Unit 2 - Biopsychology Domain 2017

Content Area: **Social Studies**
Course(s): **Advanced Placement Psychology**
Time Period: **October**
Length: **number of days**
Status: **Published**

Unit Overview

The Biopsychology domain explores the biological bases of behavior including the nervous and endocrine systems. This unit also examines human sensation and perception as well as states of consciousness.

Enduring Understandings

- Biological factors interacts with the environment and experience
- Understanding the structure and function of the nervous system is vital to understanding human and non-human behavior
- The endocrine system influences human behavior and development
- Sensation and perception interact and allow us to understand the outside world
- Perceptions are determined by and interaction between the person and their environment
- Humans process information both consciously and unconsciously
- Altered forms of consciousness include sleep, being under the influence of drugs, hypnosis, and near death experience

Essential Questions

- What is genetic transmission and how does heredity interact with the environment?
- How do evolved tendencies influence behavior?
- What are the major divisions and subdivisions of the nervous system?
- What are the parts of a neuron and how does neural transmission occur?
- What are the structures and functions of the major parts of the central nervous system?
- How do lateralization and plasticity affect brain function?
- How is the endcocrine system linked to the nervous system and how do hormones affect behavior and mental processes?
- How do sensation and perception interact and how are these processes influenced by thresholds and adaptation?
- What are the structures and function of the following sensory systems: vision, audition, olfaction, gustation, and somethesis?
- What roles do organization principles, depth perception, constancies, experience, and expectations play in shaping perception?
- What is the nature of attention?
- What is the relationship between conscious and unconscious processes?
- How do sleep, psychoactive drugs, and near-death experiences alter your level of consciousness?

Standards/Indicators/Student Learning Objectives (SLOs)

- Students will summarize the relative influences of genetics, evolution, parents and peers, and culture on human behavior.
- Students will identify the structure of a neuron and summarize the process of neural communication
- Students will distinguish the divisions and subdivisions of the nervous system and explain the endocrine system's interaction with the nervous system
- Students will describe the methods and tools used to examine the structure and function of the brain
- Students will identify the structures and functions of the more primitive regions of the brain
- Students will relate the structure and function of various regions of the cerebral cortex and explain the concept of plasticity
- Students will analyze the lateralization of brain functions
- Students will summarize basic principles of sensation including thresholds and adaptation
- Students will summarize the structures of the human eye and their functions
- Students will outline the way that visual information is processed by the eye and brain
- Students will identify the structures of the human ear and their functions
- Students will analyze the function of the following sesnory systems: olfaction, gustation, and somethesis
- Students will define perception, analyze the nature of attention, and investigate some common perceptual illusions
- Students will differentiate between various Gestalt organizing principles
- Students will summarize the processes by which humans can perceive depth and differentiate between the various binocular and monocular cues
- Students will outline the processes allowing humans to perceive motion and distinguish the various perceptual contancies
- Students will examine various forms of percetual interpretation including deprivation, adaptation, perceptual set, and context effects
- Students will examine the claims regarding ESP and evaluate the evidence regarding its existence
- Students will define consciousness and examine the stages of sleep, sleep theories, and dream theories
- Students will investigate hypnosis, psychoactive drugs, and near-death experience as altered forms of consciousness

APA Content Standards

SCI.9-12.B.1.1	Structure and function of the nervous system in human and non-human animals
SCI.9-12.B.1.2	Structure and function of the endocrine system
SCI.9-12.B.1.3	The interaction between biological factors and experience
SCI.9-12.B.1.4	Methods and issues related to biological advances
SCI.9-12.B.2	Sensation and Perception
SCI.9-12.B.2.2	The capabilities and limitations of sensory processes
SCI.9-12.B.2.3	Interaction of the person and the environment in determining perception

SCI.9-12.B.3	Consciousness
SCI.9-12.B.3.2	Characteristics of sleep and theories that explain why we sleep and dream
SCI.9-12.B.3.3	Categories of psychoactive drugs and their effects
SCI.9-12.B.3.4	Other states of consciousness

