

COURSE: Health	GRADE(S): 8 th Grade
UNIT: Body Systems	TIMEFRAME: 5 Lessons

NATIONAL STANDARDS:	
STANDARD 1:	Students will comprehend concepts related to health promotion and disease prevention to enhance health.
STANDARD 2:	Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
STANDARD 3:	Students will demonstrate the ability to access valid information and products and services to enhance health.
STANDARD 4:	Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

STATE STANDARDS:	
10.1. Concepts of Health	
10.1.9.B.	Analyze the interdependence existing among the body systems.
10.2. Healthful Living	
10.2.9.E.	Explain the interrelationship between the environment and personal health.
<i>Reading Assessment Anchors:</i>	
R8.A.2 Understand nonfiction appropriate to grade level.	
R8.A.2.1	Identify and apply the meaning of vocabulary in nonfiction.
R8.A.2.3	Make inferences, draw conclusions, and make generalizations based on text.
R8.A.2.4	Identify and explain main ideas and relevant details.
R8.B.1 Interpret, compare, describe, analyze, and evaluate components within and between text.	
R8.B.1.2	Make connections between text.
R8.B.3.2	Distinguish between essential and nonessential information within or across text.

UNIT OBJECTIVES:	CONTENT:
Comprehend the parts and functions of body systems.	<p><i>I. Muscular System</i></p> <ul style="list-style-type: none"> - Consists of muscles that provide motion and maintain posture. More than 600 Muscles in the body. - Divide into two major groups: Voluntary and Involuntary <ul style="list-style-type: none"> o <u>Voluntary</u>: person can control movement of arms and legs. o <u>Involuntary</u>: muscles person cannot control. <ul style="list-style-type: none"> ▪ Example: Muscles in stomach, other internal organs. - Three types of muscles <ul style="list-style-type: none"> o <u>Smooth</u>: involuntary; found in many internal organs. o <u>Skeletal</u>: voluntary; attached to bones that work in pairs to your body. o <u>Cardiac</u>: involuntary; specialized tissue only found in the heart.

- Tendon
 - o A tough tissue fiber that attaches muscles to the bone.

II. Digestive System

- Breaks down food for energy
- Allows nutrients to be absorbed by body cells.
- Eliminates waste
- Composed of:
 - o Mouth: where digestion begins
 - o Esophagus: moves food to stomach.
 - o Stomach: holds food that needs to be broken down.
 - o Liver: largest organ that stores energy and removes toxins.
 - o Anus: exit point of digestive tract.

III. Immune System

- Removes harmful organisms from the blood and combats pathogens.
- Incorporates the lymph, lymph nodes, lymph vessels, tonsils, thymous and the spleen.
- Pathogens invade the body while the T cells and B cells are the 2 types of white blood cells that fight back.
- Development of immunity happens over time.
- Vaccination is another way to develop immunity.

IV. Skeletal System

- Supports and moves body
 - o Bone is the structural material
- Protects organs
- Produces blood cells
 - o Bone marrow: Soft tissue in the center of most bones where both red and white blood cells formed.
- Parts of the System:
 - o Cartilage: Soft connective tissue on the ends of some bones. Acts as a cushion where bones meet.
 - o Ligaments: Tough fiber that connects bones together.
 - o Joint: point where 2 bones meet.

V. Respiratory System

- Provides body cells with oxygen and removes carbon dioxide that cells produce as waste.
- Air enters through your nose or mouth when you inhale. Mucus in the nasal passages and sinuses warms and moistens the air and traps

Explain the effects of the environment on the respiratory system.

dust particles and pathogens.

- Mucus is a thick secretion that moistens, lubricates and protects mucous membranes.
 - o Mucous membrane: a type of tissue that lines body cavities and secretes mucus.
- Composed of:
 - o Epiglottis: flap of tissue that guards the trachea, closing when anything goes to the stomach or esophagus.
 - o Trachea: windpipe; filters the air we breathe
 - o Cilia: lines bronchial tubes
 - o Bronchi: 2 tubes that branch off and take air directly to lungs.
 - o Lungs: oxygen is taken in and carbon dioxide is carried out.
 - o Bronchioles: small divisions of the bronchi.
 - o Aveoli: small air sacs that are the destination of air breathed in.
 - o Larynx: voice box.
 - o Diaphragm: strong wall of muscle that separates the chest from the abdomen.

