E5: Biological Basis of Behavior - Chapter 3

Content Area: **Social Studies**
Course(s): **Psychology**
Time Period: **Semester 1**
Length: **2.5 weeks**
Status: **Published**

Standards

SCI.9-12.B	Biopsychology
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.1.1.4	Describe lateralization of brain functions
SCI.9-12.DL	Development and Learning
SCI.9-12.DL.1	Life Span Development
SCI.9-12.DL.1.1	Methods and issues in life span development
SCI.9-12.DL.1.1.1	Explain the interaction of environmental and biological factors in development, including the role of the brain in all aspects of development
SCI.9-12.DL.3	Language Development
SCI.9-12.DL.3.3	Language and the brain
SCI.9-12.DL.3.3.1	Identify the brain structures associated with language
SCI.9-12.DL.3.3.2	Discuss how damage to the brain may affect language

Enduring Understandings

The students will understand that:

1. Behavior consistently found in a species is likely to have a genetic basis that evolved because the behavior has been adaptive.
2. The body's two communication systems, the nervous system and endocrine system, both use chemical messengers to communicate with targets throughout the body.
3. The brain is composed of many specialized and interconnected modules that work together to create mind and behavior - including mental disabilities.
4, Genetics plays a very critical role in both who and what we are, but not without influences from the environment.
5. Advances have been made in science and technology that allow us to see specific genetic traits along with specific brain function and activity.
6. The basic building blocks and structure and communication systems that allow humans to live and function in society.
7. The impact that a variety of injuries, chemicals, drugs and additional environmental factors have on brain function and development.
8. The nature verses nurture argument remains complex and

controversial in regards to neuroscience.

Essential Questions

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1. What behaviors appear to be influenced by nature selection?

2. To what extent is our behavior predetermined by our genetics?

3. What ethical arguments should we use in the debate over designer children?

4. How would cloning impact identity?

5. To what extent can people really recover from a major brain injury?

6. Why do genetic diseases and brain injuries appear to impact people so differently?

7. How good if idea is it to take substances like psychoactive that influence our neural commination?

8. To what extent do we really need two different communication systems for our body to operate (endocrine and nervous systems)?

9. How is using only ten percent of our brain impacting our abilities?

10. How ethical is it that/if neuroscientists read our minds using modern technology?

11. How is it possible that drugs created to help improve specific symptoms affect people so differently with a variety of side effects?

Knowledge and Skills

Learning Objectives (SWBAT)

-Explain the process of neural communication.

-Explain how neurotransmitters work.

-Delineate the different steps of the neural chain.

-Analyze the difference between the neural and hormonal systems.

-Identify the parts of the brain and the functions of each.

-Describe the different types of brain scans.

Content

1. Physiological Techniques (e.g., imaging, surgical)

2. Neuroanatomy

3. Functional Organization of Nervous System

4. Neural Transmission

5. Endocrine System

6. Genetics

7. Evolutionary Psychology

Transfer Goals

Students will be able to independently apply their knowledge about the human nervous system and brain structure to their understanding of human behavior and disorders.

Students will be able to independently distinguish between correlation and causation when interpreting biological research findings, especially in studies linking brain activity to specific behaviors.

Resources

Textbook Reading:

Primary Student Textbook: Myers Psychology for AP

Course Resources:

1. Benjamin, Ludy T. Jr., eds. Favorite Activities for the Teaching of Psychology. Washington, D.C.: American Psychological Association, 2008.

2. Bensley, D. Alan. *Critical Thinking in Psychology: A Unified Skills Approach*. Pacific Grove, Calif.: Brooks/Cole, 1998.

3. Hock, Roger R. Forty Studies that Changed Psychology: Explorations into the History of Psychological Research. 5th ed. Upper Saddle River, N.J.: Pearson/Prentice Hall, 2005.

4. Rolls, Geoff. Classic Case Studies in Psychology. London: Hodder Arnold, 2005.

5. 3D Brain app

6. The Human Brain Book by Rita Carter

7. Brain Games

8. Nova Special: The Brain

Additional Resources from WH databases, and articles connected to the content, including primary readings, historiography, and secondary sources.

Links

http://psychcentral.com/

http://www.psychologytoday.com/

http://www.apa.org/

http://www.scientificamerican.com/section/lateststories/

http://www.psychologicalscience.org/

http://www.sciencedaily.com/news

http://www.alleydog.com/

http://www.apa.org/research/action/glossary.aspx

http://allpsych.com/psychology101/index.html

http://www.simplypsychology.org/perspective.html

Assessments

https://docs.google.com/document/d/1mKgdwpriGuRcVHIVCJUdBEk7lih12Q0ckKSTC4TMUXs/edit

Modfications

https://docs.google.com/document/d/1ODqaPP69YkcFiyG72fIT8XsUIe3K1VSG7nxuc4CpCec/edit?tab=t.0