

**Course:** *Psychology*  
**Unit #2:** The *Biology of Psychology*

**Year of Implementation:** 2022-2023

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### Stage One - Desired Results

**Link(s) to New Jersey Student Learning Standards for this course:**

**New Jersey Core Curriculum Content Standards**

<https://www.state.nj.us/education/cccs/2020/>

**New Jersey Core Curriculum Content Standards 21st Century Life and Careers**

<http://www.state.nj.us/education/cccs/2014/career/9.pdf>

**APA National Standards for High School Psychology Curriculum**

<https://www.apa.org/education/k12/national-standards>

- **Unit Standards:**
  - **Content Standards**
    - **APA National Standards for Psychology:**
      - **Standards Area: Biological Bases of Behavior**
        - 1.1 Identify the major divisions and subdivisions of the human nervous system
        - 1.2 Identify the parts of the neuron and describe the basic process of neural transmission.
        - 1.3 Differentiate between the structures and functions of the various parts of the central nervous system
        - 1.4 Describe lateralization of brain functions
        - 1.5 Discuss the mechanisms of, and the importance of, plasticity of the nervous system.
        - 2.1 Describe how the endocrine glands are linked to the nervous system.
        - 3.2 Describe the interactive effects of heredity and environment.
        - 4.1 Identify tools used to study the nervous system.
      - **Standard Area: Sensation and Perception**
        - 1.1 Discuss processes of sensation and perception and how they interact.
        - 2.2 Describe the visual sensory system.

- 2.3 Describe the auditory sensory system.
- 3.1 Explain Gestalt principles of perception.
- 3.2 Describe binocular and monocular depth cues.
- 3.4 Describe perceptual illusions.
- **Standard Area: Consciousness**
  - 1.1 Identify states of consciousness.
  - 1.2 Distinguish between processing which is conscious (i.e., explicit) and other processing which happens without conscious awareness (i.e., implicit).
  - 2.3 Compare theories about the functions of sleep.
  - 2.4 Describe types of sleep disorders.
  - 3.1 Characterize the major categories of psychoactive drugs and their effects.
  - 4.1 Describe meditation and relaxation and their effects.
- **21st Century Life & Career Standards**
  - 9.2.12.C.5 Research career opportunities in the United States and abroad that require knowledge of world languages and diverse cultures
  - 9.3.12.ED-TT.2 Employ knowledge of learning and developmental theory to describe individual learners.
  - 9.3.HL.5 Analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace.
  - 9.3.12.ED.2 Demonstrate effective oral, written and multimedia communication in multiple formats and contexts  
<https://www.state.nj.us/education/cccs/2020/2020%20NJSLS-CLKS.pdf>
- **English Companion Standards**
  - NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text
  - NJSLSA.R6. Assess how point of view or purpose shapes the content and style of a text.
  - NJSLSA.R7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words..  
<https://www.state.nj.us/education/cccs/2016/ela/CompanionG1112.pdf>
- **Interdisciplinary Content Standards**
  - 2.1.12.PGD.2: Predict how healthy and unhealthy behaviors can affect brain development and impact physical, social and emotional stages of early adulthood.
- **NJ Statutes:**

Amistad Law: N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

Holocaust Law: N.J.S.A. 18A:35-28 Every board of education shall include instruction on the Holocaust and genocides in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

LGBT and Disabilities Law: N.J.S.A. 18A:35-4.35 A board of education shall include instruction on the political, economic, and social contributions of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum of middle school and high school students as part of the district's implementation of the New Jersey Student Learning Standards (N.J.S.A. 18A:35-4.36) A board of education shall have policies and procedures in place pertaining to the selection of instructional materials to implement the requirements of N.J.S.A. 18A:35-4.35.

For additional information, see

***NJ Amistad Curriculum:*** <http://www.njamistadcurriculum.net>

**Transfer Goal:** Students will be able to independently use their learning to analyze the interrelationship of biology and psychology on a person's experience of the world.

As aligned with LRHSD Long Term Learning Goal(s):

- choose and analyze appropriate sources to gain content knowledge
- apply acquired content to connect past and present day events
- collaborate and interact with others in a diverse and ever-changing world

Enduring Understandings

Students will understand that . . .

Essential Questions

*EU 1*

there is a relationship between physiological processes and behavior, including the influence of neural function, the nervous system, the brain, and genetic contributions.

*EU 2*

perception involves the interpretation of sensory inputs as a cognitive process.

*EU 3*

variations in consciousness are affected by the sleep cycle, dreams, hypnosis, and the effects of psychoactive drugs.

