

Human Body Unit Organizer

Fourth Grade

Thinking Frame Work Key: K=Knowledge, P=Patterns, M=Modeling, C=Creativity

Vocabulary: circulatory, system, pioneer, chamber, atrium, ventricle, platelets, hemoglobin, plasma, antibodies, vessels, arteries, capillaries, veins, pulse, clotting, transfusion, cavity, diaphragm, alveoli, bronchial tubes, bronchi, trachea

I. Core Knowledge Content Guidelines

A. The Circulatory System

1. Students will be able to explain the role of William Harvey in relationship to the circulatory system. (K,P)
2. Students will be label and identify the four chambers of the heart; and the aorta. (K,P,M)
3. Students will be able to identify and explain the function of the four main parts of the blood as red blood cells, white blood cells, platelets, and plasma. (K,P,M)
4. Students will be able to identify and explain the function of hemoglobin and antibodies. (K,P,M)
5. Students will be able to identify and explain the function of the arteries, veins, and capillaries. (K,P,M)
6. Students will be able to explain where to locate their pulse, what causes the pulse, and what blood pressure means. (K,P,M,C)
7. Students will be able to explain that coagulation means clotting. (K)
8. Students will be able to explain the filtering function of the liver and spleen. (K)
9. Students will be able to explain that fatty deposits can clog blood vessels and cause a heart attack. (K,P,M,C)
10. Students will be able to identify the four basic blood types: A, B, AB, and O. (K,P)
11. Students will be able to explain the purpose of transfusions.(K)

B. The Respiratory System

1. Students will be able to explain the process of taking in oxygen and getting rid of carbon dioxide. (K,P,M,C)
2. Students will be able to explain the function of the nose, throat, voice box, and trachea. (K,M)
3. Students will be able to identify and explain the function of the lungs, bronchi, bronchial tubes, diaphragm, ribs, and alveoli. (K,M)
4. Students will be able to explain that smoking will damage lung tissue and can lead to lung cancer. (K,M)

C. Science Biographies

1. Students will be able to explain what Charles Drew accomplished through his work with plasma.
2. Students will be able to explain who Elizabeth Blackwell was and what her accomplishments were.

II. Procedures and Assessments

A. Lectures and Reading

1. read and discuss information from the Human Body Packet

B. Notes

1. take outlined notes on information from the packet
2. take notes during presentations

C. Projects

1. written report
2. time management
3. research skills

D. Labs

1. heart dissection
2. lung exploration

E. Assessments

1. quizzes
2. comprehension sheets to go with information packets
3. written report required with project
4. oral presentation
5. oral quizzing

III. Character Education

A. Respect

1. show respect during the presentations of the Human Body Projects
2. show consideration for other people's projects while they are in the classroom

B. Responsibility

1. taking the responsibility for the long-term project
2. being dependable to your lab partner

C. Self Control

1. use self control during the excitement of the dissection lab

D. Cooperation

1. dissection lab takes patience and a positive attitude

E. Integrity

1. completing the Human Body Project without parent help

IV. Colorado State Standards

Standard 1: Scientific Investigation

Students understand the processes of scientific investigation and design as well as conduct, communicate about, and evaluate such investigations.

1.1 Scientific investigations

Understand and practice the process of scientific investigation.

With teacher facilitation and in small groups the student will learn and follow the steps in the Scientific

Method:

- identify the problem.
- form a hypothesis (make a prediction).
- identify a procedure (list materials, steps, plan or strategy).
- test (experimentation)
- make observations (use tables, pictures and charts to explain in written form).
- collect data

-interpret and draw conclusions

Continue to develop appropriate questions and identify likely resources (For example: encyclopedia, atlases, nonfiction books and electronic media).

Standard 3: Life Science

Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.

3.1 Characteristics of living things

Know and understand the characteristics of living things, the diversity of life and how living things interact with each other and their environment.

3.2 Matter and energy of living systems

Know and understand interrelationships of matter and energy in living systems.

3.3 Human body

Know and understand how the human body functions and how these structure and functions compare with those of other factors that influence its structure and functions compared with those of other organisms.

Standard 5: Science, Technology and Human Activity

Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

5.1 Science, technology and human activity

Understand the connections between science, technology, human activity and their impact on the world.

Identify careers that use science and technology.

Describe the effects of pollution of the environment and suggest activities designed to conserve natural resources.

Standard 6: Scientific Connections

Students understand that science involves a particular way of knowing and understanding common connection among scientific disciplines.

6.1 Scientific connections

Understand that science is a changing body knowledge driven by a process of observation and investigation.

Identify observable patterns and changes in their lives and predict future events based on the patterns.

Compare a model with what it represents.

V. SCIENCE HABITS OF MIND THIRD THROUGH FIFTH GRADE

A. VALUES AND ATTITUDE

1. Keep records of their investigations and observations and not change the records later.
2. Offer reasons for their findings and consider reasons suggested by others.

B. MANIPULATION AND OBSERVATION

1. Keep a notebook that describes observations made, carefully distinguishes actual observations from ideas and speculations about what was observed, and is understandable weeks or months later.

C. CRITICAL-RESPONSE SKILLS

1. Buttress their statements with facts found in books, articles, and databases, and identify the sources used and expect others to do the same.