Lab: Nervous System and Parts of the Brain

Exploring the Nervous System

Every day your central nervous system processes thousands of signals and prepares a proper response. To help you better understand how the central nervous system works, try the 4 experiments below with a partner. Then analyze what happened by answering the questions.

Experiment A: Have your partner hold your arms down against your sides. For about 30 seconds, press your arms upward as hard as you can. Then have your partner let go.

1. What happened? _____
2. Why do you think this happened? _____
   _____
3. What part of the brain was involved? _____

Experiment B: Stand on one leg and balance yourself for one minute. Now try balancing on one leg for one minute with your eyes closed. Have your partner do the same.

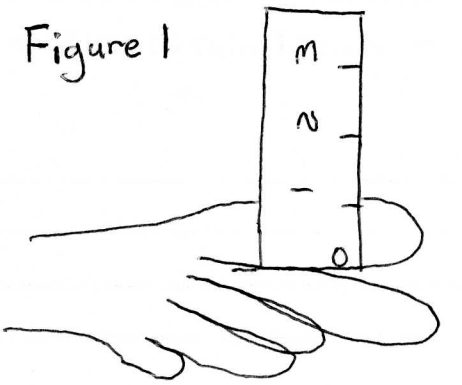
4. Which balance attempt was harder (eyes open/closed)? _____
5. Why do you think this attempt was harder? _____
   _____
6. Which part of the brain was involved? _____

Experiment C: Cut a piece of paper into the shape of a dollar bill. Have your partner hold the paper on its side high over your head and then let it fall. See if you can catch it with one hand as it flutters to the floor. Try this five times.

7. Was the paper easy or hard to catch? _____
8. What part of the brain was working? _____
9. What do you think was the flow of messages to and from the brain? _____
   _____
   _____

Experiment D: Have your partner hold a meter stick with the zero end level with the top of your hand. Get ready to catch the meter stick by positioning the top of your thumb and forefinger just at the zero position as shown in Figure 1. Your partner should drop the meter stick without any warning. Using your thumb and forefinger only, catch the meter stick as soon as you can. Record the distance in cm that the meter stick fell. This distance is a measure of your reaction time. Repeat the test 4 times.

Figure 1



Trial #	1	2	3	4	5
Distance (cm)					

10. Find the average distance the meter stick fell. _____ cm

11. What prevented you from catching the meter stick instantly after it was released? _____

12. Make a graph that compares the average reaction distance for your group.