Unit Overview

Content Area: Sports Medicine

Unit Title: The Cardiovascular System and Blood.

Target Course/Grade Level: 11th/12th

Unit Summary: The heart pumps 2.5 billion times in an average life-span. This muscular pump forces blood through the body providing the necessary oxygen rich blood and nutrients to all body cells and removes waste.

Learning Targets

Standards

5.1 Science Practices: Science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

5.3 Life Science: Life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

Content Statements

CPI#	Cumulative Progress Indicator (CPI)
5.1.12.C.3	Consider alternative theories to interpret and evaluate evidence-based arguments.
5.1.12.D.2	Represent ideas using literal representations, such as graphs, tables, journals, concept maps, and diagrams.
5.3.12 A.1	Represent and explain the relationship between the structure and function of each class of complex molecules using a variety of models.
5.3.12.A.6	Describe how a disease is the result of a malfunctioning system, organ, and cell, and relate this to possible treatment interventions (e.g., diabetes, cystic fibrosis, lactose intolerance).
5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence To determine measures of central tendencies, causal/correlation relationships, and anomalous data.
5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical and computational tools.
5.1.12.C.1	Reflect on and revise understandings as new evidence emerges.

Unit Essential Questions	Unit Enduring Understandings
• How does the heart work? • What is a heart attack? • What is the function of blood?	• Functioning and importance of the heart. • Why blood is important.

Unit Learning Targets

Students will...

- Discuss the functions of the organs of the cardiovascular system.
- Identify and locate the major parts of the heart and discuss the function of each part.
- Trace the pathway of the blood through the heart and the vessels of coronary circulation.
- Describe how heart sounds are produced.
- Compare the structures and functions of the major types of blood vessels.
- Describe how substances are exchanged in capillaries.
- Describe how blood pressure is produced and controlled.
- Describe the mechanisms that aid in returning venous blood to the heart.
- Identify and locate the major arteries and veins.
- Explain diseases of the heart and life-span changes to the cardiovascular system.

Evidence of Learning

Summative Assessment: Test

Equipment Needed: Internet, TV, DVD/VHS Player, Microscopes, Cow's Hearts
Teacher Resources: Internet
Hole's Human Anatomy and Physiology, by Shier, Butler and Lewis
Athletic Training and Sports Medicine, by American Academy of Orthopaedic Surgeons
Human Biology by Mader

Formative Assessments

- **Lab Reports**
- **Quizzes**
- **Test**
- **Project**

Lesson Plans

Lesson #	Lesson Name	Time frame (hours/days)
1	Function of the cardiovascular systems	2 days
2	Structure of the heart.	3 days
3	Heart Actions	1 day
4	Blood Vessels	1 days
5	Blood Pressure	1 days
6	Path of Circulation	2 days
7	Blood Types	1days
8	Diseases and Life-Span Changes	2 days

Teacher Notes:

Curriculum Development Resources
Click links below to access additional resources used to design this unit:
http://www.nhlbi.nih.gov/health/dci/Diseases/hhw/hhw_anatomy.html
http://highered.mcgraw-hill.com/sites/0072919329/student_view0/index.html
http://www.texasheartinstitute.org/hic/anatomy/anatomy2.cfm?&RenderForPrint=1
http://science.howstuffworks.com/environmental/life/human-biology/heart.htm

Unit Overview

Content Area: Sports Medicine

Unit Title: Digestion

Target Course/Grade Level: 11th/12th

Unit Summary: Digestion is the mechanical and chemical breakdown of foods into forms that cell membranes can absorb. The organs of the digestive system carry out these processes, as well as ingestion, propulsion, absorption and defecation.

