

# Unit 3: Biological Basis of Behavior (includes Biological Basis of Behavior & States of Consciousness) (Weeks 9-12)

Content Area: **Template**  
Course(s):  
Time Period: **Full Year**  
Length: **Full Year**  
Status: **Published**

## UNIT RATIONALE

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This unit presents an overview of the biology of the nervous system involved in behavior and mental processes and examines the role of genetics and evolution in the understanding of ourselves. It also explores several types of consciousness beyond just being aware and awake, each with its own biological and psychological effects on a person's awareness and wakefulness.

## ESSENTIAL QUESTIONS

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- How can biology influence our behavior and mental processes?
- What happens when a particular neurotransmitter is absent from the body?
- How do biological and environmental factors interact to influence our behaviors and mental processes?
- How do biological and sociocultural influences affect a person's attitude and response to altered states of consciousness?

## STANDARDS

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### NEW JERSEY STUDENT LEARNING STANDARDS: CONTENT AREA

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#### New Jersey (NJSL) - Grades 11-12 - English Language Arts ELA (2020)

##### NJLSA.R2

Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

##### RI.11-12.7

Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

##### NJLSA.W4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task,

purpose, and audience.

### NJSLSA.W6

Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

### NJSLSA.W9

Draw evidence from literary or informational texts to support analysis, reflection, and research.

LA.K-12.NJSLSA.R2	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
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## **NEW JERSEY STUDENT LEARNING STANDARDS: CAREER READINESS, LIFE LITERACIES AND KEY SKILLS**

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TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CT.2	Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a).
TECH.9.4.12.IML.1	Compare search browsers and recognize features that allow for filtering of information.
TECH.9.4.12.IML.8	Evaluate media sources for point of view, bias, and motivations (e.g., NJSLSA.R6, 7.1.AL.IPRET.6).

## **NEW JERSEY STUDENT LEARNING STANDARDS: COMPUTER SCIENCE AND DESIGN THINKING**

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CS.9-12.8.1.12.DA.1	Create interactive data visualizations using software tools to help others better understand real world phenomena, including climate change.
CS.9-12.8.1.12.DA.5	Create data visualizations from large data sets to summarize, communicate, and support different interpretations of real-world phenomena.

## **PRE-ASSESSMENTS**

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[Unit 3 Pre-assessment Gimkit](#)

## MODULE 1

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**Student Learning Intentions (SLI) WALT:  
(We are learning to...)**

- discuss psychology's abiding interest in how heredity, environment, and evolution work together to shape behavior
- identify key research contributions of scientists in the area of heredity and environment
- predict how traits and behavior can be selected for their adaptive value
- discuss the effect of the endocrine system on behavior
- describe the nervous system and its subdivisions and functions
- identify basic processes and systems in the biological bases of behavior, including parts of the neuron
- identify basic process of transmission of a signal between neurons
- discuss the influence of drugs on neurotransmitters
- describe the nervous system and its subdivisions and functions in the brain
- identify the contributions of key researchers to the study of the brain
- recount historic and contemporary research strategies and technologies that support research
- identify the contributions of key researchers to the development of tools for examining the brain
- discuss the role of neuroplasticity in

traumatic brain injury

- identify the contributions of key researchers to the study of neuroplasticity
- describe various states of consciousness and their impact on behavior
- identify the major psychoactive drug categories and classify specific drugs. including their psychological and physiological effects
- discuss drug dependence, addiction, tolerance, and withdrawal
- identify the contributions of major figures in consciousness research
- discuss aspects of sleep and dreaming

### Student Learning Strategies

- activating strategies
  - video clips to engage and link relevant material
  - fact or fiction questions at the intro to units
- relevant vocabulary
- graphic organizer
  - parts of the brain
  - types/effects of drugs
  - sleep cycles
- student-centered
  - brain
  - imaging techniques
  - orange brain surgery
  - drugs (including Mouse Party)

### Success Criteria

- I can discuss psychology's abiding interest in how heredity, environment, and evolution work together to shape behavior
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scientists in the area of heredity and environment

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### Formative Assessment (drives instructional decisions)

Daily quizzes to determine if students have been reading and synthesizing the information presented in class

### Activities and Resources

- dream journal project
- Neuron Metaphor HW
- Orange Brain Surgery
- The Brain Book Project
- Brain Choice Project
- Brain Games ~ Don't be afraid
- Brain Scenarios
- Brain webquest
- build a neuron activity
- Neurotransmitter Scramble
- Sleep Stages Activity

### Suggested Modifications

#### English Language Learners

**Native language support:** The teacher provides auditory or written content to students in their native language.

**Adjusted Speech:** The teacher changes speech patterns to increase student comprehension. This could include facing the students, paraphrasing, clearly indicating the most important ideas, and speaking more slowly.

