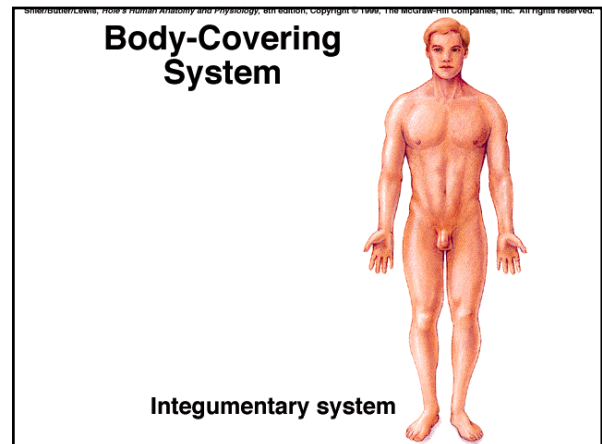
- *parietal – (Latin) wall (membrane lines the wall of a cavity)
- *visceral – (Latin) organ (membrane that covers an organ)
- *pleura – (Latin) lungs
- *pericardium – (Latin) heart
- *peritoneum – (Latin) abdomen

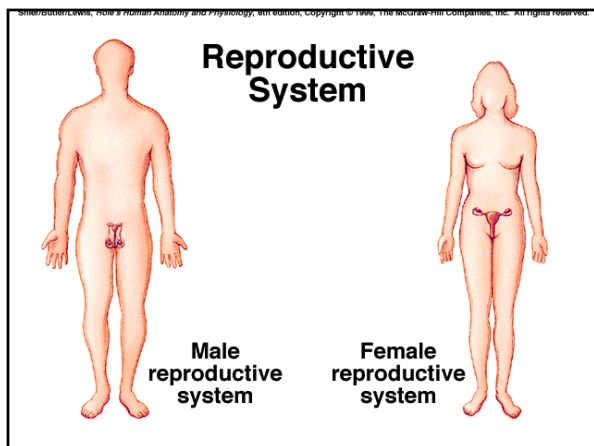
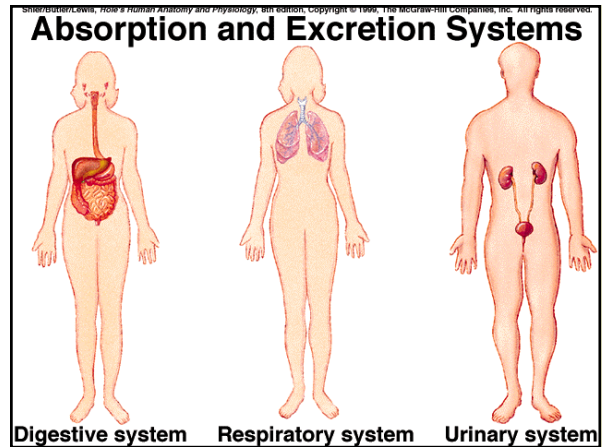
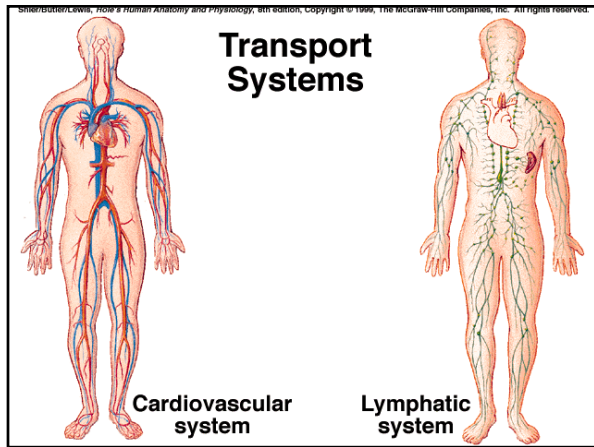
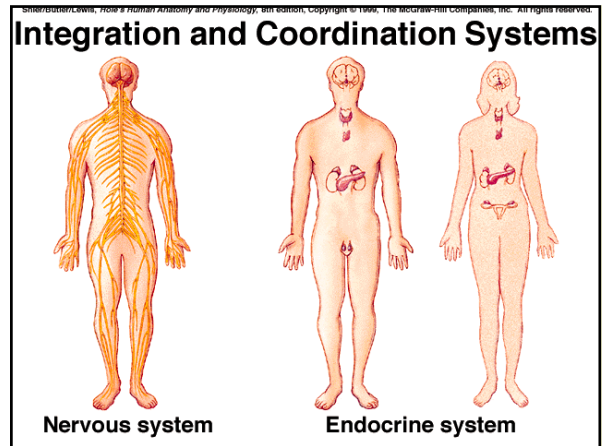
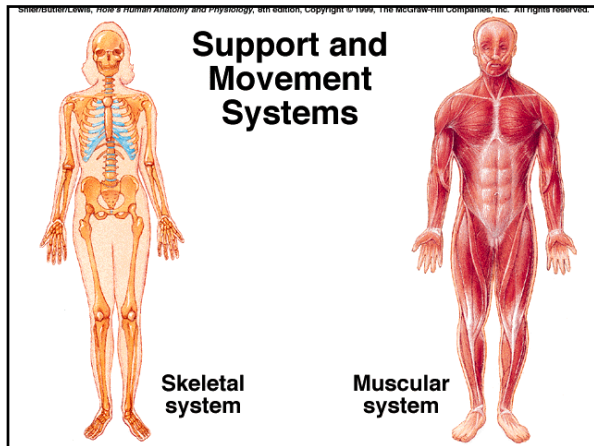
parietal pleura – membrane which lines the walls of the right and left thoracic compartments which contain the lungs
visceral pleura – membrane which covers the lungs (pleura)
parietal pericardium – lines the wall of the pericardium that contains the heart
visceral pericardium – covers the heart
parietal peritoneum – lines the wall of the abdominopelvic cavity
visceral peritoneum – covers each organ of the abdominopelvic cavity