Learning Targets

Standards

5.1 Science Practices: Science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

5.3 Life Science: Life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

Content Statements

CPI#	Cumulative Progress Indicator (CPI)
5.1.12.C.3	Consider alternative theories to interpret and evaluate evidence-based arguments.
5.1.12.D.2	Represent ideas using literal representations, such as graphs, tables, journals, concept maps, and diagrams.
.3.12 A.1	Represent and explain the relationship between the structure and function of each class of complex molecules using a variety of models.
5.3.12.A.6	Describe how a disease is the result of a malfunctioning system, organ, and cell, and relate this to possible treatment interventions (e.g., diabetes, cystic fibrosis, lactose intolerance).
5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence To determine measures of central tendencies, causal/correlation relationships, and anomalous data.
5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical and computational tools.
5.1.12.C.1	Reflect on and revise understandings as new evidence emerges.

Unit Essential Questions

- What happens to the food we eat?
- How do nutrients get from food into our bodies?

Unit Enduring Understandings

- How the digestive system works.

Unit Learning Targets

Students will...

- Describe the general functions of the digestive system.
- Name the major organs of the digestive system.
- Describe the structure of the wall of the alimentary canal.
- Describe the functions of the mouth, teeth and salivary glands.
- Explain movement of material through the alimentary canal.
- Explain how the products of digestion are absorbed.
- Describe diseases and life span changes of the digestive system.

Evidence of Learning

Summative Assessment: Test

quipment Needed: Internet, TV, DVD/VHS Player, Sheep Digestive Tract

Teacher Resources

Internet

Hole's Human Anatomy and Physiology, by Shier, Butler and Lewis

Athletic Training and Sports Medicine, by American Academy of Orthopaedic Surgeons

Human Biology by Mader

Formative Assessments

- **Lab Reports**
- **Quizzes**
- **Test**

Lesson Plans

Lesson #	Lesson Name	Time frame (hours/days)
1	Characteristics of the Alimentary Canal	1 day
2	Mouth and Salivary Glands	1 day
3	Esophagus and Swallowing	1 day
4	Stomach	1 day
5	Pancreas and Liver	1 day
6	Small and Large Intestines	1 day
7	Digestion Process	2 days
8	Diseases and Life-Span Changes	2 days

Teacher Notes:

Curriculum Development Resources

Click links below to access additional resources used to design this unit:

http://www.coolopticalillusions.com/

http://digestive.niddk.nih.gov/ddiseases/pubs/yrdd/

http://www.enchantedlearning.com/subjects/anatomy/digestive/

Unit Overview

Content Area: Sports Medicine

Unit Title: Infectious Diseases

Target Course/Grade Level: 11th/12th

Unit Summary

Epidemiology is the study of diseases in populations. Fields of study include the characteristics of the pathogens how they cause disease, how the disease spreads and treatment and prevention.

Learning Targets

Standards

5.3 Life Science: Life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

5.1 Science Practices: Science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

CPI#	Cumulative Progress Indicator (CPI)
5.3.12 A.1	Represent and explain the relationship between the structure and function of each class of complex molecules using a variety of models.
5.3.12.A.6	Describe how a disease is the result of a malfunctioning system, organ, and cell, and relate this to possible treatment interventions
5.3.12.C.1	Analyze the interrelationships and interdependencies among different organisms, and explain how these relationships contribute to the stability of the ecosystem.
5.3.12.C.2	Model how natural and human-made changes in the environment will affect individual organisms and the dynamics of populations.
5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence to determine measures of central tendencies, causal/correlational relationships, and anomalous data.
5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical, and computational tools.
5.1.12.B.3	Revise predictions and explanations using evidence, and connect explanations/arguments to established scientific knowledge, models, and theories.

Unit Essential Questions

- What causes sickness?
- How do diseases spread?

Unit Enduring Understandings

- How new diseases emerge and spread.

Unit Learning Targets

Students will...

- Compare and contrast viral and bacterial disease.
- Explain how disease spreads.
- Relate disease to pandemics.
- Describe how diseases become antibiotic resistant.
- List diseases common to athletes.

