

Travel Brochure of the Body Systems

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Your team of 4 or 5 at the Duodenum Dynamics Ad Agency have been hired as a travel consultant to design a luxury tour through the Human Body Systems. Before you can collect your fee from the Anatomy Travel Bureau, you must produce a brochure. The owner of the travel bureau, Mr. Seymore Sphincter, has informed you that in order to win the contract you must highlight the trendy spots, the exciting activities, and the imports and exports of the areas. For insurance considerations, you must also discreetly mention any possible dangers or special precautions that tourists might encounter in visiting these systems. Your world body tour should include visits to the following systems: (1) Digestive, (2) Respiratory, (3) Skeletal, (4) Muscle, (5) Nervous, (6) Excretory, (7) Circulatory, and (8) Immune.

Format

- 26" X 32" chart paper folded into 8 sections (16 front and back).
- 16 pieces of poster board measuring 8" X 13" should be pasted to each section.
- 7 systems will have 2 sections each, 1 system will have 1 section, and the cover will be the remaining section.
- The key feature is to give an overall sense of the organization and function of each of the 8 systems. You may use drawings, computer graphics, photographs of actual organs, pictures from magazines, journals, or books to help in your advertisement of each system. Whenever possible, type all written parts of brochure. Let your imagination run WILD!
- Each group will orally present its brochure to the class, and we will vote on which team gets the contract.

GT CLASSES

- Pick a system and make a working model to demonstrate the system's function.
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Biology Tour of Human Systems Rubric

FOUR POINT ASSESSMENT

1= the element described is missing

2= the element is present, but does not meet standard described

3= the element is present and meets standard, but needs some revision or improvement

4= the element is present and meets or exceeds the standard and no revision is recommended

Content 50%

1 2 3 4 Information presented is accurate, factual, and relevant to the specific topic

1 2 3 4 Research is in-depth and covers all systems and required topic areas

1 2 3 4 Time, energy, effort, enthusiasm, and group commitment to the project are evident

1 2 3 4 Project shows mastery of structure and function of human systems

1 2 3 4 Interrelationships between systems are clearly depicted and explained

Travel Brochure 30%

1 2 3 4 Travel brochure is neat and shows thought and effort

1 2 3 4 Travel brochure clearly illustrates all structures, functions, and risks associated with travel to each system

1 2 3 4 Travel brochure exhibits creativity

Oral presentation 10%

1 2 3 4 Presentation is smooth and shows evidence of preparation

Peer and Self Evaluation 10%

1 2 3 4 Evaluations show thought and effort

_____ **Total Points**

Grading:

A= 37-40 B+= 36 B= 33-35 C+= 32

C= 29-32 D+= 28 D= 25-27 F<= 24

Self And Peer Assessment

Please assess everyone in your group including yourself. This assessment should take into consideration cooperation and effort over the entire time allotted for completion of your project. Indicate the tasks performed by each group member and estimate the amount (%) of the total project which each member completed. Remember, the sum of the % should equal 100 %.

Group Members	Specific Project Tasks	% of Total Effort
1. Self		
2.		
3.		
4.		
5.		
		100% Total

Group Grade- Indicate the grade which you feel your group has earned. Briefly describe the reasoning for the group grade.

Group Grade _____ Remarks:

Systems Objectives

The Immune System

OBJECTIVES:

1. Describe the function of the immune system.
2. Explain how the skin functions as a defense against disease.
3. Distinguish between a specific and nonspecific response.
4. Describe the actions of B cells and T cells in an immune response.
5. Describe the relationship between vaccination and immunity.
6. Describe what happens in an allergic response.
7. Describe at least one immune disorders.
8. Explain (diagram) the antigen-antibody reaction.

VOCABULARY TO INCLUDE IN PAMPHLET:

Immunology, antigen, antibody, lymphocyte, leukocyte, thymus gland, bone marrow, B-cell, T-cell, macrophage, vaccine, antibiotic, inflammatory response, immune response, antihistamine, autoimmune disease, fever, helper T cell, pathogen, killer T cells, interferon

SUGGESTIONS

Add graphics, cartoons, diagrams etc, at bottom of page to supplement above instructions.

Nervous System

OBJECTIVES:

1. Describe the basic structure and function of the nervous system.
2. Describe the structure of a neuron and explain how it operates. (Diagram)
3. List the parts and discuss the function of the Central Nervous System (CNS). Discuss the structure and control centers of the brain.
4. Describe the Peripheral Nervous System (PNS), including the Autonomic branch (involuntary) and the Somatic branch (voluntary). In your discussion of the Autonomic system, distinguish between the Sympathetic branch and the Parasympathetic branch.
5. Explain how a nerve impulse travels
6. Explain what occurs during the reflex arc. (Diagram)

VOCABULARY TO USE IN THE PAMPHLET:

