

Science Unit 5: Human Body (Grade 4)

Content Area: **Science**
Course(s): **Science 4**
Time Period: **Marking Period 4**
Length: **6-8 weeks**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

SCI.3-4.5.1.4.A.1	Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.
SCI.3-4.5.1.4.A.2	Use outcomes of investigations to build and refine questions, models, and explanations.
SCI.3-4.5.1.4.A.3	Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.
SCI.3-4.5.1.4.A.a	Fundamental scientific concepts and principles and the links between them are more useful than discrete facts.
SCI.3-4.5.1.4.A.b	Connections developed between fundamental concepts are used to explain, interpret, build, and refine explanations, models, and theories.
SCI.3-4.5.1.4.A.c	Outcomes of investigations are used to build and refine questions, models, and explanations.
SCI.3-4.5.1.4.B.1	Design and follow simple plans using systematic observations to explore questions and predictions.
SCI.3-4.5.1.4.B.2	Measure, gather, evaluate, and share evidence using tools and technologies.
SCI.3-4.5.1.4.B.3	Formulate explanations from evidence.
SCI.3-4.5.1.4.B.4	Communicate and justify explanations with reasonable and logical arguments.
SCI.3-4.5.1.4.B.a	Building and refining models and explanations requires generation and evaluation of evidence.
SCI.3-4.5.1.4.B.b	Tools and technology are used to gather, analyze, and communicate results.
SCI.3-4.5.1.4.B.c	Evidence is used to construct and defend arguments.
SCI.3-4.5.1.4.B.d	Reasoning is used to support scientific conclusions.
SCI.3-4.5.1.4.C.1	Monitor and reflect on one's own knowledge regarding how ideas change over time.
SCI.3-4.5.1.4.C.2	Revise predictions or explanations on the basis of learning new information.
SCI.3-4.5.1.4.C.3	Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.
SCI.3-4.5.1.4.C.a	Scientific understanding changes over time as new evidence and updated arguments emerge.
SCI.3-4.5.1.4.C.b	Revisions of predictions and explanations occur when new arguments emerge that account more completely for available evidence.
SCI.3-4.5.1.4.C.c	Scientific knowledge is a particular kind of knowledge with its own sources, justifications, and uncertainties.
SCI.3-4.5.1.4.D.1	Actively participate in discussions about student data, questions, and understandings.
SCI.3-4.5.1.4.D.2	Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.
SCI.3-4.5.1.4.D.3	Demonstrate how to safely use tools, instruments, and supplies.

SCI.3-4.5.1.4.D.4	Handle and treat organisms humanely, responsibly, and ethically.
SCI.3-4.5.1.4.D.a	Science has unique norms for participation. These include adopting a critical stance, demonstrating a willingness to ask questions and seek help, and developing a sense of trust and skepticism.
SCI.3-4.5.1.4.D.b	In order to determine which arguments and explanations are most persuasive, communities of learners work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories (e.g., scientific argumentation and representation).
SCI.3-4.5.1.4.D.c	Instruments of measurement can be used to safely gather accurate information for making scientific comparisons of objects and events.
SCI.3-4.5.1.4.D.d	Organisms are treated humanely, responsibly, and ethically.
SCI.3-4.5.3.4.A.3	Describe the interactions of systems involved in carrying out everyday life activities.
SCI.3-4.5.3.4.A.a	Living organisms: Interact with and cause changes in their environment. Exchange materials (such as gases, nutrients, water, and waste) with the environment. Reproduce. Grow and develop in a predictable manner.
SCI.3-4.5.3.4.A.b	Essential functions required for the well-being of an organism are carried out by specialized structures in plants and animals.
SCI.3-4.5.3.4.A.c	Essential functions of the human body are carried out by specialized systems: Digestive, Circulatory, Respiratory, Nervous, Skeletal, Muscular, Reproductive.

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- How does blood flow through your body?
- How does the human body get energy and nutrients from the food we eat?
- How does the respiratory system work?
- How does your body get rid of waste?
- What happens when you breathe?
- What is a cell and what is its purpose?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- The human digestive system is a series of organs that converts food into essential nutrients that are absorbed into the body and moves the unused waste material out of the body.
- Cells are the basic building blocks of all living things. They provide structure for the body, take in nutrients from food, convert those nutrients into energy, and carry out specialized functions.
- Inhaling brings air into the lungs, and exhaling forces used air out of the lungs; breathing depends on the action of the diaphragm and rib muscles.
- Maintaining the body's water balance is essential to the health of the digestive, circulatory, and excretory systems.
- Oxygen enters the blood from the lungs and is carried to body cells; waste carbon dioxide given off by cells is removed from the blood through the lungs.
- Skin, lungs, and kidneys, which make up the excretory system, remove wastes, such as water, oils, and

salts, from the body.

- The heart, blood vessels, and blood make up the circulatory system; the parts of this system work together to carry nutrients and oxygen to, and wastes from, the body's cells.

Content

Students will be able to:

- identify the organs of the respiratory system and their individual functions
- make a model to show the lungs working
- identify how the respiratory system moves air in and out of the body
- identify how the vocal cords, lungs, air and larynx make sound
- describe how oxygen enters the bloodstream
- explain why people hiccup
- measure heart rate
- experiment to determine the factors that affect heart rate
- identify the flow of blood through the circulatory system
- identify the parts of blood and their functions in the body
- identify the parts of the skin and their individual functions
- analyze the factors that affect the body's water balance
- explain how skin, lungs and kidneys all work to remove wastes from the body
- understand what causes goosebumps
- identify the parts of the digestive system and the flow of food through this system
- explain the role various parts of the digestive system play in breaking down food and allowing our bodies to absorb nutrients

Resources

- Discovery Works textbook
- Human Body Skills for Success workbook
- ActivBoard flipcharts
- Labs:
 - Breathing Rates
 - A Breathing Machine
 - Pump On
 - Pulse Point
 - Filtering Units
 - Food Digestion Experiment
- United Streaming videos