Evidence of Learning

Summative Assessment: Test

Equipment Needed: Internet, TV, DVD/VHS Player

Teacher Resources:

Internet

Hole's Human Anatomy and Physiology, by Shier, Butler and Lewis
thletic Training and Sports Medicine, by American Academy of Orthopaedic Surgeons
Human Biology by Maher

Formative Assessments

- **Lab Reports**
- **Quizzes**
- **Test**

Lesson Plans		
Lesson #	**Lesson Name**	Time frame (hours/days)
1	Viruses	2days
2	Spread of Diseases and Pandemics	3 days
3	Emerging Diseases	2 days
4	Antibiotic Resistance	1 day

Teacher Notes:

Curriculum Development Resources

Click links below to access additional resources used to design this unit:

http://www.news-medical.net/health/What-is-a-Virus.aspx
http://www.google.com/search?q=viruses&hl=en&qscrl=1&nord=1&rlz=1T4ADFA_enUS394US394&prmd=imvns&tbm=isch&tbo=u&source=univ&sa=X&ei=pp2dT-OdIKj16AHEwOTmDg&sqi=2&ved=0CFIQsAQ&biw=1191&bih=600
http://science.howstuffworks.com/environmental/life/cellular-microscopic/virus-human.htm
http://www.medicinenet.com/infectious_disease/focus.htm
http://www.mayoclinic.com/health/infectious-diseases/DS01145
http://emedicine.medscape.com/infectious_diseases
http://www.nlm.nih.gov/medlineplus/infectiousdiseases.html
http://www.medicinenet.com/script/main/alphaidx.asp?p=r_63

Unit Overview

Content Area: Sports Medicine

Unit Title: Levels of Organization and the Integumentary System

Target Course/Grade Level: 11th/12th

Unit Summary: The human bodies systems and organization.

Learning Targets

Standards

5.1 Science Practices: Science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

5.3 Life Science: Life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

Content Statements

CPI#	Cumulative Progress Indicator (CPI)
.1.12.C.3	Consider alternative theories to interpret and evaluate evidence-based arguments.
5.1.12.D.2	Represent ideas using literal representations, such as graphs, tables, journals, concept maps, and diagrams.
5.3.12 A.1	Represent and explain the relationship between the structure and function of each class of complex molecules using a variety of models.
5.3.12.A.6	Describe how a disease is the result of a malfunctioning system, organ, and cell, and relate this to possible treatment interventions (e.g., diabetes, cystic fibrosis, lactose intolerance).

Unit Essential Questions	Unit Enduring Understandings
• What is the form and organization of body parts? • What is the integumentary system of the body?	• Systems and organization of the body. • The function of the integumentary system.

Unit Learning Targets

Students will...

- State the function of the integumentary system.
- Describe the structure of the hair and nails
- Identify parts of the skin.

Evidence of Learning

Summative Assessment: Test

Equipment Needed: Internet, TV, DVD/VHS Player

Teacher Resources:

Internet

Hole's Human Anatomy and Physiology, by Shier, Butler and Lewis

Athletic Training and Sports Medicine, by American Academy of Orthopaedic Surgeons

Formative Assessments

- **Lab Reports**
- **Quizzes**
- **Test**

Lesson Plans

Lesson #	Lesson Name	Time frame (hours/days)
1	Systems of the Human Body	2 days
2	Organization and Homeostasis of the Human Body	1 day
3	Anatomical Terminology	2 days
4	Skin and Its Tissues	1 day
5	Structures of the Skin	1 day
	Regulation of Body Temperature	1 day
7	Wounds and Injury	1 day

Teacher Notes:

Curriculum Development Resources

Click links below to access additional resources used to design this unit:

http://health.howstuffworks.com/human-body

http://www.biol.wwu.edu/lapsansk/bio348.htm

http://highered.mcgraw-hill.com/sites/0072919329/student_view0/index.html

http://www.aclsolutions.com/anatomy.php

http://www.cbu.edu/~aross/APIhome.htm#L5_6

Unit Overview

Content Area: Sports Medicine

Unit Title: Muscular System

Target Course/Grade Level: 11th/12th

Unit Summary: All movement of the human body requires use of the muscular system. Muscles are organs composed of specialized cells. The body has three types of muscles smooth, cardiac and skeletal.

