

# 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)**

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CS.K-12.2.b	Create team norms, expectations, and equitable workloads to increase efficiency and effectiveness.
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.
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**

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### **Declarative Knowledge**

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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**

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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**

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Alternative:

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

Benchmark:

Standards based through Pear Assessment

## **Formative Assessments**

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- Chapter 3 Study  
Guide [https://docs.google.com/document/d/1fQeMzwRAVgTuNu\\_Vy5mV5GMaSd0ZDJqqiCz8UQhNEe8/copy?usp=sharing](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**

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- Brain Model and Pratical Quiz- [https://docs.google.com/document/d/1YmfcTcX-12pXH0Y4ABPR6lK4e\\_Ayu7mlSV8XYS3sQ8/copy?usp=sharing](https://docs.google.com/document/d/1YmfcTcX-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)**

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

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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**

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- 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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