- D. Organ Systems: KNOW functions of each**
- 11 Organ Systems:**
- Integumentary
 - Skeletal
 - Muscular
 - Nervous
 - Endocrine
 - Cardiovascular
 - Lymphatic
 - Digestive
 - Respiratory
 - Urinary
 - Male and Female Reproductive Systems





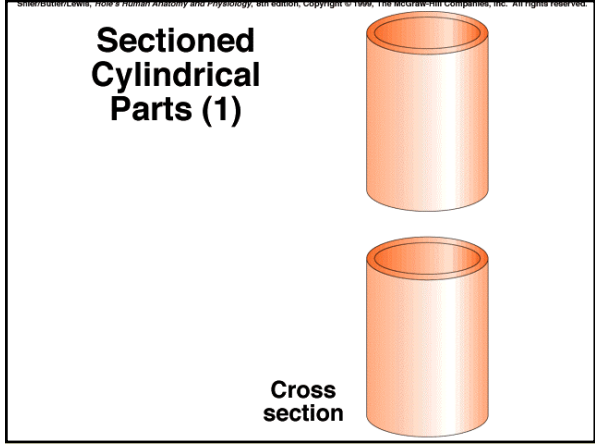
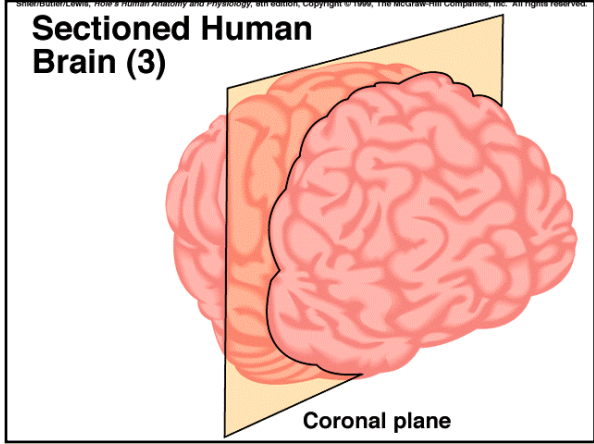
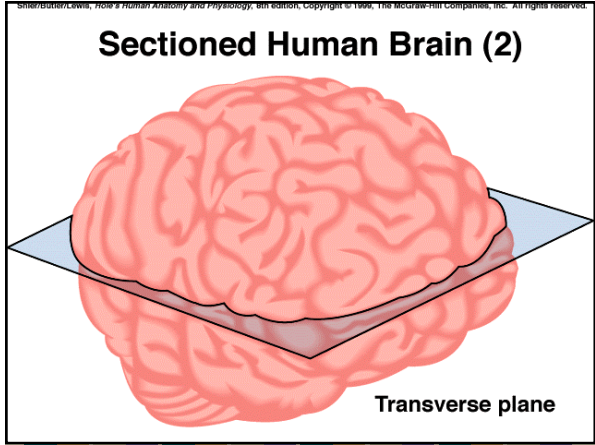
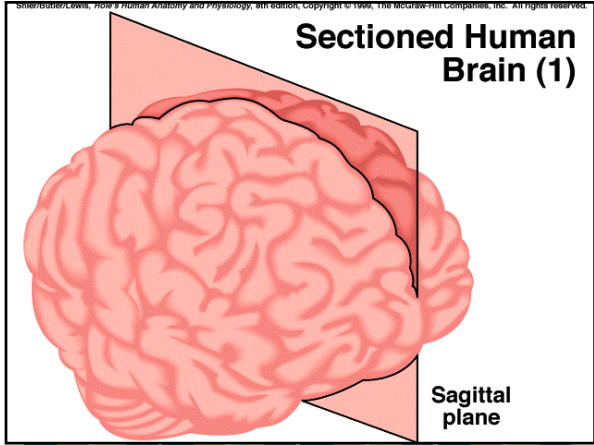
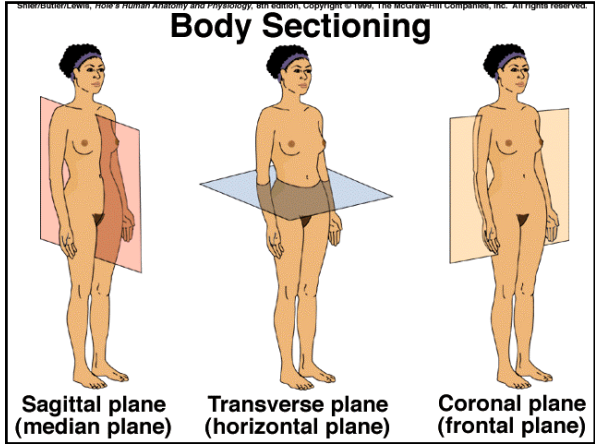
VII. Anatomical Terminology
 Correct anatomical position – standing erect, face forward, upper limbs at sides, palms forward