Central Nervous System, Peripheral Nervous System, Autonomic N.S., Sympathetic N.S., Parasympathetic N.S., ganglia, neuron, dendrite, cell body, axon, mixed nerve, sensory nerve, motor nerve, resting potential, action potential, nerve impulse, sodium-potassium pump, synapse, neurotransmitter, acetylcholine, stimulus, response, reflex, brain, cerebrum, cerebellum, medulla oblongata, spinal cord, meninges

The Excretory System

OBJECTIVES:

1. Define excretion.
2. Describe the function of the skin, kidneys, lungs and liver in the excretory process.
3. Describe the structure and function of the kidney and its parts.
4. Explain how the nephron functions.
5. Explain the difference between filtration and reabsorption

VOCABULARY TO BE INCLUDED IN PAMPHLET

excretion, kidney, nephron, Bowman's capsule, glomerulus, filtration, reabsorption, ureter, urethra, urine, bladder, aorta, renal artery, renal vein, adrenal glands, metabolic wastes, sweat glands, active transport

Respiratory System

OBJECTIVES:

1. Identify the structure and function of the parts of the respiratory system.
2. Explain the function of the ribs and diaphragm in the breathing process.
3. Explain how breathing rate is controlled.
4. Describe what happens between the alveoli and the capillaries.
5. Describe the effects of smoking on respiration.

VOCABULARY TO BE INCLUDED IN THE PAMPHLET:

alveoli, gas exchange, epiglottis, trachea, bronchi, bronchiole, larynx, lung, anaerobic respiration, oxygen debt, pharynx, respiration, trachea, vital capacity, inhalation, exhalation, pleural membrane, cilia, CPR, respiratory control center, diaphragm

Transport: The Circulatory System

OBJECTIVES:

1. List the functions of the human circulatory system.
2. Trace a drop of blood through the heart from right atrium to the aorta.
3. Locate and label the parts of a heart on a diagram.
4. Compare the blood on the right side of the heart with that on the left side.
5. Describe the components of blood.(red blood cells, white b.c., platelets and plasma)

6. Identify and describe the function of the different types of circulation: pulmonary and systemic circuits.
7. Explain how the heart beats.
8. Explain what is meant by blood pressure.
9. Explain how blood is produced in the body. Describe the role of the spleen and marrow.
10. Discuss diseases of the heart (hypertension and atherosclerosis)

VOCABULARY TO BE INCLUDED IN PAMPHLET

aorta, artery, arteriole, capillary, venule, vein, vena cava, atrium, valve, ventricle, circulatory system, pulmonary circulation, systemic circulation, coronary circulation, red blood cells, hemoglobin, Rh factor, white blood cells, platelets, plasma, diastole, systole, sphygmomanometer, pacemaker, blood transfusion, lymph, deoxygenated blood, pacemaker

The Digestive System

OBJECTIVES:

1. List the parts of the digestive system and give their functions.
2. Compare mechanical digestion to chemical digestion.
3. Explain the function of the digestive enzymes amylase, protease and lipase.
4. Explain the results of the chemical digestion of carbohydrates, proteins and fats and discuss if this digestion occurs in the mouth, stomach and/or small intestines.
5. Discuss the importance of the liver and pancreas in digestion. List the substances they produce and explain their function.
6. Describe the structure of the villi and explain how its function is related to its structure.

VOCABULARY TO BE INCLUDED IN THE PAMPHLET:

digestion, salivary glands, epiglottis, esophagus, stomach, pyloric sphincter valve, duodenum, liver, gall bladder, pancreas, small intestines, mesentery, villi, large intestines, rectum, mucous, feces, alimentary canal, peristalsis, amylase, hydrochloric acid, pepsin, lipase, bile, E. coli, essential amino acids, neutral pH, acidic pH

Skeletal System (A Lesson To Bone Up On)

OBJECTIVES:

1. Identify twenty major bones in the body.
2. State the functions of the skeletal system.
3. Describe the composition of bone.
4. Explain the differences in structure and function between the 4 major kinds of moveable joints: ball and socket, hinge, pivot, gliding
5. Discuss some injuries or disorders of the skeletal system.

VOCABULARY

osteology, endoskeleton, appendicular skeleton, axial skeleton, ligaments, tendons, periosteum, Haversian canals, marrow, ossification, joints, arthritis, synovial fluid, fontanel, cartilage, bursa

Muscular System

OBJECTIVES:

1. Compare the structure and function of three types of muscles and give examples of where these muscles would be found in the body.
2. Explain the mechanism of muscle contractions.
3. Explain the function of flexors and extensors.
4. Explain how muscles fatigue.
5. Explain how muscles, bones, and tendons are related.
6. Explain the 'all or none' response.
7. Identify 10 major muscles of the body.

VOCABULARY TO INCLUDE IN YOUR PAMPHLET:

belly, muscle fiber, myofibril, actin, myosin, skeletal muscle, smooth muscle, cardiac muscle, tendon, ligament, extensor, flexor, fatigue, myology, acetylcholine, cholinesterase