*EU 1*

- Does one's biology influence their behavior?
- What areas of life/behavior could be attributed to one's biology?
- What areas of life could be attributed to one's environment and learning?
- How could damage to the brain impact function?

*EU 2*

- How do organisms' sensory organs and brain shape perception of the external world?
- How would one react to losing a sensory ability?

*EU 3*

- Why are there variations in altered states of consciousness?
- How can lack of sleep perpetuate physical and psychological effects?
- Does everyone have the same response when taking a psychoactive drug?

Knowledge

Students will know . . .

*EU 1*

- the major divisions of the nervous system. (1.1)
- the structure, function, and types of neurons.(1.2)
- the structure and function of the brain. (1.3,1.4)
- the methods used to study the structure and functions of the brain (both imaging and recording) and how they have evolved in recent decades.(4.1)
- the function and importance of hormones and neurotransmitters.(2.1)
- the role of twin studies and adoption studies in understanding the role of nature vs. nurture.(3.2)

Skills

Students will be able to. . .

*EU 1*

- label and explain the parts of the brain, nervous system, neuron, and the various sensory organs. (1.1,1.2,1.3)
- describe how the balance of neurotransmitters and hormones impact behavior.(1.1,1.2,1.3)
- compare and contrast the various recording and imaging techniques used to study the brain and body.(4.1)
- classify a list of behaviors as being nature-influenced, nurture-influenced or both.(3.2)
- hypothesize the probable effects of damage to the brain on various functions. (1.3,1.4)

- some of the most common impacts of chemical imbalance in the brain.(1.3,1.4)
- how damage to specific portions of the brain will impact behavior.(1.3,1.4)
- how male and female brains differ biologically.(2.1)

### *EU 2*

- the difference between sensation and perception.(1.1)
- the various thresholds for each of the senses.(1.1,1.2)
- the structure and functions of sensory organs and how they communicate with the brain.(2.1,2.2)
- the possible effects of limitations in each of the sensory systems.(3.1)
- the role that attention and experience play in perception.(3.1)
- the Gestalt principles that guide perceptual experience.(3.1,3.2)
- various depth perception cues.(3.2)
- ways in which sensory illusions trick the brain.(3.4)

### *EU 3*

- the different altered states of consciousness.(1.1)
- the role of circadian rhythms in regulating behavior and impacting one's life.(2.1)
- the stages of sleep and their characteristics and how they are studied.(2.1)
- the most common sleep disorders and their characteristics.(2.4)
- the different theories regarding dreams and their possible meanings.(2.5)
- the negative physical and psychological effects of sleep deprivation.(2.4)
- the origins and purposes of hypnosis.(4.2)
- the role of susceptibility in the effectiveness of hypnosis.(4.2)

### *EU 2*

- explain the difference between sensation and perception and provide examples of each.(1.1)
- describe the roles of various cortices in the brain in creating sensory and perceptual experiences.1.1)
- debate the universality or uniqueness of perceptual experience.(3.1)

### *EU 3*

- describe the characteristics and importance of NREM and REM sleep.(2.1)
- identify the symptoms of the most common sleep disorders and their impact on everyday functioning.(2.4)
- apply multiple theoretical perspectives to dream interpretation.(2.5)
- debate the legitimacy of hypnosis and meditation.(4.1, 4.2)
- analyze and discuss the effects of drugs on individuals and society.(3.1)

- the different types and effects of meditation and the controversies surrounding its effectiveness.(4.1)
- the most common licit and illicit drugs and their effects on consciousness.(3.1)
- the biological and psychological impact of drugs and addiction on the brain and its functioning.(3.3)

### Stage Two - Assessment

### Stage Three - Instruction

Learning Plan: **Suggested Learning Activities to Include Differentiated Instruction and Interdisciplinary Connections: Each learning activity listed must be accompanied by a learning goal of A= Acquiring basic knowledge and skills, M= Making meaning and/or a T= Transfer.** *The following color codes are used to notate activities that correspond with interdisciplinary connections and 21st Century Life & Career Connections (which involves Technology Literacy): Red = Interdisciplinary Connection; Purple = 21st Century Life & Career Connection*

