Biology 1 / Sanderson Name_____ Per _____ Date:

# Nervous System: Response Time Lab

(read the entire procedure before proceeding)

Purpose:

Hypothesis: (write two hypotheses below: one for each of the two experimental trials. Remember that a hypothesis consists of a testable explanation, not just a prediction)

• (counting trial)

• (eyes closed trial)

Procedure:

1. Work with your seat partner. The seated subject should rest an arm on the desk so that the hand is extended past the edge of the desk. The last three fingers of the extended hand should be curled into a fist, leaving just the forefinger and thumb free, about 3-4 cm apart and parallel to the ground. Those two fingers will be used to catch the falling meter stick.

2. The experimenter should stand and hold the meter stick so its lowest number is between the thumb and forefinger of the subject's extended hand. The subject should be watching the ruler.

3. Without any warning, the experimenter will drop the stick. The subject will try to catch it with just the thumb and forefinger of the extended hand.

4. Make sure your lab sheet has your data on it. Record the point on the meter stick at which the subject caught it. Repeat the test 4 more times, recording the distance each time. Determine the average for the 5 trials.

5. Now the research team will test variables. Repeat the exercise exactly, but this time the subject must also count backwards from 100 by sevens. The experimenter will drop the meter stick while the subject is counting.

What is the variable being tested? _____

Again, average the time it takes for the subject to catch the meter stick while counting.

6. Repeat the initial procedure while the subject's eyes are closed. The experimenter will snap his or her fingers to signal when the stick is released. Repeat 4 more times and calculate the average.

What is the variable being tested? _____

7. Repeat entire procedure, reversing partner roles.

8. Now that you have read the procedure, write a Purpose and the two hypotheses above. After that is completed, you may begin the lab.

Results:

Table 1. Descriptive Title: _____ (write your own)

| Trials | Distance (cm) | | | | | Avg |
|---|---|---|---|---|---|---|
| **Control** | | | | | | |
| **Counting** | | | | | | |
| **Eyes Closed** | | | | | | |

Discussion Questions:

1. In the first test, describe the neurologic sequence of events in your body that enabled you to respond and catch the meter stick.

2. Which receptors are involved? (And where are they located?)x

3. In the second test, what effect does thinking have on response time? Propose an explanation for your answer.

4. Compare the response time in the first test with the response time in the third test.. In which situation was response time the shortest? Why?

5. Discuss sources of experimental error in these experiments.