Indicators

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.1.2.1	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.1.3.1	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.1.4.1	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
SCI.9-12.B.2.1.1	Discuss processes of sensation and perception and how they interact
SCI.9-12.B.2.1.2	Explain the concepts of threshold and adaptation
SCI.9-12.B.2.2.1	List forms of physical energy for which humans and non-human animals do and do not have sensory receptors
SCI.9-12.B.2.2.2	Describe the visual sensory system
SCI.9-12.B.2.2.3	Describe the auditory sensory system
SCI.9-12.B.2.2.4	Describe other sensory systems, such as olfaction, gustation, and somesthesis (e.g., skin senses, kinesthesis, and vestibular sense)
SCI.9-12.B.2.3.1	Explain Gestalt principles of perception
SCI.9-12.B.2.3.2	Describe binocular and monocular depth cues
SCI.9-12.B.2.3.3	Describe the importance of perceptual constancies
SCI.9-12.B.2.3.4	Describe perceptual illusions
SCI.9-12.B.2.3.5	Describe the nature of attention
SCI.9-12.B.2.3.6	Explain how experiences and expectations influence perception
SCI.9-12.B.3.1.1	Identify states of consciousness
SCI.9-12.B.3.1.2	Distinguish between processing that is conscious (i.e., explicit) and other processing that happens without conscious awareness (i.e., implicit)
SCI.9-12.B.3.2.1	Describe the circadian rhythm and its relation to sleep
SCI.9-12.B.3.2.2	Describe the sleep cycle

SCI.9-12.B.3.2.3	Compare theories about the functions of sleep
SCI.9-12.B.3.2.4	Describe types of sleep disorders
SCI.9-12.B.3.2.5	Compare theories about the functions of dreams
SCI.9-12.B.3.3.1	Characterize the major categories of psychoactive drugs and their effects
SCI.9-12.B.3.3.2	Describe how psychoactive drugs act at the synaptic level
SCI.9-12.B.3.3.3	Evaluate the biological and psychological effects of psychoactive drugs
SCI.9-12.B.3.3.4	Explain how culture and expectations influence the use and experience of drugs
SCI.9-12.B.3.4.1	Describe meditation and relaxation and their effects
SCI.9-12.B.3.4.2	Describe hypnosis and controversies surrounding its nature and use
SCI.9-12.B.3.4.3	Describe flow states

Lesson Titles

- Nature, Nurture, and Human Diversity
- Neural Communication
- The Nervous and Endocrine Systems
- The Tools of Discovery
- Older Brain Structures
- The Cerebral Cortex
- Our Divided Brain
- Sensation
- Vision
- Visual Processing
- Audition
- Other Senses
- Perception, Attention, and Illusions
- Perceptual Organization
- Depth Perception
- Motion and Perceptual Constancies
- Perceptual Interpretation
- Extrasensory Perception
- Consciousness and Sleep
- Other States of Consciousness

21st Century Skills and Career Ready Practices

- Health Literacy
- Creativity and Innovation
- Information Literacy
- Critical Thinking and Problem Solving
- Media Literacy
- Life and Career Skills
- Communication and Collaboration

CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.

Inter-Disciplinary Connections

- Health & PE
- Science
- English Language Arts

LA.RH.11-12.1	Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of primary and secondary sources, connecting insights gained from specific details to develop an understanding of the text as a whole.
LA.RH.11-12.4	Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).
LA.RH.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, qualitatively, as well as in words) in order to address a question or solve a problem.
LA.RST.11-12.1	Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions.
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.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
LA.RST.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
LA.RST.11-12.10	By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.
LA.WHST.11-12.1	Write arguments focused on discipline-specific content.
LA.WHST.11-12.1.A	Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
LA.WHST.11-12.1.C	Use transitions (e.g., words, phrases, clauses) to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
LA.WHST.11-12.1.D	Establish and maintain a style and tone appropriate to the audience and purpose (e.g., formal and objective for academic writing) while attending to the norms and conventions of the discipline in which they are writing.
LA.WHST.11-12.1.E	Provide a concluding paragraph or section that supports the argument presented.
HPE.2.1.12.A.CS1	Developing and maintaining wellness requires ongoing evaluation of factors impacting health and modifying lifestyle behaviors accordingly.
HPE.2.3.12.B.1	Compare and contrast the incidence and impact of commonly abused substances (such as tobacco, alcohol, marijuana, inhalants, anabolic steroids, and other drugs) on individuals and communities in the United States and other countries.