- Use Neuroscience for Kids and <http://learn.genetics.utah.edu/content/addiction/> to explore the nervous system, structures, functions, and effects of drugs on the brain and behavior (Web quest on z drive) (A, M, EU1)
- View the HBO documentary “Coma” and write a reaction essay to it. (A, M, EU1)
- Complete a survey on right/left brain hemisphere dominance. Discuss recent articles about how hemisphere dominance is less impactful than once believed. (M) EU1
- Create a graphic organizer featuring components of the nervous system and their functions. (T, A, EU1)
- Label diagrams of the brain and neuron. (T, A,EU1)
- Take a field trip to the Brain Exhibit at the Franklin Institute. (M, EU1)
- Take a field trip to the Mutter Museum Philadelphia PA (T, M, EU1)
- Watch “Brain Games” episodes to do interactive experiments with the brain and sensation and perception. (DVD) (M, EU1, EU2)
- Create a neuron from pipe cleaners (T, EU1)
- Create brain hats and label all parts of the brain (A,T, EU1)

- Human neuron chain: students stand in a line and touch the shoulder of the person in front of you. Discuss the path of information in the brain and body. Go cross body and identify the new path and how it impacts reaction time. (T, M, EU1)
- **Trace body and label brain and nervous systems (A, EU1)**
- “What Makes Teens Tick?” TIME article and questions (A, M, EU1)
- Watch YouTube video on Phineas Gage’s brain injury and resulting impact on his behavior: <https://youtu.be/oPAqTP7058Q> (A) EU1
- Brain webquest available on z-drive (parts of brain, functions, lobes of brain, impact of split brain surgery). (A,EU1)
- Mr. Split-Brainy game (website that allows students to play game regarding split-brain surgery) <http://www.nobelprize.org/educational/medicine/split-brain/splitbrainexp.html> (M, EU1)
- Have students tie a shoe with one student acting as the left hemisphere (speech, control of right hand) and the other student acting as the right hemisphere (no speech, control of left hand). (T, M, EU1)
- Show video of a doctor or psychologist split-brain patient). (YouTube) (A, EU1) <https://youtu.be/Ntnua6TRue4>
- Create a list of things they are capable of doing using various parts of the brain (scuba diving in Aruba because of medulla) (M. EU1)
- Create a brain metaphor detailing at least five parts of the brain and their functions; display on a colorful poster. (M, EU1)
- Touch sensor demonstration on fingertips vs. arms/back (T, M, EU1)
- Brain and Biology Jeopardy review and Who wants to be a Millionaire (Google Drive)(A, EU1)
- Show “Awakenings,” utilize accompanying worksheets to spark meaningful discussion about damage to the brain, impact on patients and families, and the ethics and impact of drug research in treating brain disorders. (M, EU1)
- Watch “Gabby Gifford Courage and Hope” <http://www.hulu.com/watch/300217> (A, EU1)
- Watch “A Stroke of Insight” TED talk by Jill Bolte-Taylor, a neuroscientist who suffered a stroke and lost function in her left hemisphere. (A,EU1) <https://youtu.be/UyyjU8fzEYU>
- View “The Theory of Everything” and discuss the impacts of motor neuron disease on the brain and body (M, EU1)
- View “House” episode “Both Sides Now” to see real effects of being a split-brain patient as well as the exaggerated portrayal from the media (A, EU1) [https://youtu.be/NX6Q4\\_G567M](https://youtu.be/NX6Q4_G567M)
- Hemisphere Dominance [http://capone.mtsu.edu/studskl/hd/hemispheric\\_dominance.html](http://capone.mtsu.edu/studskl/hd/hemispheric_dominance.html) (M, EU1)
- Three Identical Strangers Documentary video and questions DVD (M,EU1)
- Square activity to determine the differences in individual’s sensation and perception (T, M, EU2)
- Label diagrams of the different sensory organs (A, EU2)
- Sound Localization activity (blind fold and ring bells around the room and have student point to where the sound is coming from) (M, EU2)
- Vision Goggles activity- have students wear the perception changing goggles and complete easy tasks (walking in a straight line, catching a tennis ball) and reflect on how difficult it was (T, M, EU2)
- Stroop effect test (T, M, EU2)
- Blind spot demonstration- draw cross and dot on piece of paper, test blind spot by closing one eye (T, M, EU2)
- Opponent-process theory demonstration with changing flag colors (M, EU2)

