| ***Behavioral Sciences Unit 2: Biological Bases of Behavior***  ***November-January*** | | | | | |
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| **Targeted Standards**  • 2.1.12.PGD.1: Develop a health care plan that includes practices and strategies designed to support an active lifestyle, attend to mental health, and foster a healthy, social and emotional life.  • 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.  2.1.12.EH.2: Analyze factors that influence the emotional and social impact of mental health illness on the family.  • 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness).  • 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audience (e.g., dimensions of health).  • 2.1.12.CHSS.6: Evaluate the validity of health information, resources, services, in school, home and in the community. | | | | | |
| **Rationale and Transfer Goals** :  This unit explores the ways in which the brain and the body work together. The functions of the nervous system, the endocrine system, and how the environment affects the brain are described. This unit will explore altered states of consciousness, and sleep and sleep disorders are introduced. Additionally, the processes of sensation and perception are examined. Sensory thresholds and the organization of perceptual information are explored. | | | | | |
| **Enduring Understandings:** What are the most essential conclusions that students should be guided towards throughout this unit?  1. Learning about the nervous system helps us know how messages that are sent to the brain cause behavior. 2. There are many parts in the human brain that work together to coordinate movement and stimulate thinking and emotions, resulting in behavior. 3. The endocrine system controls and excites growth and affects emotions and behavior in people. 4. Heredity is the transmission of characteristics from parents to children, while environment is the world around you; they both have a major effect on your body and behavior. 5. Sleep – an essential state of consciousness – involves stages and periods of dreaming. 6. Hypnosis, biofeedback, and meditation are altered states of consciousness that can occur when we are awake. 7. Psychoactive drugs interact with the central nervous system to alter consciousness. 8. Sensations occur anytime a stimulus activates a receptor, and they initiate humans’ understanding of their reality. 9. The sense organs – the eyes, ears, tongue, nose, skin, and others – are the receptors of sensations. 10. The way we interpret sensations and organize them into meaningful experiences is called perception. ￼ | | | | | |
| **Essential Questions**:  1. What is the basic structure of the nervous system? 2. How do the many parts of the brain influence human behavior? 3. How does the endocrine system influence human behavior? 4. How do heredity and environment affect human behavior? 5. What is involved in the various stages of sleep? 6. How do altered states of consciousness influence people when they are awake? 7. How do drugs alter people’s consciousness? 8. How do sensations influence people’s understandings? 9. How do people’s senses receive sensations? 10. How do people understand sensations? | | | | | |
| **Content/Objectives** | | | **Instructional Actions** | | |
| **Content**  ***What students will know*** | **Skills**  ***What students will be able to do*** | | **Activities/Strategies**  ***How we teach content and skills*** | | **Evidence (Assessments)**  ***How we know students have learned*** |
| 1. Identify the parts of the nervous system.  2. Demonstrate the functions of the nervous system.  3. Describe the structure and functions of the human brain and ways psychologists study the brain.  4. Predict the functions of hormones in the endocrine system.  5. Categorize examples of the effects of heredity and environment on behavior.  6. Summarize research of the effects of heredity and environment on behavior.  7. Analyze the four stages of sleep and the period of dreaming.  8. Interpret how hypnosis, biofeedback, and meditation are altered states of consciousness that can occur while we are awake.  9. Compare and contrast psychoactive drugs and demonstrate how they interact with the central nervous system to alter consciousness.  10. Critique how sensations occur anytime a stimulus activates a receptor and that perceptions allow humans to react to their environment.  11. Provide examples of the sense organs as the receptors of sensations.  12. Recognize perception as the way we interpret sensations and organize them into meaningful experiences. | Journal Writing: Sleep & Dreams  Story of superhero with augmented brain structure  Outcome of split brain surgery  How an optical illusion works  How experience is needed for depth perception | | Biological Bases of Behavior  Define all chapter vocabulary Diagram and build a neuron Diagram the Central Nervous System Neuron dance  Write a ghost story about the nervous system Kinesthetic neural communication  Video: neurotransmitters  Building brain models  Brain teaser puzzles  Video clip: Shallow Hal (hypnosis)  Video: left and right brain  Superpowers activity  Intrinsic v. extrinsic activity  Habit bound activity  Mind reading activity  Primary Source Reading: Neurotransmitter and their Effects Activity: identify left right brain functions  Computer Lab: IQ Test  Virtual Game: Mr. Split Brainy  Video: twins and nature v. nurture  Hormones v Neurotransmitter Venn diagram  MRI, EEG, PET and CAT scan pictures  Case Study: split brain  Debate: nature and nurture  Color code diagram of human brain  **Sensation and Perception**  Define all chapter vocabulary  Absolute threshold & difference threshold experiments  Sensory adaptation activity  Optical illusions  Class discussion: ESP??  