HPE.2.3.12.C.2	Analyze the effectiveness of various strategies that support an individual's ability to stop abusing drugs and remain drug-free.
SCI.HS-LS4-4	Construct an explanation based on evidence for how natural selection leads to adaptation of populations.
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.

Instructional Strategies, Learning Activities, and Levels of Blooms/DOK

- Teacher Instruction - Behaviror Genetics, Evolutionary Psychology (Blooms: Remember, Understand, Apply)
- Question/Answer - Summer work (Blooms: Remember, Understand, Apply)
- Guided reading - Genetics (Blooms: Remember, Understand)
- In-class demonstration - reaction time (Blooms: Apply)
- Teacher Instruction - Neural Communication (Blooms: Understand, Apply, Analyze)
- Graphic Organizer - Nervous System (Blooms: Remember, Understand, Apply, Analyze)
- Independent Work - Endocrine System (Blooms: Remember, Understand, Apply)
- Brain Details - Myth or Fact (Blooms: Understand, Apply)
- Note Outline - Older Brain Structures (Blooms: Remember, Understand, Apply, Analyze)
- Guided Reading - Hypothalamus (Blooms: Apply, Analyze)
- Note Outline - Cerebral Cortex (Blooms: Remember, Understand, Apply)
- Group Collaboration - Cerebral Cortex/Diagram (Blooms: Analyze, Evaluate, Create)
- In-class demonstration - Divided Brain (Blooms: Apply, Analyze, Evaluate)
- Kahoot Review Game - Brain/Nervous System (Blooms: Remember, Understand, Apply)
- Bottom Up vs. Top Down Demonstrations (Blooms: Understand, Apply, Analyze)
- Student input from HW - Inattentional Blindness (Blooms: Remember, Understand, Apply, Analyze)
- Teacher Instruction - Subliminal Stimulation (Blooms: Apply, Analyze, Evaluate)
- Student input from HW - Influences on Perception (Blooms: Remember, Understand, Apply)
- Teacher Instruction - Coin Flip Demonstration (ESP) (Blooms: Understand, Apply)
- Student input from HW - Eye anatomy (Blooms: Remember, Understand, Apply)
- Question/Answer - Visual Processing (Blooms: Apply, Analyze)
- Student input from HW - Form, Depth, Motion (Blooms: Analyze, Evaluate)
- Independent Work - Ear Anatomy (Blooms: Remember, Understand)
- Note Outline - Other Senses (Blooms: Understand, Apply)
- Rubber Hand Demonstration - Sensory Interaction (Blooms: Analyze, Evaluate)
- Sensation/Perception Review (Blooms: Remember, Understand, Apply)
- Independent Study - States of Consciousness (Blooms: Analyze, Evaluate, Create)
- Delsea One
- SWAG

Modifications

ELL Modifications

- Digital translators
- Provide ELL students with multiple literacy strategies
- Front load information
- Focus on domain specific vocabulary and keywords
- Use manipulatives where possible
- Use visuals and other graphic organizers
- Use real objects when possible
- Tap prior knowledge
- Establish a framework allowing ELL students to understand and assimilate new ideas and information
- Provide support as ELL students move through all levels of language acquisition: scaffold learning, processing time, as well as other modifications mentioned above
- Assess ELL students continuously using formative assessment methods
- 1:1 testing
- Repeat, reword, clarify
- Intentional scheduling/grouping with student/teacher who speaks the same language if possible
- Offer alternate/or modify assessments
- Be flexible with time frames and deadlines
- Provide learning objective and skill objective
- Delsea One
- SWAG

IEP & 504 Modifications

Testing modifications:

