

Chapter 1 Vocabulary List

- Nervous system
- Cerebrum
- Cerebellum
- Brain stem (p. 89-top)
- Neurobiologist (p. 89)
- Motor cortex (p. 89)
- Sensory cortex (p. 89)
- Left hemisphere (p. 91)
- Right hemisphere (p. 92)
- Corpus Callosum (appendix)
- Bipedal (appendix)
- Opposable thumb
- Neurons
- Dendrites
- Axon
- Stimulus
- Synapse (appendix)
- Neurotransmitters (appendix)
- Reflex
- Reflex arc (p. 97)

* All other word definitions can be found in the Biology "Red Book" in class.

Essay P. 84: JANE GOODALL

Jane Goodall studied _____ in Africa. She found that chimps are _____, _____ and _____.

Some chimps are very _____ and even _____.

30 years ago, scientists thought that only humans could make tools, have _____, and _____. Jane Goodall changed that thinking.

Do you think other animals have these traits? Explain.

Essay p. 86: DO YOU HAVE A GRIP ON THAT?

The two types of grips are _____ & _____ grips. Because humans have a/an _____ thumb, they can align the thumb with the fingers for precision.

Essay p. 88: MAPPING THE BRAIN

In the mid 1800's, a metal rod shot through Phineas Gage's _____, _____ and front brain.

At first it was thought that the only effect was the loss of sight in one eye, but his _____ changed. He was no longer good-natured; he was _____, rude, and _____.

In 1990, scientists learned that because Gage had damaged both _____ of the frontal lobe of his brain. This part of the brain controls _____ behavior and, therefore, changed the personality of Gage because it was damaged.

The _____ is the large upper part of the human brain and controls reasoning, thought, language and _____ movement.

The _____ is located at the back of the brain. It is much smaller than the _____ and controls balance.

Essay p. 89 Brains and more Brains

The _____ controls _____ and heartbeat, both of which are _____. (Children can't hold their breath and die because when they lose consciousness, their breathing begins again.)

The Cerebrum has a _____ hemisphere and a _____ hemisphere.

The left hemisphere controls the _____ and movement of the _____ side of the body, plus language and _____, and math /analytic ability.

The right hemisphere controls the _____ and movement of the _____ side of the body, plus _____.

Some body functions are controlled by **both** sides of the cerebrum; the brain can compensate for a loss of an ability. For example, if a person is blind, they have a very keen sense of _____.

The human _____, that controls thinking and reasoning, is very large. What does this mean?

The only organism that can read is the _____. That is why approximately 35% of humans have reading problems.