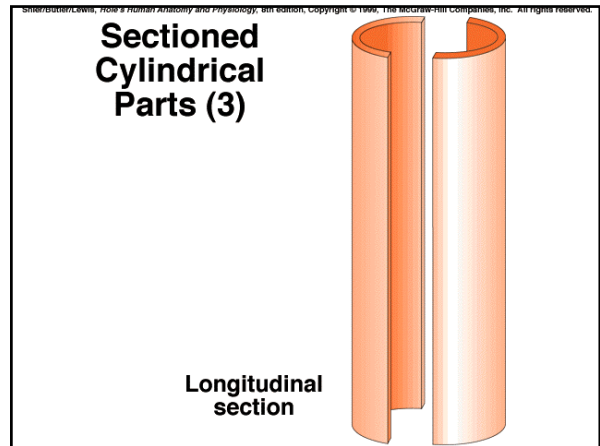
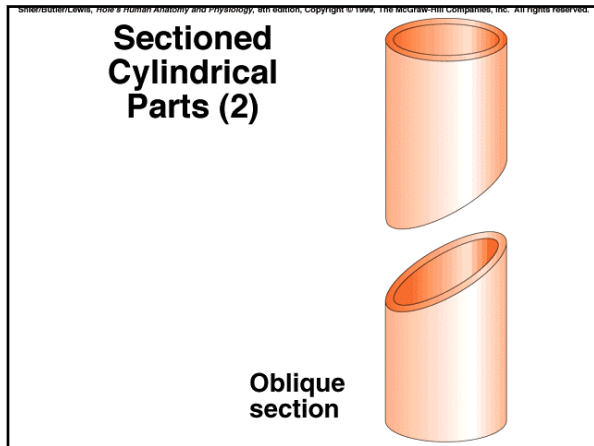
A. Relative Position: KNOW

- *superior – one part above another part
- *inferior – one part below another part
- *anterior – toward the front
- *posterior – toward the back
- *medial – midline
- *lateral – side
 - ipsilateral – same side
 - contralateral – opposite side
- *proximal – part of body that is closer to the trunk
- *distal – part of body is farther from the trunk
- *superficial – located near the surface
- peripheral – outward or near the surface
- *deep – describes internal parts

