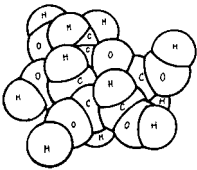

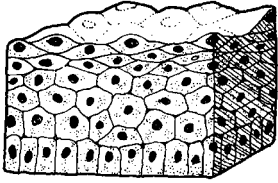
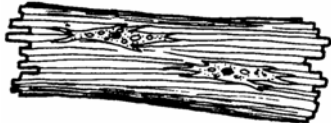
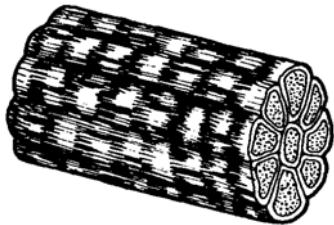
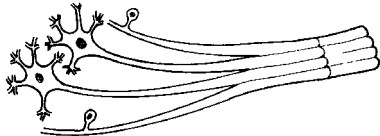
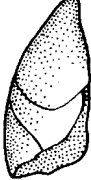
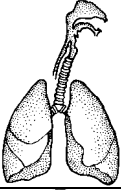



INTRODUCTION TO ANIMALS

LEVELS OF ORGANIZATION

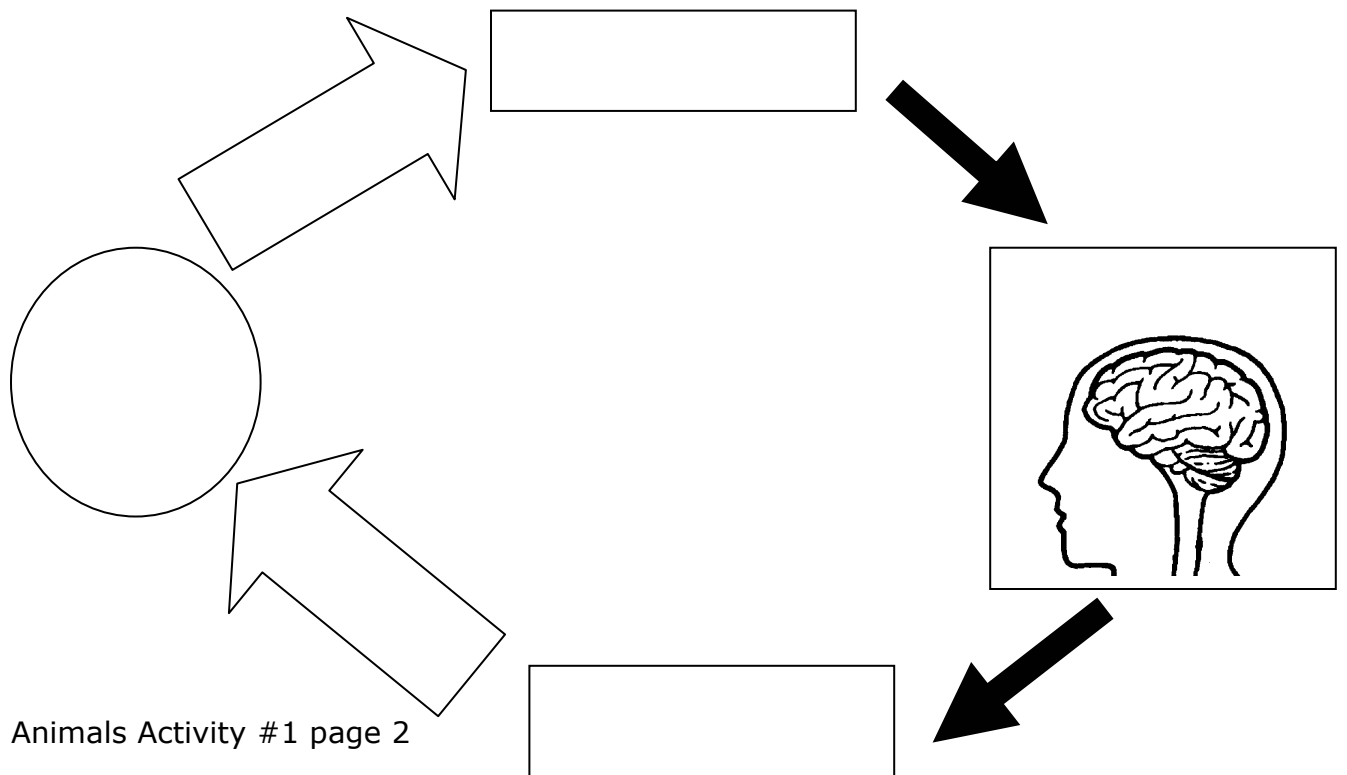
		
		
		
		
		
		