Video Clip: Subliminal messages (Disney movies and advertisement) Stroop effect demonstration  Blind spot demonstration  Taste test experiment  Create an advertisement using gestalt principles  Cocktail party demonstration  Dual listening demonstration  Weber’s Law demonstration  Video: selective attention – gorilla Video: subconscious attention – memory Video: change blindness  Difference threshold demonstration Zimbardo prison experiment Diagram an eye  Color blindness demonstration Video: laser eye surgery    Sound demonstration (Beep test)  Diagram an ear  Taste test experiment  Analyze illusions for monocular and binocular cues Video Clips: optical illusions  The Sound of Metal Film  **States of Consciousness**  Diagram the sleep cycle  Chart on # of hours of sleep/age group  Write a story about circadian rhythm  Keep a journal of sleep and dreams  Top (10) nightmares list  Altered v. Normal activities list  Analyze dreams based on many different theories  Compare the effects of sleep loss of those of alcohol  Rate sleep disorders  Video Clips: sleep disorders  Movie: Rat Race (narcolepsy)  Experiment of power of suggestion  List of hypnotic states  Demonstration: hypnosis suggestibility  Primary Source Reading: Hypnosis and Athletics  Primary Source Reading: How Much Sleep Do You Need?  Primary Source Reading: Hypnosis and the Suppression of Pain  Meditative breathing  Yoga/Tai Chi  Diagram drugs and effects on consciousness  Mouse Party | | **Formative Assessments:**  **HW/CW activities:** make a model of a brain, computer demonstrations, IQ test, diagrams of neuron, brain, eye, ear, and endocrine system, ghost story and circadian rhythm story, packet of questions  **In Class Discussion:** Question and answer, nature v. nurture debate  **Notebook:**  Cornell Notes daily summative  **\*These assessments will mostly require students to: remember, understand, apply, and analyze.\***  **Summative Assessments: \_**  Brain/Neuron Quiz, Biological Bases of Behavior Multiple Choice & Open Ended Response Questions, Sensation and Perception: Multiple Choice, Open Ended Response Questions, Sleep and Consciousness Multiple Choice & Open Ended Response Questions |
| **Spiraling for Mastery**  **Where does this unit spiral back to other units from this or previous years**  **in order to ensure that students retain mastery of what they’ve learned?** | | | | | |
| **Content or Skill for this Unit** | | **Spiral Focus from Previous Unit** | | **Instructional Activity** | |
| 1. Identify the parts of the nervous system.  2. Demonstrate the functions of the nervous system.  3. Describe the structure and functions of the human brain and ways psychologists study the brain.  4. Predict the functions of hormones in the endocrine system. | | 1. Recognize the range of topics that are covered in an introductory psychology course.  2. Describe the goals and scientific basis of psychology.  3. Explain important trends in the history of psychology.  4. Analyze various approaches to the study of psychology.  5. Identify the work of a psychologist. | | Class Notes - Discuss with class  Class Discussions - Class will discuss and debate topics in psychology  Videos - Students will watch clips of important psychology topics  Lab experiments /Using Case studies from various chapters | |
| **Career Readiness, Life Literacies, and Key Skills:**  9.4.2.IML.2: Represent data in a visual format to tell a story about the data    9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems    9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process    9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and pov  9.4.8.GCA.1: Model how to navigate cultural differences with sensitivity and respect    9.4.8.TL.3: Select appropriate tools to organize and present information digitally.  9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas | | | | | |
| **Key resources:**  Holt McDougal Psychology - Principles in Practice/Online  Holt McDougal Psychology - Online Resources  Holt McDougal Psychology - workbook and guided reading selections  Primary Source Reading: Stroop effect, Neurotransmitters and their Effect, Hypnosis and Athletics, How Much Sleep Do You Need?, Hypnosis and the Suppression of Pain  Secondary Source Reading: Phineas Gage | | | | | |
| **Interdisciplinary Connections:**  **Language Arts** –Debate: nature v. nurture, Open ended response: writing a ghost story, circadian rhythms, and sleep and dreams journal RH.11-12.3.  **W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions). (1-LS3-**RL.11-12.1. Cite strong and thorough textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.  NJSLSA.W3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.  **Technology** – Google Classroom /Docs/ Slides for typed documents, video clips, web navigation, applications for brain study 8.1.2.DA.1:  **Art** – Pipe cleaner neuron, Create a brain, color coding brain functions, analyze optical illusions, creating a persuasive advertisement, neuron dance, neural communication Anchor Standard 5: Selecting, analyzing and interpreting work.  Anchor Standard 6: Conveying meaning through art.  **Science** – Discussion of the nervous system, diagram of nervous system, and sleep cycle, anatomy of the eye, ear and tongue, identification of right and left brain functions HS-LS4-3. | | | | | |
| **Intersections of History:**  **Black: Examining the relationship between race and hearing and vision loss**  **Hispanic: Cognitive Impairment in Hispanic Americans**  **Women: Gender differences in the senses**  **LGBTQ: Biological Basis of Sexual orientaiton /genetic component examination studies** | | | | | |
| **Important Vocabulary:**  **peripheral nervous**  **system**  **neurotransmitter**  **synapse**  **autonomic nervous**  **system**  **cerebrum**  **cerebral cortex reticular**  **endocrine system**  **perception**  **absolute threshold**  **difference threshold**  **sensory adaptation**  **signal-detection theory**  **sensation**  **pupil**  **lens**  **retina**  **photoreceptors**  **blind spot**  **visual acuity**  **complementary**  **afterimage**  **cochlea**  **auditory nerve**  **conductive deafness**  **sensorineural deafness**  **gate theory**  **vestibular sense**  **kinesthesis**  **proximity**  **similarity**  **continuity**  **common fate**  **stroboscopic motion**  **monocular cues**  **binocular cues**  **retinal disparity** | | | | | |