

THE TEENAGE BRAIN IN SEARCH OF ITSELF



Introduction:

Why do you feel like an alien in your body? Why don't your parents understand you? Why don't your teachers understand you? Brothers and sisters don't understand you.

Often your peers can't connect with what is going on in your head. Even you don't have a clue why you said what you said, or did what you did. So what's happening?

Objective: Using this webquest, you will develop their own understanding on topics in neuroscience. This is an inquiry- based search that requires you to create your own drawings and data tables. You will also answer questions and explore topics related to neurobiology. At the completion of the quest project, you will have compiled a resource document that is a personal learning tool, and acquired a background on the topic that will help answer some of the questions posed in the introduction in the first paragraph. It is a process of taking ownership in what you learn. Work at your own pace but do not waste time or other resources provided in class.

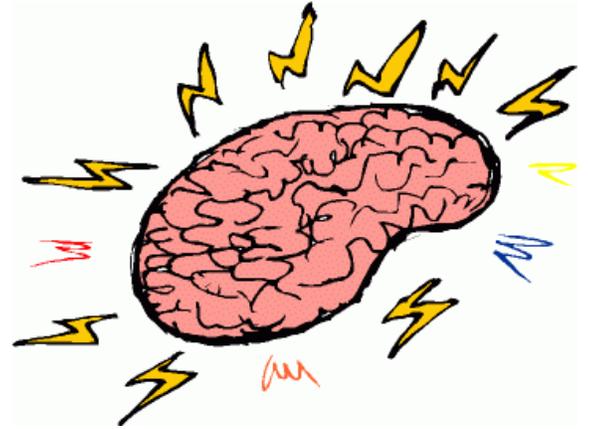
TOPIC SEQUENCE

- A. The Big Picture : A look at your brain and its parts**
- B. Close Up Picture : The neuron and neurotransmitters**
- C. Getting the Picture : Technology used to “see” the brain**
- D. How is your brain changing?**
- E. Where in your brain are the changes happening?**
- F. What might these changes mean in terms of how you think, learn, and your behavior?**

A. The Big Picture

A look at your brain and its parts:

Click on the URL below.



<http://faculty.washington.edu/chudler/nsdivide.html>

Read "The Central Nervous System".
Answer the questions on the outline given in class.

Click below to learn more about your brain and it's parts. Complete the drawings and table on the outline given in class.

<http://uwf.edu/jgould/Cortex.jpg>

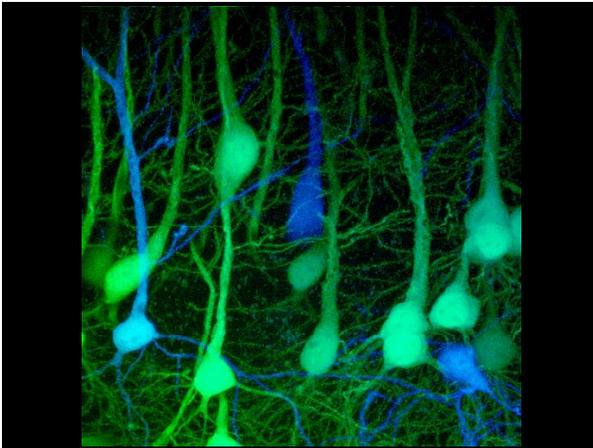
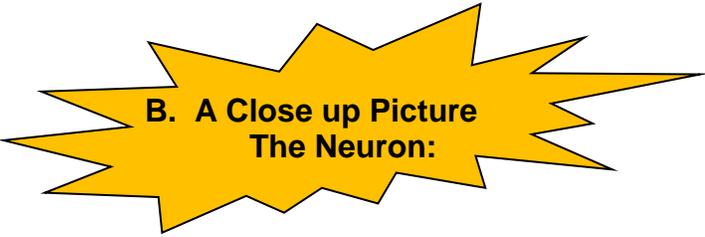


Image source : J. Sanes, HHMI - Harvard



B. A Close up Picture The Neuron:

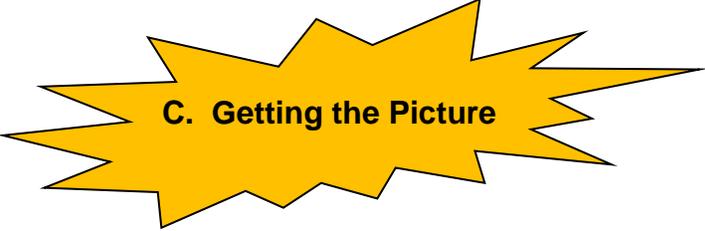
Click on the link below and scroll down to the paragraph that **begins** with **Neurons**.
Read about neurons and glial cells. Answer the questions on the outline.

<https://courses.lumenlearning.com/boundless-biology/chapter/neurons-and-glia-cells/>

Neurotransmitters:

Click on the link below. Complete the questions on the outline.

http://www.thebrain.mcgill.ca/flash/i/i_01/i_01_m/i_01_m_ana/i_01_m_ana.html#2



C. Getting the Picture

A number of ways of “seeing” your brain. Complete this section on the outline

<http://www.pbs.org/wnet/brain/scanning/index.html>

Image source

<http://www.pbs.org/wnet/brain/scanning/eeg.html>

http://www.brainexplorer.org/glossary/grey_matter.shtml



D. How is your brain changing?

Click on this link. <http://www.nimh.nih.gov/publicat/teenbrain.cfm>
Read the first three paragraphs of Teenage Brain : A Work In Progress.
After reading this part of the article, answer the questions on the outline.

Click on this link. This is a **LONG** but interesting article. Skim through to find the sections to focus on to answer the questions on the outline.

[http://www.ascd.org/publications/books/107006/chapters/Memory, Learning, and Test-Taking Success.aspx](http://www.ascd.org/publications/books/107006/chapters/Memory,_Learning,_and_Test-Taking_Success.aspx)

Click on this link
<http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/work/adolescent.html>

Scroll down to Changes in the Prefrontal Cortex
Read this section, which is part of an interview with Dr. Jay Giedd, whose research using MRi technology revealed an extensive amount of information on the developing teenage brain. Answer the questions on your outline.

F. What might these changes mean in terms of how you think, learn, and your behavior?

View a video clip from “Inside the Teenage Brain”.
Click on the link

<http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/view/>

Select video clip 4. “You Just Don’t Understand.”
Select video clip 3. “Mood Swings”.

Having completed your webquest there is one final question.

WEBQUEST FINISHED