- *Environmental Effects on Respiratory System:*

- o Ozone: Formed by chemical reactions in the atmosphere involving sunlight and various gases in motor vehicle exhaust and industrial emissions.
- o Respiratory irritant that causes:
 - Lung Inflammation
 - Decreases in lung function
 - Shortness of breath
 - Chest pain
 - Wheezing
 - Coughing and exacerbation of respiratory illness i.e. asthma.
 - Long term and repeated exposure may lead to chronically reduced lung function.

VI. Cardiovascular and Circulatory

- Transports nutrients, gases, hormones and cellular waste products throughout the body.
- Consists of:
 - o Blood
 - o Blood Vessels: tubes that carry blood throughout the body.
 - o Heart: acts as a pump for the circulatory system.
 - o Arteries: carry oxygen rich blood

<p>Analyze the interdependence of Body Systems</p>	<ul style="list-style-type: none"> away from the heart. o Veins: carry oxygen poor blood to the heart. o Capillaries: very tiny branches of arteries and veins; connect smallest arteries with smallest veins; provide directly to cells. <ul style="list-style-type: none"> - Blood is pumped from the right ventricle of the heart through the pulmonary artery to the lungs. - Blood pressure: the force of the blood pushing against the walls of the blood vessels. <p>VII. Interdependence of Body Systems</p> <ul style="list-style-type: none"> - Figure 6.2, Teen Health, <i>Body systems Working Together</i>, Glencoe Course 1, Multimedia Ed. 1999, pg. 159
<p>ACTIVITIES:</p> <p>Cooperative learning groups that each has a body system to learn and teach. <i>(Interpersonal Communication)</i></p> <p>Teen Health: Internet Connection, pg. 159 Glencoe Course 1 MM ED http://www.glencoe.com/sec/health <i>(Accessing information)</i></p> <p><i>Teacher directed differentiated instructional projects and activities are ongoing and based on student need.</i></p> <p>RESOURCES:</p> <p><i>Air pollution and children's health</i> (2003). Retrieved on June 21, 2006 from: www.oehha.gov</p> <p><i>Teen Health</i> (1999), Bronson Merki, M., pg. 159</p> <p><i>Health and Wellness</i> (2005) pp. R, Heit, P., Meeks L.</p> <p><i>Digestive System</i> (2003), Ho, W., Retrieved on June 21, 2006 from: http://kidshealth.org/parent/general/body_basics/digestive.html</p> <p><i>Digestive System</i> (2003), Ho, W., Retrieved on June 21, 2006 from: http://kidshealth.org/parent/general/body_basics/digestive.html</p>	<p>ASSESSMENTS:</p> <p>Through an extended response students describe the interdependence of body systems.</p> <p>Students label and describe the parts and functions of body systems.</p> <p>Students will design a pamphlet of the parts and functions of body systems.</p> <p>REMEDIATION:</p> <p>Students given labeled diagrams with parts and functions of body systems.</p> <p>Place student into a group with a successful student that is willing to help.</p> <p>ENRICHMENT:</p> <p>Have students invent devices made up of two or more kinds of body systems that interrelate. Ask them to explain how the devices work and how the systems work together.</p> <p>Students develop a situation in which one of the body systems will be in danger. They will have to give the causes, symptoms and treatments to the danger.</p> <p>Students call the local Department of Environmental Protection and find out the local air</p>

[s/heart.html](#)

Inside the Human body: The Respiratory System

Retrieved on June 21, 2006 from:

http://www.lung.ca/children/grades7_12/respiratory/respiratory_system.html

pollutants that may affect the respiratory system. They will also find out what can be done to care for the problem. Once information is received, students will write up a report on all of their findings.

Students analyze the interdependence of body parts and compare its relation to something in society. They will write up all the comparisons and their dependence on other things to function.