- View “True Life - I’m Deaf” to understand the different types of deafness and how it affects everyday life (A, EU2) [https://youtu.be/ ZfTyBgdzBE](https://youtu.be/ZfTyBgdzBE)
- Demonstration on interconnectedness of senses (spinning around, standing on one foot, closing eyes) (T, M, EU2)
- View pictures of reversible figures (M, EU2)
- Rods and cones color perception in peripheral vision activity (description on z-drive). (M, EU2)
- “A Life without Pain” video about children who cannot feel pain. DVD available from Jackie Zeigler at Seneca. [https://www.youtube.com/watch?v=1vLsZ\\_dXFAg](https://www.youtube.com/watch?v=1vLsZ_dXFAg) (A, EU2)
- Weber’s Law demonstration; two student volunteers, each wear backpack. Teacher adds weight to a backpack that starts out light and a backpack that started out heavy; student wearing light backpack will notice change first. (M, EU2)
- Absolute Thresholds experiment-students bring in stimuli and work in groups to determine individual's' absolute thresholds for the various senses. (T, EU2)
- Sensory adaptation activity; turn lights off for a few minutes and turn them back on (T, M, EU2)
- Sensory deprivation activity; have one student sit with ear plugs, blindfold, gloves for a portion of class period, then have a student report back to the class about the experience. (T, M, EU2)
- Have students explain optical illusions, using knowledge of Gestalt principles used by brain. (M, EU2)
- Jeff Milner back masking website (difference between back masking and subliminal messaging; power of suggestion). <http://jeffmilner.com/backmasking/> (A, EU2)
- “All the Signs of Pregnancy Except one: a Baby” pseudocysts article and questions (A, EU2)
- “Mirrors Don’t Lie” article and questions (A, EU2)
- Brain Games- applicable sensation and perception videos and questions (M,EU2)
- PBS “The Teenage Brain” video and questions (M, EU2) [https://youtu.be/FGaz\\_fHLHNU](https://youtu.be/FGaz_fHLHNU)
- Frontline “A League in Denial” concussions video and questions (M, EU2) <https://youtu.be/SedClkAnclk>
- Addiction simulation activity with ice (T, EU3)
- **Drug Research Project (Google Drive) (T, EU3)**
- Sleep/dream log project (Google Drive) (T, EU3)
- Complete quiz on common sleep myths (A, EU3)
- Complete surveys on sleep habits/deprivation (T, M, EU3)
- Suggestibility Exercise-students close eyes and keep arms outstretched in front of them and focus on your voice while imagining a balloon tied to one hand and that hand being pulled upwards by the balloon, while simultaneously imagining a cinderblock hanging down from the other hand. Students who would be especially susceptible to hypnosis will have the largest discrepancy in the distance of one hand to the other at the end of the activity. (T, EU3)
- View “Intervention” video [https://www.youtube.com/watch?v=kBugKGW0\\_eA](https://www.youtube.com/watch?v=kBugKGW0_eA) (A, EU3)
- View “Freud’s Interpretation of Dreams” video <https://www.youtube.com/watch?v=lig53eW2ptg> (A, EU3)
- Mantras activity students will create, color, and describe their own mantra T, (M, EU3)
- View 60 minutes episode “The Science of Sleep” available on YouTube. (A, EU3) <https://youtu.be/eqA8pUGBWNk>
- Debate the legality of various drugs (M, EU3)



- View HBO documentary “Warning this drug May kill you” and answer corresponding questions (A, EU3)
- View “Inception” and write essay on the connections to altered states of consciousness DVD (M, EU3)
- Arrange an in-school field trip for a hypnotist show in the auditorium (T, EU3)
- Read and discuss articles on sleep deprivation (A, EU3)
- Mind Explained “Hallucinogens video and questions (M, EU3) <https://youtu.be/U3IWVLuc6CE>
- “The Truth about Alcohol” Netflix documentary video and questions (M, EU 3)
- Mind Explained “Netflix” meditation, sleep, psychedelics. (M, EU3)

### Pacing Guide

<i>Unit #</i>	<i>Title of Unit</i>	<i>Approximate # of teaching days</i>
1	Introduction to Psychology and Research	30
2	Biological Bases of Behavior, Sensation, Perception and Altered States of Consciousness	30
3	Cognition - Memory, Thinking and Intelligence, Language and Learning	30
4	Motivation, Emotion, and Personality, Human Development	30
5	Stress, Psychological Disorders and Therapy	30
6	Social Psychology	30

### Instructional Materials

- Scholastic Choices
- Meyer's Psychology AP Textbook
- ACC/CP- Hockenberry Psychology Textbook
- Lumen Learning
- Sprout videos
- Practical Psychology videos
- Mind field episodes

## Accommodations

Special Education: The curriculum will be modified as per the Individualized Education Plan (IEP). Students will be accommodated based on specific accommodations listed in the IEP.

Students with 504 Plans: Students will be accommodated based on specific accommodations listed in the 504 Plan.

English Language Learners: Students will be accommodated based on individual need and in consultation with the ELL teacher.

Students at Risk of School Failure: Students will be accommodated based on individual need and provided various structural supports through their school.

Gifted and Talented Students: Students will be challenged to enhance their knowledge and skills through acceleration and additional independent research on the subject matter.