Learning Targets

Standards

5.1 Science Practices: Science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

5.3 Life Science: Life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

Content Statements

CPI#	Cumulative Progress Indicator (CPI)
5.1.12.C.3	Consider alternative theories to interpret and evaluate evidence-based arguments.
5.1.12.D.2	Represent ideas using literal representations, such as graphs, tables, journals, concept maps, and diagrams.
3.12 A.1	Represent and explain the relationship between the structure and function of each class of complex molecules using a variety of models.
5.3.12.A.6	Describe how a disease is the result of a malfunctioning system, organ, and cell, and relate this to possible treatment interventions (e.g., diabetes, cystic fibrosis, lactose intolerance).
5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence To determine measures of central tendencies, causal/correlation relationships, and anomalous data.
5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical and computational tools.
5.1.12.D.1:	Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.

Unit Essential Questions

- What is the role of muscles in movement?
- How do muscles work?

Unit Enduring Understandings

- The role of muscles.
- Muscle types
- Problems with muscles.

Unit Learning Targets

Students will...

- Compare three kinds of muscles.
- Explain how muscles contract to move body parts.
- Relate how muscles work in pairs.
- Explain why exercise is important.
- Describe problems of the muscular system.

Evidence of Learning

ummative Assessment: Test

Equipment Needed: Internet, TV, DVD/VHS Player, Microscopes,

Teacher Resources: Internet

Hole's Human Anatomy and Physiology, by Shier, Butler and Lewis

Athletic Training and Sports Medicine, by American Academy of Orthopaedic Surgeons

Formative Assessments

- **Lab Reports**
- **Quizzes**
- **Test**

Lesson Plans

Lesson #	Lesson Name	Time frame (hours/days)
1	Structure and contraction of a skeletal muscle	1 day
2	Smooth Muscles	1 day
3	Cardiac Muscles	1 day
4	Skeletal Muscles	1 day
5	Injuries of Muscles	1 day
6	Life-Span Changes	1 day

Teacher Notes:

Curriculum Development Resources

Click links below to access additional resources used to design this unit:

http://www.biol.wwu.edu/lapsansk/348/fractures.pdf

http://www.biol.wwu.edu/lapsansk/348/fx_repair.jpg

Interwrite Sims Program

http://highered.mcgraw-hill.com/sites/0072919329/student_view0/index.html

http://www.aclsolutions.com/anatomy.php

http://www.cbu.edu/~aross/APIhome.htm#L5_6

Unit Overview

Content Area: Sports Medicine

Unit Title: Nutrition and the Athlete

Target Course/Grade Level: 11th/12th

Unit Summary: Nutrition is an important factor to the athlete. Malnutrition causes many problems in athlete. Being overweight is a growing problem in the United States.

Learning Targets

Standards

5.1 Science Practices: Science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

CPI#	Cumulative Progress Indicator (CPI)
5.1.12.A.1	Refine interrelationships among concepts and patterns of evidence found in different central scientific explanations.
5.1.12.A.2	Develop and use mathematical, physical, and computational tools to build evidence-based models and to pose theories.
5.3.12.B.2	Use mathematical formulas to justify the concept of an efficient diet.
5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence to determine measures of central tendencies, causal/correlational relationships and anomalous data.
5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical, and computational tools.
5.1.12.B.3	Revise predictions and explanations using evidence, and connect explanations/arguments to established scientific knowledge, models, and theories.
5.1.12.B.4	Develop quality controls to examine data sets and to examine evidence as a means of generating and reviewing explanations.

Unit Essential Questions	Unit Enduring Understandings
• How many calories should we eat per day? • Why are so many people overweight?	• How calories are counted. • Eating healthy to maintain desirable weig • How exercising maintains weight.

