

Teaching Unit: *Chemistry of Life*

Essential Understandings

Elements and Atoms

Molecules and Compounds

Water and Living Things

Molecules of Life

Carbohydrates, Lipids, Proteins and Nucleic Acids.

Sub Topic:

Knowledge and Skills

Explain that All matter is composed of elements

Understand that atoms react forming ions, molecules and compounds

Understand that the Existence of living things depends on characteristics of water

Explain and identify Acids, Bases and pH scale

Identify and explain that Molecules found in cells are carbohydrates, lipids, proteins and nucleic acids.

Teaching Unit: *Cell Structure and Function*

Essential Understandings

Cell Size

Cellular Organization

Cellular Metabolism

Stem Cells.

Sub Topic:

Knowledge and Skills

Identify, locate and define all cell organelle's and their function

Identify and define what stem cells are and analyze the controversy surrounding stem cells

Teaching Unit: ***Organization and Regulation of Body Systems***

Essential Understandings

Types of Tissues

Body Cavities and Membranes

Organ Systems

Homeostasis.

Sub Topic:

Knowledge and Skills

Define, identify and give examples of epithelial, connective, muscular and nervous tissues.

Define and identify the body cavities and membranes.

Identify the major body systems and explain what makes up the Integumentary System.

Define homeostasis and how it is maintained in the human body.

Teaching Unit: ***Digestive System***

Essential Understandings

Structures and Functions of the Digestive System and its Organs

Digestive System Disorders and Diseases

How the Digestive System functions with other systems

Major Macro and Micronutrients for the body

Eating Disorders

Sub Topic:

Knowledge and Skills

Be able to describe and identify the functions and structures of the digestive system

Be able to discuss several digestive system diseases or disorders including eating disorders

Identify the essential macro and micro nutrients for the body and explain their functions

Teaching Unit: ***Cardiovascular System***

Essential Understandings

Major structures and functions of the Cardiovascular system, including all the major organs

Structures of the heart

Passage of blood through the heart

Pulse and blood pressure

Cardiovascular disorders;

Sub Topic:

Knowledge and Skills

Explain the structures and functions of the Cardiovascular system, including all the major organs

Diagram the structures of the heart, and explain the passage of blood through the heart

Explain the concepts of pulse and blood pressure

Recognize and describe the following cardiovascular disorders;

Hypertension
atherosclerosis
stroke
heart attack
aneurysm
varicose veins

Teaching Unit: ***Respiratory System***

Essential Understandings

Major Structures and Functions of the Respiratory System

Mechanisms of Breathing

Gas Exchange in the Body

Upper and Lower Respiratory Tract Infections

Sub Topic:

Knowledge and Skills

Be able to describe and identify the major structures and functions of the respiratory system

Be able to explain the mechanisms of breathing, including:

Inspiration

Expiration

external and internal respiration

Be able to identify and describe the following Upper and Lower Respiratory

Infections:

Sinusitis

Otitis Media

Tonsillitis

Laryngitis

Pneumonia

Tuberculosis

Bronchitis

Emphysema

Asthma

Lung Cancer

Teaching Unit: ***Skeletal System***

Essential Understandings

What Tissues Makeup the Skeletal System

How Do Bones Grow and Repair Themselves

Name, Describe and Locate All of the Bones of the Axial and Appendicular Skeleton

Name, Describe and Locate the Various Joints of the Skeletal System

Sub Topic:

Knowledge and Skills

Identify and Describe the Tissues That Makeup the Skeletal System

Describe the Different Bone Cells and How They Contribute To Bone Growth and Repair

Identify All Of The Bones of the Axial and Appendicular Skeleton

Describe and Identify the Various Joints of the Skeletal System

Teaching Unit: ***Composition and Function of Blood***

Essential Understandings

What are the components of blood and their functions?

How do nutrients and wastes move throughout the body?

What are blood types?

Sub Topic:

Knowledge and Skills

Identify and describe all the components of blood:

Red Blood Cells

White Blood Cells

Plasma

Platelets

Describe several Blood Disorders

Anemia

Hemophilia

Hemolytic Disease

Be able to explain how nutrients and waste move throughout the body and our exchanged from blood to tissue.

Capillary Exchange

Be able to describe the Blood Typing System including RH factors.

Teaching Unit: ***Muscular System***

Essential Understandings

Function of Skeletal Muscles

Mechanism of Muscle Fiber Contraction

Whole Muscle Contraction

Energy for Muscle Contraction

Sub Topic:

Knowledge and Skills

Identify and Describe the Skeletal Muscles

Describe the Parts Involved and How a Muscle Contracts

Explain the Function of Nerve Cells/Nervous System In Muscle Contraction

Explain the Role of Exercise In the Muscular System

Explain the Difference Between
