



BRAINS RULE!

<http://www.brainsrule.org/kids/games/index.htm#>

Your assignment is to answer questions for at least three of the games on the page. Show what you've learned about Neurons and the Brain!



Neuron Laboratory

<http://www.brainsrule.org/kids/games/nl.htm>

1. What machine uses electrons to help us to see very small things?

- a. fMRI
- b. X-Ray
- c. Electron Microscope

What is the first number to the passcode? _____

2. Neurons send information down their axons using _____ signals.

- a. chemical
- b. electrical
- c. existential

What is the second number to the passcode? _____

3. Neurons "talk" to each other using _____ signals.

- a. chemical
- b. electrical
- c. osmosical

What is the third number to the passcode? _____

4. What imaging machine do you use to see the brain function?

- a. fMRI
- b. cat scan
- c. electron microscope

What is the fourth number to the passcode? _____



Neuron Navigator

<http://www.brainsrule.org/kids/games/nn.htm>

1. What three types of things affect the growth of neurons?
 - a. food, warmth, shelter
 - b. genes, chemicals, electrical signals**
 - c. video games, junk food, sleep
2. Adhesion molecules
 - a. make it easy for neurons to grow along their path**
 - b. are on the muscle and cause it to move
 - c. are fuel for neurons to grow really long
3. What are the chemicals that act like fuel for neuron growth?
 - a. neuron octane
 - b. neuron energy molecules
 - c. neuron growth factors**
4. Genes are large molecules in the nucleus of every cell.
 - a. True**
 - b. False
5. All neurons have a genetic map that:
 - a. causes the neuron to die
 - b. tells the neuron where to start growing**
 - c. provides nutrients to grow
6. The part of the neuron that extends during growth is the _____.
 - a. nucleus
 - b. mitochondria
 - c. axon**
7. Neuron growth can happen in a baby before it is born.
 - a. True**
 - b. False

8. As the neurons grow, the muscles give off _____ activity to attract them.
 - a. chemical
 - b. heat
 - c. electrical**
9. A motor neuron is a cell that connects the spinal cord to the muscle.
 - a. true**
 - b. false
10. What three signals help neurons to grow to their final destinations?
 - a. sound, movement and colour
 - b. genetic, chemical and electrical**
 - c. molecules, atoms and electrons



Brain-0-Coaster

<http://www.brainsrule.org/kids/games/boc.htm>

1. Seat 1 – The cerebrum is the largest part of the brain and is responsible for
 - a. balance and coordination
 - b. thinking, organization and reasoning
 - c. heartbeat, breathing and other internal organs
2. Seat 2 - The brain stem is a very important part of the brain that controls
 - a. balance and coordination
 - b. thinking, organization and reasoning
 - c. heartbeat, breathing and other internal organs
3. Seat 3 – The cerebellum develops from the hind brain and is responsible for
 - a. balance and coordination
 - b. thinking, organization, and reasoning
 - c. heartbeat, breathing and other internal organs
4. Seat 4 – The spinal cord is responsible for
 - a. balance and coordination
 - b. information to and from the brain
 - c. protecting your ribs

5. What can occur when the neural plate does not completely fold into the neural tube?
- a. cerebral palsy
 - b. spina bifida
 - c. cerebellum



Ecstasy Invaders

<http://www.brainsrule.org/kids/games/ei.htm>

1. A neurotransmitter is
 - a. **a chemical that neurons use to communicate**
 - b. a part of the neuron
 - c. a section of the brain used for memory
2. What does the Neuron Voyager use to communicate with other ships?
 - a. vesicles
 - b. **neurotransmitter pods**
 - c. cell bodies
3. Which of the following is TRUE?
 - a. Ecstasy is a chemical made by the brain.
 - b. Ecstasy is a neurotransmitter used to communicate between neurons.
 - c. **Ecstasy is a drug that affects communication between neurons.**
4. What is the chemical name for ecstasy?
 - a. 5.7 methylenemethamphetaminedioxy
 - b. 3.9 methamphetaminedioxymethylene
 - c. **3.9 methylenedioxymethamphetamine**
5. What score did you receive when you blocked the Ecstasy Invaders
 - a. 67 – 100
 - b. 33 – 66
 - c. 0 – 33



Neuron Explosion

<http://www.brainsrule.org/kids/games/ne.htm>

1. The cell body holds all the organelles of the neuron.
a. true
b. false
2. Messages travel down the axon to the next neuron.
a. true
b. false
3. The dendrites receive messages from other neurons.
a. true
b. false
4. Rough endoplasmic reticulum is where the proteins are put together.
a. true
b. false
5. The nucleus contains the DNA.
a. true
b. false
6. Mitochondria are organelles that make protein.
a. true
b. false
7. Golgi bodies are the protein packaging stations for the neuron.
a. true
b. false