Unit Learning Targets

Students will...

- Distinguish among nutrition, nutrients and essential nutrients.
- List the major sources of carbohydrates, lipids and proteins.
- Explain how energy values of foods are determined.
- Explain the factors that affect an individual's energy requirements.
- Explain what is meant by desirable weight.
- List important vitamins and minerals.
- Describe and adequate diet.
- Analyze Body Mass Index (BMI).
- List factor that may lead to inadequate nutrition.

Evidence of Learning

Summative Assessment: Test

Equipment Needed: BMI meter, Internet, TV, DVD/VHS Player

Teacher Resources
ıternet
Hole's Human Anatomy and Physiology, by Shier, Butler and Lewis
Athletic Training and Sports Medicine, by American Academy of Orthopaedic Surgeons
Discovery Channel School Science Collection
Human Biology by Maher

Formative Assessments
- Lab Reports
- Quizzes
- Test

Lesson Plans		
Lesson #	Lesson Name	Time frame (hours/days)
1	Calories	1 day
2	Carbohydrates	1 day
3	Fats	1 day
4	Protein	1 day
5	Vitamins and Minerals	1 day
6	Energy Expenditures	1 day
7	Counting Calories	2 days
8	Healthy Eating	2 days
9	Water and Hydration	1 day

Teacher Notes:

Curriculum Development Resources
Click links below to access additional resources used to design this unit:
http://www.ext.colostate.edu/pubs/foodnut/09362.html
http://www.extension.umn.edu/family/W00030.pdf
http://www.fitness.gov/nutrition.pdf

Unit Overview

Content Area: Sports Medicine

Unit Title: The Senses

Target Course/Grade Level: 11th/12th

Unit Summary

Each type of sensory receptor detects a particular type of stimulus. Taste and smell involve activity of sensory receptors in the mouth and nose. Vision depends on the receptors in the eyes, optic nerve and visual cortex. Hearing involves sensory receptors in the ears, cochlear nerve and auditory cortex. The inner ear has receptors for equilibrium or balance. At times the brain is challenged with receiving conflicting messages from the other sense.

Learning Targets

Standards

5.1 Science Practices: Science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

CPI#	Cumulative Progress Indicator (CPI)
5.1.12.A.1	Refine interrelationships among concepts and patterns of evidence found in different central scientific explanations.
5.1.12.A.2	Develop and use mathematical, physical, and computational tools to build evidence-based models and to pose theories.
5.1.12.A.3	Use scientific principles and theories to build and refine standards for data collection, posing controls, and presenting evidence.
5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence to determine measures of central tendencies, causal/correlational relationships, and anomalous data.
5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical, and computational tools.
5.1.12.B.3	Revise predictions and explanations using evidence, and connect explanations/arguments to established scientific knowledge, models, and theories.
5.1.12.B.4	Develop quality controls to examine data sets and to examine evidence as a means of generating and reviewing explanations.

Unit Essential Questions	Unit Enduring Understandings
• How do our senses work?	• Understand how important sense are in our world and responses to our environment.

Unit Learning Targets

Students will...

- Describe how the eye works.
- Identify the parts of the eye.
- Explain farsighted and nearsighted problems.
- Describe how the ear works.
- Identify parts of the ear.
- Explain hearing loss and causes.
- Explain how taste and smell is related.
- Predict taste without smelling.