HOMEOSTASIS:

DEFINITION	IMPORTANCE

MECHANISMS FOR MAINTAINING HOMEOSTASIS:



TYPES OF FEEDBACK

NEGATIVE	POSITIVE

QUESTIONS:

1. Identify the cell described in each of the following.

Description	Cell
Secrete protein components of extracellular fibers; found in connective tissue	
Amoeboid cells that roam tissue engulfing bacteria and dead cells by phagocytosis	
Cells found in cartilage; secrete rubbery matrix found in cartilage	
Cells that form/produce bony matrix in bone	
Nerve cell	

2. Identify the tissue describe in each of the following.

Description	Tissue
Covers body surfaces and lines body cavities	
Fills in internal spaces; provides structural support	
Contracts & provides active movement	
Conducts electrical impulses	
Major tissue found in the brain, spinal cord and peripheral nerves	

Description	Tissue
Major tissue found in the wall of the heart and in skeletal muscles	
Provides physical protection; controls permeability; produces secretions	
Simple & stratified squamous, cuboidal, columnar, transitional, pseudostratified	
Adipose, dense, cartilage, loose, blood, bone	

3. Listed below are the major functions of the organ systems in the human body. Identify the organ system described.

MAJOR FUNCTION(S)	ORGAN SYSTEM
Defense against infection and disease	
Filter blood, collect and remove nitrogenous wastes from blood, and maintain water, salt, acid/base, ion balance	
Intake of air and gas exchange	
Intake of food, mechanical and chemical breakdown of food, absorption of building blocks of food, and formation of solid wastes	
Internal transport of cells and dissolved materials	
Processes information, provides short-term control over activities of other organ systems, and directs immediate responses to stimuli	
Coordination of body activities via secretion of chemicals (hormones)	
Reproduction	
Protection from environmental hazards and temperature control	
Provide movement, produce heat, and support skeletal position	
Support and protection of soft tissues, mineral storage, and blood production	

4. Identify the organ system to which each of the following organs belongs.

MAJOR ORGAN(S)	ORGAN SYSTEM
Bones, cartilage, ligaments, and tendons	
Brain, spinal cord, and nerves	
Heart, blood vessels, and blood	
Kidneys, ureters, urinary bladder, and urethra	
Lungs, nasal cavities, sinuses, pharynx, larynx, trachea, bronchi	
Lymphatic vessels, lymph nodes, spleen, and thymus	
Mouth, teeth, tongue, salivary glands, pharynx, esophagus, stomach, intestines, liver, gall bladder, and pancreas	
Ovaries, oviducts, uterus, vagina, and mammary glands, testes, epididymis, vas deferens, seminal vesicles, prostate, urethra, penis	
Pineal gland, pituitary, thyroid, parathyroid, thymus, adrenal glands, kidneys, pancreas, testes, and ovaries	
Skeletal, cardiac, and smooth muscles	
Skin, hair follicles, sebaceous and sweat glands, nails, and sensory receptors	

5. What happens to the body when homeostasis breaks down?

6. In general, what effect does negative feedback have on homeostasis?

In general, what effect does positive feedback have on homeostasis?

7. When blood glucose levels rise above a set point after eating a meal high in carbohydrates, β -cells in the pancreas are activated and release insulin into the blood. Insulin causes an increase in glucose uptake by body cells and causes the liver to take in glucose and convert it to glycogen. As a result, blood glucose levels decline to the set point.

a. Is this an example of positive or negative feedback? _____

b. How do you know? _____

c. How is the maintenance of homeostasis affected?

8. Why is positive feedback helpful in clotting blood but unsuitable for regulation of body temperature?

9. What is the role of each of the following components in the homeostatic mechanism?

COMPONENT	ROLE
Receptor	
Control Center	
Effector	

10. Identify each of the following as an example of **Positive** or **Negative** feedback.

_____ Response is opposite of or counters the stimulus

_____ Response amplifies or reinforces the stimulus

_____ Continues to disrupt homeostasis

_____ Restores homeostasis

_____ When blood pH levels fall below a set point, the kidneys collect and remove more H⁺ (hydrogen ions) from the blood, thus bring the blood pH levels back to normal

_____ The female hormone estrogen triggers the release of the luteinizing hormone (LH); increased production of LH increases the production and release of estrogen

_____ The anterior pituitary gland produces a hormone called FSH (follicle stimulating hormone); FSH causes the ovaries to produce and release estrogen; increased production of estrogen causes a decrease in production of FSH

_____ When blood calcium levels rise above a set point (hypercalcemia) specialized cells in the thyroid secrete a hormone called calcitonin. Calcitonin causes specialized cells in bone tissue to take calcium out of the blood and store it in bone tissue.