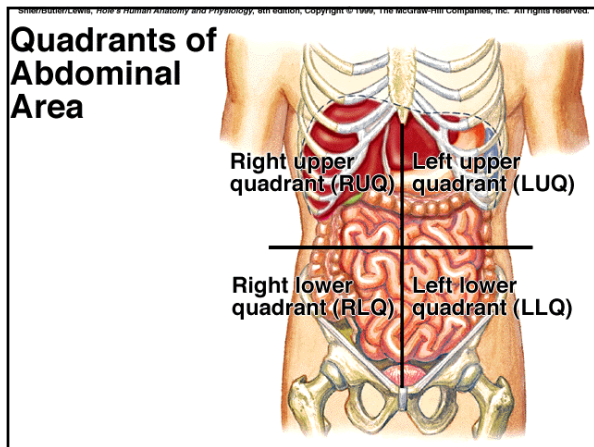
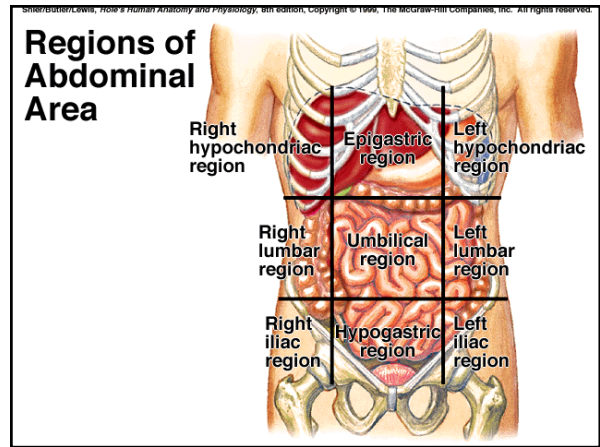
B. Body Sections: KNOW

- ***sagittal** – lengthwise cut along midline
- ***transverse** – divides into superior and inferior portions
- ***coronal** – divides into anterior and posterior portions



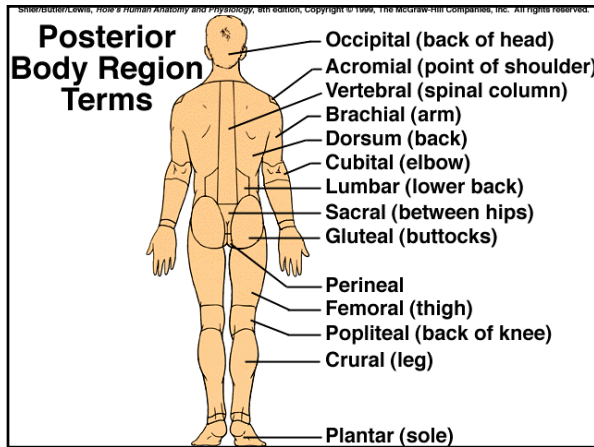
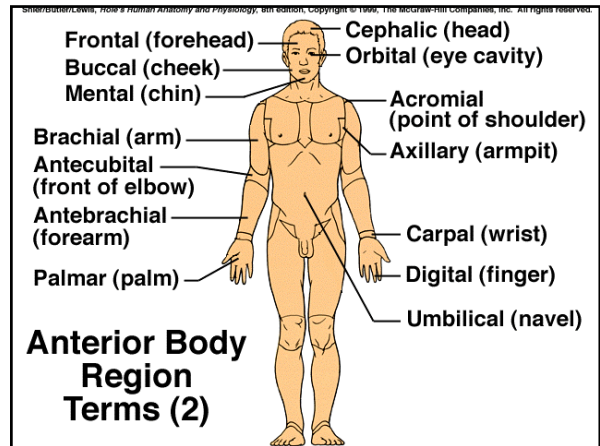
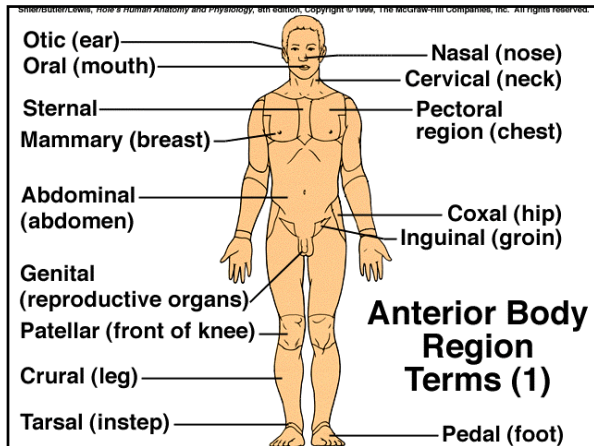


- C. Body Regions**
- *epigastric region – upper middle portion
 - *left & right hypochondriac regions – each side of epigastric
 - *umbilical region – central portion
 - *left & right lumbar regions – on each side of umbilical
 - *hypogastric region – lower middle portion
 - *left and right iliac (inguinal) regions – on each side of hypogastric region
 - *abdominal regions:
 - right upper quadrant
 - right lower quadrant
 - left upper quadrant
 - left lower quadrant



KNOW terms on all slides.

Be sure to study the Chapter Review.



Fini – Chapter 1

Remember – At the end of the chapter is a Chapter Summary that is your Study Guide for the Chapter 1 test.