- rewording questions so that there are not higher level vocabulary within the question (you are testing for understanding of the content not the ability to understand the question)
- less questions overall if the student takes so much extra time that they are going into future days (missing instruction) to take the test
- offer paraphrasing of primary sources... if the student is expected to be testing on understanding that paragraph or quote to answer future questions
- word banks, multiple choice, matching questions help when possible
- images/graphics w/synopsis
- read test aloud
- test in small groups
- projects can be submitted digitally or paper
- offer options for type of project relating to content

Instructional modifications/accommodations:

- teaching the main ideas/concepts (limiting not needed details) to be taught and repeating them in several different ways over several different days (goal is 7 different ways same concept for students with learning disabilities)
- providing students with content vocabulary prior to teaching a lesson including that vocabulary (pre-teaching); varied instruction: Quizlet
- providing study guides that don't lead the student to study too much extraneous information (less unnecessary details)/scaffolded study guides; completed study guides can be offered by teacher; digital review such as kahoots can also be used.
- allowing student to take notes in class for reinforcement but also providing a copy (digital or print) of completed/correct notes from which to study
- modeling and showing lots of examples
- if not in a co-teaching setting allowing time in the schedule for a special education teacher to consult with general education teachers on what specifically can be modified or how to paraphrase things in a different way specific to that lesson
- direct teaching and/or assistance for organization, social skills/peer interactions
- allow assignments to be completed in Organizational Management class
- speaking to students privately when redirecting behaviors
- reducing homework length to just those most important for review
- allow student to edit with teacher comments the first attempt at a graded written assignment
- monitoring student moods/behavior fluctuation patterns to report to casemanager
- students who prefer to work individually will be permitted to
- oral presentations to small groups or teacher only
- preferential seating
- use manipulatives where possible
- use visuals, graphic organizers, and real objects when possible
- tap prior knowledge
- be flexible with time frames and deadlines
- repeat reword and clarify
- Delsea One
- SWAG

G&T Modifications

- encourage students to explore concepts in depth and encourage independent studies or investigations.
- employ differentiated curriculum to keep interest high.
- ask students' higher level questions that require students to look into causes, experiences, and facts to draw a conclusion or make connections to other areas of learning.
- encourage students to make transformations- use a common task or item in a different way
- effective questioning techniques (focus on what's important, provide processing time, require higher order thinking
- creation of technology-based assessments to address the higher levels of Bloom's
- close reading: texts, primary sources, etc.
- student led/directed discussions
- inquiry based learning
- modeling

- jigsaw grouping
- annotating/summarizing
- analysis/interpretation of graphics or creation of graphics
- options for type of project relating to content
- Delsea One
- SWAG

At Risk Modifications

- Verbal reminders during class to keep student on task
- Use gradebook/Classroom to highlight missed work
- Allow extra time for completion of work as needed
- Meetings during Delsea One
- Calls to parents
- Contact guidance counselors/SAC
- Meeting with other teachers/coaches of student to develop a plan for improvement
- Contact administration
- Delsea One
- SWAG

Formative Assessment

Warm-Ups:

- Fill-Ins - Neurons
- Question - Sensation vs. Perception
- Question - Subliminal Stimulation
- Question - Gestalt
- Question - Tree in a Forest

Anticipatory Set:

- Video Clip - Genetics
- Brain Myths
- Divided Brain Demonstration
- Video Clip - Prosopagnosia
- Perceptual Set Demonstration
- HW Review - Color Vision

- Afterimage Demonstration
- Binocular Vision Demonstration

Closure:

- Whip Around
- Fill-Ins - Brain Research
- Name the Depth Cues
- Exit Ticket
- Random Sampling
- Homework Assignments
- Classnote revisions

Summative Assessment

- Open-Note Test - Genetics, Evolutinary Psychology
- Chapter Test - Brain and Nervous System
- Open-Note Quiz - Eye Anatomy
- Chapter Test - Sensation and Perception
- Online Test - Consciouness
- Marking Period Assessment - aligned to unit

Benchmark (Assessments):