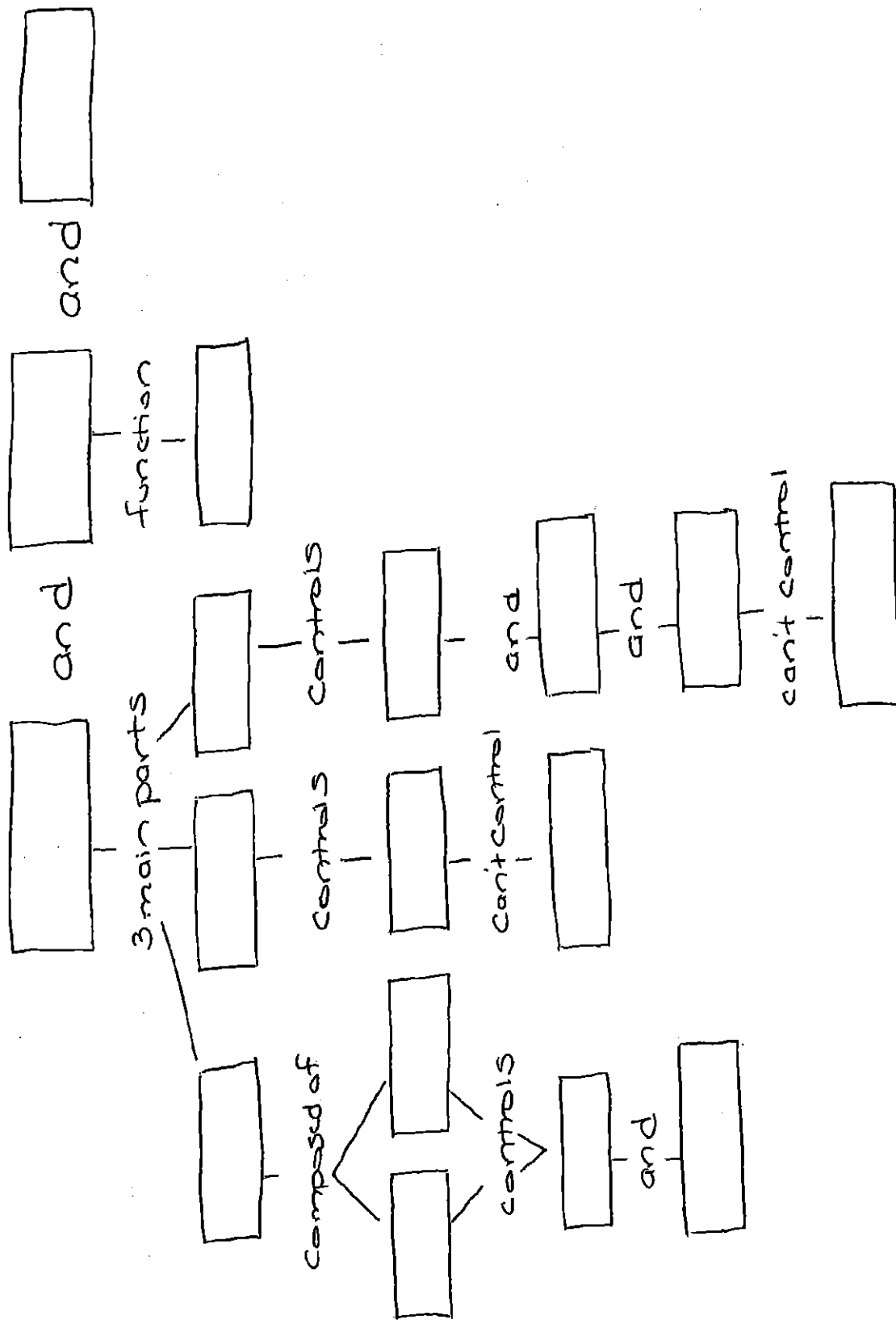
An elephant's and a _____ brain are larger than a human's brain.

FIND SOMEONE WHO.....

Instructions: Find someone who can answer one of the questions below. Have him/her write the answer and sign your sheet. Continue finding people who can help you answer the questions until your sheet is complete. *Each person can sign your sheet only once.*

1. Can name the largest part of the brain		
2. Can name the part of the brain that controls balance and coordinates muscles.		
3. Knows the part of the brain that controls breathing and heart beat		
4. Can name 2 involuntary actions controlled by the brain		
5. Can name the part of the brain that controls sight		
6. Can name the part of the brain that controls smell		
7. Can name the brain part that controls thought and emotion		
8. Can name the brain part that is also known as the 'brain stem'		
9. Can name the brain parts that are tested during a DUI (count and walk line)		
10. Can name the brain part being used to answer these questions		
11. Can name the prefix meaning "to make"		
12. The emotion Jane Goodall realized chimps have		
13. Can name the prefix meaning "the same"		
14. Knows whether affect or effect is interchangeable with ...it had a negative "result"		
15. Can name the person who in the 1800's had a metal rod go through his head		

Central Nervous System



Formative Assessment
Fundamentals of Science
Concept Mapping/ Key

11/2/10

Chapter One The Brain
Give List to Students

1. brain
2. cerebrum
3. cerebellum
4. medulla
5. spinal cord
6. thinking
7. voluntary movement
8. balance and posture
9. breathing
10. involuntary
11. involuntary
12. heart rate
13. blood pressure
14. left hemisphere
15. right hemisphere
16. carries signals to and from brain to body
17. nerves

Students can be given accompanying map or students can create their own maps.

Umbrella

- Start with umbrella closed and tied up
- Start the timer once the person touches the umbrella
- Fully open the umbrella, then close it and tie it back up
- Stop timer and record the time

Coins

- Lay coins out on the floor
- Start timer when person touches first coin
- Try to pick up each coin and place within the cup
- You **can not** use the cup to scoop the coins
- Once each coin is inside the cup stop the timer

Rubber Bands

- Spread rubber bands out on table/desk
- Start timer once the person touches a rubber band
- Use tweezers to pick up each rubber band one by one
- Place rubber bands inside the cup
- Stop the timer when all rubber bands are inside the cup

String

- Start the timer once the person touches the string
- Try to tie a knot in the string
- Stop timer once a knot is made

Book Pages

- Place book on the desk/table
- Start timer once the person touches the book
- Turn to pages 89, 224, 387 one at a time in order
- Close the book again after finding each page
- Stop timer when the student opens up to 3rd page

