Science 8

Unit B: Cells and Systems

Student Name:

_____

1.0 Living things share certain characteristics and have structures to perform functions.

1.1 The Characteristics of Living Things

6 Characteristics of Living Things

Organisms:

Cells:

Energy:

Responding to the Environment:

Growth and Development:

Reproduction:

Adaptations:

1.2 Structure and Function

Structures:

Function:

Different Structures for Similar Functions

Variations in Structures

Variations in Bill Shape

1.3 Organs and Organ System

Organ:

Organ system:

An example of some of your body's organ system:

Topic 2.0
Cells play a vital role in living things.

Capillaries:

2.1 The Microscope extends the Sense of Sight

Microscope Parts and their Functions

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.

2.2 The Cell is the Basic Unit of Life

The parts of the Cell Structure Include:

1.
2.
3.
4.
5.

Viewing Plant and Animal Cells

The Vital Roles that Cell Structures Play

Organelles:

Please draw a diagram of the following: (Page 109)

ANIMAL CELL **PLANT CELL**

2.3 **Organisms can be Single-celled or Multicelled**

Mycoplasma:

Multicellular:

Unicellular:

Micro-organisms:

Unicellular VS. Multicellular

Common Unicellular Organisms
Amoeba

Paramecium

2.4 How Substances Move into and Out of Cells

Diffusion:

The Cell Membrane and Diffusion – Diagram (page 115)
Selectively Permeable:

The Cell Membrane and Osmosis
Osmosis:

2.5 Cells in Multicellular Organisms combine to form Tissues and Organs

Cell Reproduce

Multicellular Organisms Have Specialized Cells

Specialized Cells

Red Blood Cells:

Marrow:

Similar Cells combine to form Tissue

4 Different tissue types:

1.
2.
3.
4.

Tissues in Plants

Plants have 3 tissue types:

1.

2.

3.

3.0 Healthy human Function Depends On A Variety of Interacting and Reacting Systems

React:

Interact:

3.1 Digestive System

Types of Digestion

Mechanical digestion:

Chemical digestion:

Enzymes:

Food's Path through The Digestive System

The Mouth and Esophagus

Peristalsis:

The Stomach
Gastric Juices:

The Small Intestine, Pancreas, Liver and Gall Bladder

Villi:

Microvilli:

The Large Intestine

3.2 Respiratory

Breathing

Diaphragm:

The Gas Exchange Process

Bronchi:

Bronchioles:

Alveoli:

3.3 Circulatory System

The Heart:

Atria:

Ventricles:

Arteries, Veins, and Capillaries
Arteries:

Veins:

Capillaries:

The Blood

White Blood Cells:

Platelets:

Red Blood Cells

Plasma

3.4 Excretory System

Excretion:

Waste products

The Liver

Urea

The Kidneys

The Formation of Urine

Nephrons:

The Skin

Urine Can Reveal Diseases

Dialysis

3.5 Nervous System

Neurons

Nervous Tissue:

Neurons:

Dendrites:

Axon:

How the Nervous System is Organized
Central Nervous System:

Peripheral Nervous System:

The Peripheral Nervous System
2 types of Neurons: 1)
2)

Autonomic Nervous System:

The Central Nervous System

The Reflex Response
Reflex:

An Uneven Sense of Touch
**Page 151 ** Figure 3.36 **

4.0 Scientific investigation Leads to New Knowledge About Body Systems and New Medical Applications.

4.1 Developing a Theory for Disease

The First Vaccine

Vaccine:

Smallpox:

4.2 Factors that Affect the Healthy function of Body Systems

Factors that affect Human health

-
-
-
-

Factors affecting The Respiratory System
The contents of Cigarettes
Tar:
Carbon monoxide:
Nicotine:
Atherosclerosis: