



Anatomy and Physiology High School

1.0 Understands and applies the skills of scientific inquiry.

- 1.1 Uses scientific inquiry to design, conduct, and analyze scientific investigations.
- 1.2 Identifies questions and concepts that guide scientific investigations.
- 1.3 Understands that different kinds of questions suggest different kinds of investigations.
- 1.4 Uses appropriate models when necessary.
- 1.5 Develops hypothesis.
- 1.6 Identifies controls and variables.
- 1.7 Designs and executes scientific investigations.
- 1.8 Selects and uses appropriate tools, technology and techniques to gather data.
- 1.9 Makes appropriate qualitative and quantitative observations.
- 1.10 Recognizes the importance of multiple trials with reproducible results.
- 1.11 Organizes data and observations efficiently, including creating appropriate tables and graphs.
- 1.12 Analyzes and evaluates the data and observations.
- 1.13 Integrates data and observations to draw appropriate conclusions.
- 1.14 Accounts for errors in investigations.
- 1.15 Uses evidence to infer possible applications or extensions for further inquiry.
- 1.16 Uses various methods to communicate experimental methods, observations, results, and interpretations.
- 1.17 Uses appropriate safety procedures when conducting investigations.
- 1.18 Recognizes that safety concerns change with different procedures.
- 1.19 Knows locations and appropriate uses of the safety equipment in the classroom.

3.0 Understands and applies concepts, principles and theories pertaining to life and its interactions.

- 3.1 Understands and applies knowledge of the cell and its processes.
 - Identifies cell structures and explain how their form reflects their function.
 - Describes cell transport processes and their importance to cell regulation.
 - Analyzes and reports how different environmental conditions can affect cell processes.

Explains how cell function is dependent on chemical reactions and the role enzymes play in biological reactions.
Understands how cell metabolism changes based on cell needs.
Recognizes the importance of cell specialization in the development of organisms.
Identifies the cells of the body tissues.
Compares and contrast the body tissues.
Applies the importance of the tissue characteristics to their locations in the body.

3.2 Understand and apply knowledge of the molecular basis of heredity.

Explains the structure roles of DNA in cells.
Applies the process of base pairing to explain chromosome replication.
Hypothesizes why the structure of DNA allows it to serve its purpose in living organisms.
Summarizes the role of DNA and RNA in protein synthesis.
Summarizes how genes direct and control protein synthesis.
Explains the role of proteins in determining the phenotype of organisms.

3.3 Understands the identification, organization and structure of living organisms.

Identifies the characteristics that all living things share in common.
Understands that all living systems have levels of organization (i.e. cells, tissues etc.).
Recognizes that disease is a breakdown in the structures or functions of an organism.
Justifies the importance of homeostasis to the body and explain examples.
Identifies the different tissues of the body from their characteristics.
Compares the structure and function of the different body membranes.
Explains the structure of the integumentary system and relate this to its functions.
Discusses the structure of the skeletal system and apply this to its functions.
Examines the structure of the muscular system and relate this to its functions.
Organizes the structure of the digestive system and apply this to its functions.
Reports the structure of the cardiovascular system and relate this to its functions.
Clarifies the structure of the nervous system and apply this to its functions.
Selects from a variety of systems and summarize the major organs and functions of it systems include: lymphatic, urinary, respiratory,

endocrine, reproductive.

Describes the relationship between the body systems and how they all work to help the body function.

5.0 Understands the Nature of Science.

5.1 Understands how science develops and changes over time.

5.2 Explains that all scientific ideas are tentative and subject to change and improvement with data to support this.

5.3 Explains that most core scientific theories have large quantities of experimental and observational evidence.

5.4 Understands that scientific innovators have had difficulty breaking through the accepted ideas of their time to reach new conclusions that are considered to be common knowledge.

5.5 Understands that people continue inventing new ways of doing things, solving problems, and getting work done.

5.6 Understands the dynamic relationship between science and society.

5.7 Knows that human behavior can affect earth processes and systems.

5.8 Knows ways in which humans can modify ecosystems and cause irreversible effects.