Evidence of Learning

ummative Assessment: Test

Equipment Needed: Internet, TV, DVD/VHS Player, sheep eyes, flavored jelly beans, celery, apple, pear

Teacher Resources:

Internet
Hole's Human Anatomy and Physiology, by Shier, Butler and Lewis
Athletic Training and Sports Medicine, by American Academy of Orthopaedic Surgeons
Human Biology by Maher

Formative Assessments

- **Lab Reports**
- **Quizzes**
- **Test**

Lesson Plans

Lesson #	Lesson Name	Time frame (hours/days)
1	Parts of the Eye	2 days
2	Visual Problems and Disease	1 day
3	Parts of the Ear	1 day
4	Hearing Loss and Disease	1 day
5	Relationship of Smell and Taste	1 day

Teacher Notes:

Curriculum Development Resources

Click links below to access additional resources used to design this unit:
http://science.jburroughs.org/resources/skeleton/eye/eyedissection.html
http://www.eschoolonline.com/company/examples/eye/eyedissect.html
http://www.exploratorium.edu/learning_studio/cow_eye/step01.html
http://www.everydayhealth.com/ears-nose-throat-pictures/common-ears-nose-throat-complaints.aspx#/slide-2
http://library.thinkquest.org/3750/taste/taste.html
http://faculty.washington.edu/chudler/tasty.html

Unit Overview

Content Area: Sports Medicine

Unit Title: The Skeletal System

Target Course/Grade Level: 11th/12th

Unit Summary: Bones are the organs of the skeletal system, they support and protect softer tissues, provide points of attachment for muscles, house blood-producing cells and store inorganic salts.

Learning Targets

Standards

5.1 Science Practices: Science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

5.3 Life Science: Life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

CPI#	Cumulative Progress Indicator (CPI)
5.1.12.C.3	Consider alternative theories to interpret and evaluate evidence-based arguments.
5.1.12.D.2	Represent ideas using literal representations, such as graphs, tables, journals, concept maps, and diagrams.
5.3.12 A.1	Represent and explain the relationship between the structure and function of each class of complex molecules using a variety of models.
5.3.12.A.6	Describe how a disease is the result of a malfunctioning system, organ, and cell, and relate this to possible treatment interventions (e.g., diabetes, cystic fibrosis, lactose intolerance).
5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence To determine measures of central tendencies, causal/correlation relationships, and anomalous data.
5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical and computational tools.
5.1.12.D.3	Demonstrate how to use scientific tools and instruments and knowledge of how to handle animals with respect for their safety and welfare.

Unit Essential Questions

- What is the role of the skeletal system?
- What bones are in the skeletal system?

Unit Enduring Understandings

- Role of Skeleton
- Bone Structure and Growth

Unit Learning Targets

Students will…

- Explain the functions and growth of the skeleton.
- Classify bones.
- Locate and identify bones.
- Identify differences between male and female skeletons.
- Describe how bones are held together.
- Identify the types of joints.

- Discuss problems and changes of the skeletal system.
- Explain the purpose of new designs for products.
- Differentiate between ligaments and tendons.

Evidence of Learning

Summative Assessment: Tes

Equipment Needed: Microscopes, Internet, TV, DVD/VHS Player, Chicken Wings

Teacher Resources:
Internet
Hole's Human Anatomy and Physiology, by Shier, Butler and Lewis
Athletic Training and Sports Medicine, by American Academy of Orthopaedic Surgeons

Formative Assessments

- **Lab Reports**
- **Quizzes**
- **Test**

Lesson Plans

Lesson #	Lesson Name	Time frame (hours/days)
1	Bone Structure	2
	Bone Function	1
3	Skeletal Organization	1
4	Skull and Vertebral Column	2
5	Classification of Joints	1
6	Synovial Joints	1
7	Types of Joint Movement	2
8	Bone and Joint Injuries	2
9	Life-Span Changes	1

Teacher Notes:

Curriculum Development Resources
Click links below to access additional resources used to design this unit:
http://www.biol.wwu.edu/lapsansk/bio348.htm
http://www.biol.wwu.edu/lapsansk/348/fractures.pdf
http://www.biol.wwu.edu/lapsansk/348/fx_repair.jpg
Interwrite Sims Program
http://highered.mcgraw-hill.com/sites/0072919329/student_view0/index.html
http://www.aclsolutions.com/anatomy.php
http://www.cbu.edu/~aross/APIhome.htm#L5_6