EXTENSIONS

INTERDISCIPLINARY EXTENSIONS

Language Extensions
- Make a nervous system book: label the parts, use acetate/overlays.
- Read Big Head
- Keep a learning log or journal. How do you use your nervous system?
- Vocabulary (see lessons)

Math Extension
- Build the clay brain to scale and graph each of the five parts.

Science Extensions
- Reasearch and present/perform the life of Dr. Wilder Penfield.
- Simulate a collaboration reenacting the Penfield experiments.
- Simulate a global collaboration using current technologoes. (Tech)

Art Extension
- Students create a puzzle using the brain trace kit.
- Students create a deck of cards (Go Fish style) with parts of the brain and nervous system.
- Draw the brain and illustrate the different functional areas with cartoons depicting their role in the nervouos system.

Technology Extension
- Research the techniques of Dr Penfield. From whom did he get his ideas and methods, and what changes did he make to them? How did his work in Canada change the way Science and Medicine collaborate?
- Simulate a global collaboration using internet and video conferencing technologoes while demonstrating the importance of consistent methodologies and research practices when sharing data and results.

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STANDS

NATIONAL SCIENCE AND HEALTH STANDARDS

The Nervous System module emphasizes the development of observation and description skills, and building understanding based on experience. This unit supports the National Science Education Standards and the Benchmarks of Scientific Literacy by the American Academy for the Advancement of Science.

NATIONAL SCIENCE EDUCATION STANDARDS

SCIENCE AS INQUIRY

Develop students' abilities to do and understand scientific inquiry.

- Ask and answer questions
- Plan and conduct simple investigations
- Employ tools to gather data.
- Use data to construct reasonable explanations.
- Communicate investigations and explanations
- Understand that scientists use different kinds of investigations and tools to develop explnations using evidence and knowledge.

LIFE SCIENCE

Develop students' understanding of characteristics of organisms.

- Organisms have differnet structures that serve different functions in growth and survival. Humnas have distinct body structures for form, movement and protections.
- The human organism has systems for movement, control, coordination and circulation.

SCIENCE AND TECHNOLOGY

Develop students' understandings about sceince and technology.

- Sceintitsts work collaboratively in teams and use tools and scientific techniques to make better obseervations.

SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES

Develop an awareness of personal health and safety.

- Individuals have some responsibbility for heir own health by following safety rules for home and school. Through practice, we develop confidence.

NATIONAL HEALTH EDUCATION STANDARDS

Standard 1:

Students will comprehend concepts related to health promotion and disease prevention.

Basic to health education is a foundation of knowledge about the interrelationship of behavior and health, interactions within the human body and the prevention of diseases and other health problems. Experiencing physical, mental, emotional and social changes as one grows and develops provides a self-contained "learning labratory".

K-4, students will

3. describe the basic structure and functions of the human body systems.

5-8, students will

3. explain how health is influenced by the interaction of body systems.

BENCHMARKS OF SCIENTIFIC LITERACY

1. THE NATURE OF SCIENCE

B. Scientific Inquiry

Scientific inquiry is ...much more than just "doing experiments," and it is not confined to laboratories. Investigations can focus on physical, biological, and social questions. Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others (Entire Unit)

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STANDARDS

NORTH CAROLINA STANDARDS

HEALTHFUL LIVING

Students will be aware of the important health risks for their age group Also, students will be able to healthfully direct their own personal behaviors in regard to use of bicycle helmets, exercising caution as a pedestrian or bike rider, and by refusing to be involved in substance abuse. Students will be able to state rational counter-arguments to pressure to use drugs, alcohol, or tobacco; explain the dangers of various substances; evaluate the reliability of health information sources; provide first aid for choking victims; describe patterns of normal development associated with puberty; and analyze advertising for health-related products.

Goal 3 - The learner will interpret health risks for self and others and corresponding protection measures. 3.01 Benefits of bicycle helmets.

Goal 6: The learner will choose not to participate in substance use. Describe social, emotional, physical, and mental health risks associated with various substances. 6.02 Describe dependence. 6.04 Identify signs and behaviors of substance use.

SCIENCE

The focus for the fourth grade student is on analyzing systems and learning how they work. Systems have boundaries, components, resources flow and feedback.

Units One and Two focus on the human nervous system. Students analyze how the nervous system functions, create models of the human brain and nervous system and discover the relationships between form and function of cells. They hear stories of the history of scientific collaborations, gaining insight into the Nature of Science. They practice the Process of Inquiry in the Magic Wand experiment, and experience the importance of technology as they explore with the Virtual Microscope. They also appreciate the progression of tool use over time, solidifying their understanding of Science in Personal and Social Persepectives.

TECHNOLOGY SKILLS

• Goal 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

ART

• Goal1: The learner will develop critical and creative thinking skills and perceptual awareness necessary for understanding and producing art.

• Goal 2: The learner will develop skills necessary for understanding and applying media, techniques, and processes.

• Goal 3: The learner will organize the components of a work into a cohesive whole through knowledge of organizational principles of design and art elements.

• Goal 7: The learner will perceive connections between visual arts and other disciplines.

LANGUAGE ARTS

Goal 1: The learner will apply enabling strategies and skills to read and write.

Goal 2: The learner will apply strategies and skills to comprehend text that is read, heard, and viewed.

Goal 3: The learner will make connections through the use of oral language, written language, and media and technology.

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