Lock/Key

- Lay the lock and key separate from each other on the desk/table
- The lock should start out in the locked position
- Start timer once person touches the key or lock
- Try to use the key to unlock the lock
- After unlocking it, close the lock back up and remove the key
- Lay the key and lock down separately and stop the timer

Scissors

- Start out with scissors and a piece of paper on desk/table
- Start the timer once the person touches the scissors
- Use the scissors to cut a triangle out of the paper
- Place the scissors back down on the table and hold up your triangle
- Stop timer

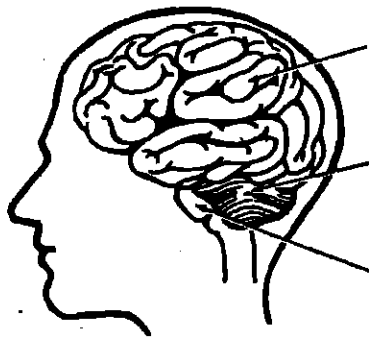
Name _____

Date _____

Class _____

HUMAN NERVOUS SYSTEM

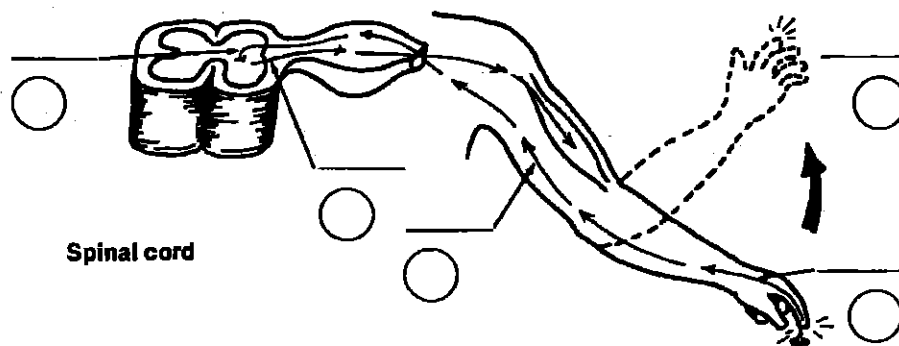
6. Complete this chart of the human brain.



a. Brain part b. Voluntary or Involuntary	Job
a. _____ b. _____	_____ _____
a. _____ b. _____	_____ _____
a. _____ b. _____	_____ _____
a. _____ b. _____	_____ _____

7. a. Label the drawing of a reflex below using the letters of the statements listed here.

- A. Message moves from spinal cord to arm muscle.
- B. Message moves from finger to spinal cord.
- C. Message reaches and enters spinal cord.
- D. Muscle contracting pulls hand away.
- E. Finger picks up message of sticking pin.



b. Put the numbers 1 to 5 in the circles near the blanks to put the steps of the reflex in the correct order.

Name _____ Date _____ Class _____

HUMAN NERVOUS SYSTEM

3. The diagrams below show the path that a message takes from the hand to the spinal cord and back again. One is incorrect. It has two major errors.

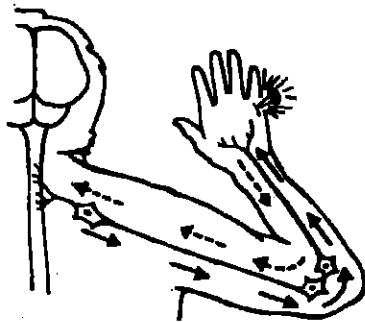


Diagram A

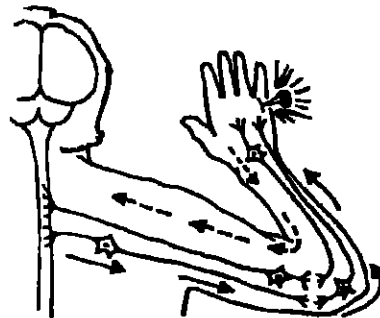


Diagram B

a. Which diagram is incorrect? _____

b. Describe the two major errors? _____

4. If the statement is true, place a check mark in the space provided. If it is false, change the underlined word to one that will make the statement true and write it down.