Skills-based assessment
Reading responses
Writing responses

Alternative Assessment(s):

Performance tasks
Project-based assignments
Problem-based assignments
Presentations
Reflective pieces
Concept maps
Case-based scenarios
Portfolios

Resources & Materials

- Psychology for AP, 2e - Myers
- Textbook companion website
- Textbook Test Generator
- Inside Out Video - Genetics
- Dictionary of Psychology, Reber
- Barron's AP Psychology
- You Tube: Domesticated Russian Foxes
- Supplemental Reading - Gender Differences in Sexual Behavior
- Nervous System flow chart
- Brain Details - Secret Life of the Brain
- Video - Secrets of the Mind
- Video - Stress, Trauma, and the Brain
- Supplemental Reading - Phineas Gage
- Kahoot Review - Neuroscience
- Quizlet - Brain and Nervous System
- You Tube: Sensation and Perception
- Video - 60 Minutes (Prosopagnosia)
- Inattentional/Change Blindness Clips
- Discovering Psychology DVD - Perception
- Kahoot - Sensation/Perception
- Quizlet - Sensation/Perception
- You Tube - Consciouness
- Google Classroom
- Google Docs - aligned to unit
- Google Forms - aligned to unit

Technology

- *You Tube - Domesticated Russian Foxes - https://www.youtube.com/watch?v=0jFGNQScRNY&feature=youtu.be&t=18s*
- Interactive Smart Board Diagram - Endocrine System
- Crash Course - Chemical Mind - https://youtu.be/W4N-7AlzK7s?list=PL8dPuuaLjXtOPRKzVLY0jJY-uHOH9KVU6
- Secrets of the Mind - https://www.youtube.com/watch?v=3ky_f_Y_bEU&feature=youtu.be&t=3m24s
- Crash Course - Getting to Know Your Brain - https://youtu.be/vHrmiy4W9C0?list=PL8dPuuaLjXtOPRKzVLY0jJY-uHOH9KVU6
- You Tube - Hemispherectomy - https://www.youtube.com/watch?v=2MKNsI5CWoU
- You Tube - Blindsight - https://www.youtube.com/watch?v=3ky_f_Y_bEU&feature=youtu.be&t=15m37s
- Kahoot - Neuroscience - https://create.kahoot.it/#quiz/f9c89987-bae9-4ae2-9bdc-150c5db9420f
- Quizlet - Brain/Nervous System - https://quizlet.com/59324273/unit-3a-myers-for-ap-2e-flash-cards/
- Crash Course - Sensation and Perception - https://youtu.be/unWnZvXJH2o?list=PL8dPuuaLjXtOPRKzVLY0jJY-uHOH9KVU6

- 60 Minutes - Prosopagnosia - https://www.youtube.com/watch?v=dxqsBk7Wn-Y&feature=youtu.be&t=8m29s
- You Tube - Inattentional Blindness - https://www.youtube.com/watch?v=Ahg6qcgoay4&feature=youtu.be
- You Tube - Change Blindness - https://www.youtube.com/watch?v=vBPG_OBgTWg
- Interactive Smart Board Diagram - Ear Anatomy
- Kahoot - Sensation/Perception - https://create.kahoot.it/#quiz/940476c7-7e84-4b54-8de5-650304a91a41
- Quizlet - Sensation/Perception - https://quizlet.com/65766691/unit-4-myers-for-ap-2e-flash-cards/
- Crash Course - Consciouness - https://youtu.be/jReX7qKU2yc?list=PL8dPuuaLjXtOPRKzVLY0jJY-uHOH9KVU6
- Online Test - Consciouness https://docs.google.com/forms/d/1NHGpn3pEz03Tm3Oi_ZpS6sv-JvqulTs5Ebp93CFjtlU/edit

TECH.8.1.12.A.CS1	Understand and use technology systems.
TECH.8.1.12.A.CS2	Select and use applications effectively and productively.
TECH.8.1.12.B.2	Apply previous content knowledge by creating and piloting a digital learning game or tutorial.
TECH.8.1.12.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.8.1.12.E.CS2	Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.