Unit 04: The Biological Bases of Behavior, Biological Bases

Content Area: **Social Studies**
Course(s):
Time Period: **Semester**
Length: **2 weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Objective:

Students will understand the human body is a complex, highly-integrated system that is developed from biological factors and experience.

Essential Question:

How does the interaction between our different biological processes influence our thought and behavior?

CONTENT AREA STANDARDS

SCI.9-12.B.1	Biological Bases of Behavior
SCI.9-12.B.1.1	Structure and function of the nervous system in human and non-human animals
SCI.9-12.B.1.1.1	Identify the major divisions and subdivisions of the human nervous system
SCI.9-12.B.1.1.2	Identify the parts of the neuron and describe the basic process of neural transmission
SCI.9-12.B.1.1.3	Differentiate between the structures and functions of the various parts of the central nervous system
SCI.9-12.B.1.1.4	Describe lateralization of brain functions
SCI.9-12.B.1.1.5	Discuss the mechanisms and the importance of plasticity of the nervous system
SCI.9-12.B.1.2	Structure and function of the endocrine system
SCI.9-12.B.1.2.1	Describe how the endocrine glands are linked to the nervous system
SCI.9-12.B.1.2.2	Describe the effects of hormones on behavior and mental processes
SCI.9-12.B.1.2.3	Describe hormone effects on the immune system
SCI.9-12.B.1.3	The interaction between biological factors and experience
SCI.9-12.B.1.3.1	Describe concepts in genetic transmission
SCI.9-12.B.1.3.2	Describe the interactive effects of heredity and environment

SCI.9-12.B.1.3.3	Explain how evolved tendencies influence behavior
SCI.9-12.B.1.4	Methods and issues related to biological advances
SCI.9-12.B.1.4.1	Identify tools used to study the nervous system
SCI.9-12.B.1.4.2	Describe advances made in neuroscience
SCI.9-12.B.1.4.3	Discuss issues related to scientific advances in neuroscience and genetics

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.RST.11-12.2	Determine the central ideas, themes, or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
LA.RST.11-12.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
LA.WHST.11-12.9	Draw evidence from informational texts to support analysis, reflection, and research.
CS.K-12.2.b	Create team norms, expectations, and equitable workloads to increase efficiency and effectiveness.
TECH.9.4.12.CI	Creativity and Innovation
TECH.K-12.P.1	Act as a responsible and contributing community members and employee.

STUDENT LEARNING TARGETS

Declarative Knowledge

After concluding this unit, students understand:

1. Structure and function of the nervous system in human and non-human animals

2. Structure and function of the endocrine system

3. The interaction between biological factors and experience

4. Methods and issues related to biological advances

Procedural Knowledge

Students will be able to:

- Identify and describe concepts related to the biological bases of behavior such as:
    - the major divisions and subdivisions of the human nervous system

    - the parts of the neuron and describe the basic process of neural transmission
    - the difference between the structures and functions of the various parts of the central nervous system,
    - lateralization of brain functions
    - the mechanisms and the importance of plasticity of the nervous system
    - how the endocrine glands are linked to the nervous system
    - the effects of hormones on behavior and mental processes
    - hormone effects on the immune system
    - concepts in genetic transmission
    - the interactive effects of heredity and environment
    - how evolved tendencies influence behavior
    - tools used to study the nervous system
    - advances made in neuroscience
    - issues related to scientific advances in neuroscience and genetics
- Determine and analyze the role of neurotransmitters and their effects on behavior
- Apply systematic procedures used to improve the validity of research findings, such as external validity

EVIDENCE OF LEARNING

Alternative:

- Portfolios
- Verbal Assessment (instead of written)
- Multiple choice
- Modified Rubrics
- Performance Based Assessments

Benchmark:

Standards based through Pear Assessment

Formative Assessments

- Chapter 3 Study Guide https://docs.google.com/document/d/1fQeMzwRAVgTuNu_Vy5mV5GMaSd0ZDJqqiCz8UQhNEe8/copy?usp=sharing

- Questioning:
    - How has research and technology provided new methods to analyze brain behavior and disease?

    - How does the interaction between our different biological processes influence our thought and behavior?

- Research and determine the newest research in neuroscience in the areas of Alzheimers, Gender Identity, CTE, Parkinson's Disease, and more.

- Nearpod: Neurotransmitters

- Nearpod: Brain Structures

Summative Assessments

- Brain Model and Praticial Quiz- https://docs.google.com/document/d/1YmfcrTcX-12pXH0Y4ABPR6lK4e_Ayu7mlSV8XYS3sQ8/copy?usp=sharing
- Combined Biological Bases of the Brain and Sensation and Perception multiple choice/true false test.

RESOURCES (Instructional, Supplemental, Intervention Materials)

Slides notes- https://drive.google.com/file/d/1JA-7_kWXTGz7gEOMrgvMOrj1yOVreqw3/copy?usp=sharing

Brain Resources:

https://www.youtube.com/watch?v=Qw8E9WnZTQk

https://www.youtube.com/watch?v=vYwOtTMUz0c

https://www.youtube.com/watch?v=kMKc8nfPATI

INTERDISCIPLINARY CONNECTIONS

VA.9-12.1.5.12prof.Cr1a	Use multiple approaches to begin creative endeavors.
SCI.HS-LS3-1	Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
SCI.HS-LS3-3	Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

- Provide enrichment activities that include more advanced material
- Use of Higher Level Questioning Techniques
- Extended time to complete assignments
- Extended time on classroom tests and quizzes
- Restate, reread, and clarify directions/questions
- Establish procedures for accommodations /modifications for assessments
- Provide oral reminders and check student work during independent work time
- Extended time to complete assignments: Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases
- Provide enrichment activities that include more advanced material
- Pair visual prompts with verbal presentations

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