**Visuals:** The teacher uses graphics, pictures, visuals, and manipulatives. This helps ELL students better understand and comprehend the subjects at hand.

**Front-Loading Vocabulary:** The teacher front loads vocabulary. This means providing students with a list of important vocabulary words they will need to know for a book, lesson, etc. prior to the lesson being taught. Including pictures to go with the vocabulary words is also very beneficial for the students.

### **Special Education Students**

**Chunking:** The teacher presents information in a way that makes it easy for students to understand and remember. Chunking is based on the presumption that our working memory is easily overloaded by excessive detail. The best way to deliver information is to organize it into meaningful units. Because students with special needs get overloaded easily, chunking is an effective strategy to use with them.

**Checking for Understanding:** It is important to constantly check for understanding, especially for students who have accommodations. Teachers want to make sure students understand the concepts being covered in a way that makes sense to them.

**Extra time:** The teacher provides students with special needs extra time to complete work or answer questions. It is important to give students enough time to process their thoughts.

**Oral Reading:** The teacher will read work orally to students. Class work such as tests and literature circles may need to be read aloud to the student.

**Timers:** The teacher will use timers as an instructional tool. The use of timers is beneficial for students who have trouble completing tasks. Timers can be helpful so the student is aware of how much time they have to complete an assignment.

### **Students with 504 Plans**

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### **Gifted & Talented Strategies**

**Extensions/Enrichments:** Teachers will provide gifted and talented students with extension/enrichment projects. Students will be challenged to further their understanding, to apply acquired knowledge, and/or to produce something in reference to acquired knowledge.

**Modify/Change Activities:** Teachers will monitor and modify activities to accommodate those students who need to be challenged further. Additional reading, problem-solving, writing, or project work is necessary for those students who are ready to move on at a rate more accelerated than their peers. In this way, G & T students are provided the same opportunity for support as special needs students.

### **Students at Risk of School Failure**

**Directions or Instructions:** Make sure directions and/or

instructions are given in limited numbers. Give

directions/instructions verbally and in simple written format.

**Ask students to repeat the instructions or directions to ensure**

**understanding occurs. Check back with the student to ensure**

**he/she hasn't forgotten.**

**Peer Support:** Peers can help build confidence in other students by assisting in peer learning. Many teachers use the 'ask 3 before me' approach. This is fine, however, a student at risk may have to have a specific student or two to ask. Set this up for the student so he/she knows who to ask for clarification before going to you.

**Alternate or Modified Assignments:** Always ask yourself, "How can I modify this assignment to ensure the students at risk are able to complete it?" Sometimes you'll simplify the task, reduce the length of the assignment or allow for a different mode of delivery. For instance, many students may hand something in, the at-risk student may jot notes and give you the information verbally. Or, it just may be that you will need to assign an alternate assignment.

**Increase One to One Time:** When other students are working, always touch base with your students at risk and find out if they're on track or needing some additional support. A few minutes here and there will go a long way to intervene as the need presents itself.

**Contracts:** It helps to have a working contract between you and your students at risk. This helps prioritize the tasks that need to be done and ensure completion happens. Each day write down what needs to be completed, as the tasks are done, provide a checkmark or happy face. The goal of using contracts is to eventually have the student come to you for

completion sign-offs.

**Hands On:** As much as possible, think in concrete terms and provide hands-on tasks. This means a child doing math may require a calculator or counters. The child may need to tape record comprehension activities instead of writing them. A child may have to listen to a story being read instead of reading it him/herself.

**Tests/Assessments:** Tests can be done orally if need be. Break tests down in smaller increments by having a portion of the test in the morning, another portion after lunch and the final part the next day.

**Seating:** Seat students near a helping peer or with quick access to the teacher. Those with hearing or sight issues need to be close to the instruction which often means near the front.

[Dream Journal Project](#)

[Neuron Metaphors HW](#)

[Orange Brain Surgery Activity 2021-2022](#)

[THE BRAIN BOOK PROJECT](#)

[THE BRAIN MOBILE PROJECT](#)

[Brain Choice Project](#)

[Brain Games Season 2 Episode 4-Dont be afraid](#)

[Brain Scenarios](#)

[Brain webquest](#)

[Brain webquest ~ Teacher](#)

[Build a Neuron Activity](#)[Neurotransmitter Scramble](#)

[Neurotransmitter Scramble](#)

[Neurotransmitter Scramble ~ Student](#)

[Sleep Stages - Examples/Scenarios \(Student\)](#)

[Sleep Stages - Examples/Scenarios \(Teacher\)](#)

[TheScienceofAddiction.pdf](#)

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## REFLECTIONS

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### **INTERDISCIPLINARY CONNECTIONS: NEW JERSEY STUDENT LEARNING STANDARDS FOR ELA, SOCIAL STUDIES, SCIENCE AND/OR MATHEMATICS**

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