_____ a. When a message reaches the tip of an axon, a chemical is released.

_____ b. The nucleus is a small space between the axon of one neuron and the dendrite of another neuron nearby.

_____ c. A message moves along a neuron from the dendrite to the axon.

5. Examine this diagram. It shows a simple sketch of the human nervous system. Put the correct letter in the blank to identify the part being described.

a. Part that sends and receives messages to and from all body parts _____

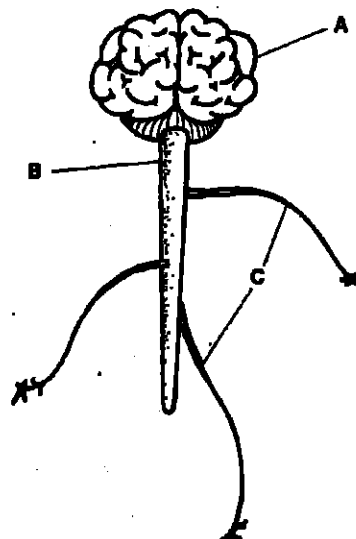
b. Protected by your vertebrae _____

c. Protected by your skull _____

d. Carries messages from skin to spinal cord _____

e. Spinal cord _____

f. Body nerves _____



Name _____ Period _____

Biology Study Guide---Chapter I

Good Luck☺

Matching: Write the letter of the *best answer choice* on the line next to the description. Answers CAN be used more than once!

- | | |
|---------------------------------------------------------------------------------|------------------------|
| 1. _____ The largest part of the human brain. | A. Cerebellum |
| 2. _____ This part of the brain controls heart beat. | B. Right hemisphere |
| 3. _____ Responsible for a good sense of smell. | C. Left hemisphere |
| 4. _____ This part of the human brain keeps us "balanced." | D. Olfactory bulb |
| 5. _____ This part of the human brain stores memory. | E. Optic lobe |
| 6. _____ This part of the brain has a lot of "folds." | F. Corpus callosum |
| 7. _____ Responsible for excellent "vision" in animals. | G. Neuron |
| 8. _____ All animals have this part of the brain. | H. Medulla /brain stem |
| 9. _____ Nerve fibers that connect the left and right hemispheres of the brain. | I. Cerebrum |
| 10. _____ A nerve cell. | J. Bipedal |
| 11. _____ Controls the right side of our bodies. | K. Voluntary |
| 12. _____ This part of a neuron releases a neurotransmitter. | L. Involuntary |
| 13. _____ Word that means "we can not control it." | M. emotions |
| 14. _____ This part of the human brain is responsible for "thinking." | N. axon |
| 15. _____ Word that means "walking upright on two feet." | O. dendrites |

Fill-in: Write the *best answer choice* on the line provided to complete each sentence.

16. The _____ can carry messages to the brain; it is also responsible for "reflex" behaviors.
17. The _____ System allows us to detect changes (stimuli) around us and respond to them.
18. Because humans have a/an _____, they can touch each fingertip to their thumb.
19. The two main types of grips that humans have are called the _____ and _____ grips.
20. _____ is defined as the behaviors and beliefs that are shared by a group and passed on from one generation to the next.

21. Two traits that separate humans from other primates are the _____ and _____ movement.
22. The chemicals that termites "tracked" in the lab are called _____.
23. The part of the cerebrum that is responsible for "feeling sensations" is called the _____.

24. Draw 2 neurons in a row. Label the diagram using the following terms:

Axon
Dendrites
synapse

direction of signal(→ or ←)
Nucleus
neurotransmitter

25. Tell which is the "stimulus" and which is the "response."

Mary pulled her hand away from the fire when she felt the heat.

Because someone rang my doorbell, my dog barked loudly.

John jumped when he felt the bug crawl on his leg.

26. Phineas Gage:

Doctors thought that Gage had only lost the sight in one eye, after his accident. But they soon realized that his good-nature was gone and he was now _____ and _____ because the metal rod had damaged the front of his _____ that controls social interactions and personality.

27. Jane Goodall:

Jane Goodall is known for her great amount of research on the _____.

Amazingly, it was not until Jane Goodall's research work in Africa, during the 1960's, that humans realized that they were not the only animals to _____ and be able to make and use _____.

It is also the first time humans realized that other animals had _____, like feeling sadness and compassion for others. List examples of these traits that we read about in class.

28. Tony's Brain:

Some of the students in class thought that Tony was Bipolar, immediately after reading the scenario in the text and learning of his symptoms. Would it have been acceptable to treat Tony for Bipolar episodes based on his symptoms? Why or why not?

29. Testable Questions: Chose the question that is most 'testable' and provide an explanation for your choice.

-Why did Tony have insomnia?

-How many hours per night, in the past 2 weeks, was Tony awake between the hours of 11 p.m. and 8 a.m.?

30. "A blast from the past" definitions!

a. To be "really into the lesson." _____

b. To give more details about a topic _____

c. The 3rd step of scientific method _____