

Special Senses Lab:

Name: _____

Station 1:

Colorblindness Test

1. Each circle contains colored dots with a hidden number that is shown as another color.
2. **Are you colorblind?** _____
3. **What does it mean to have a positive test for color blindness?** _____

4. **What are different types of colorblindness?** _____

5. **Explain how colorblindness can occur.** _____

Station 2:

Snellen Eye Chart

1. Stand 20 feet away from the chart behind the tape mark on the floor. This is the distance at which the light entering your eye is parallel to the floor. Read each line out loud to your partner and record the last correctly completed line.
2. Record your vision in each eye (Ex: 20/40). This can be found next to the line on the chart that you completed.
Right _____ **Left** _____
3. **Is your vision good, fair, or bad?** _____
4. **Describe the difference between near sighted and far sighted in terms of shape of the eye and where light is focused in relation to the retina?** _____

Station 3:

Two-Point Discrimination Test

1. This test measures the abundance of touch receptors on your fingertip, palm, and the back of the upper arm by using the calipers.
2. Have your partner close their eyes, and starting with the caliper ends very close together **gently** touch the ends of the caliper on the person's fingertip and remove. Your partner will report if they felt 1 or 2 points.
3. Repeat this procedure but widen the ends of the calipers by 1 mm each time until your partner says they can feel 2 points on their fingertip. **Record the distance between the points:** _____
4. Repeat the procedure for the palm and **measure the distance between the points:** _____
5. Repeat the procedure for the back of the upper arm and **measure the distance between the points:** _____
6. **Which area has more touch receptors?** _____ **Why do you think there are more receptors in that area?** _____

7. **What is the specific name for the receptors responsible for sensing touch?** _____
8. **What type of neuron AND part of the brain are being used during the activity?** _____

Station 4:

Balance and Equilibrium

1. Balance and Vision: Stable surface
 - a. Pick a preferred leg to stand on. Hold the other leg with one hand and keep the opposite hand at your side during the entire exercise.
 - b. Time yourself (up to 60 seconds) with eyes **open**. **Record how long you can balance without moving your leg or opposite arm:** _____
 - c. Repeat **with your eyes closed and record time** _____
 - d. Switch to your non preferred leg and repeat the above procedure with eyes open and eyes closed. **Open** _____ **Closed** _____

2. Balance and Vision: Unstable surface
 - a. Stand with both feet on the ENDS of the wobble board. Practice balancing a few times before you begin the test. When ready, balance until one of the sides of the board touches the floor.
 - b. **Record the time you were able to balance (up to 60 sec):** _____
 - c. Reposition your feet and repeat the balance test with your eyes closed. ***Safety is the top priority and a spotter must be watching closely and wobble board next to the lab table so the participant can grab hold if they lose their balance. Make sure to use good judgment and not do any movements that could cause harm or injury.*** Stop the timer when one side of the board touches the ground.
 - d. **Record the time you were able to balance (up to 60 sec):** _____
 - e. **Does vision have an impact on balance? _____ Why? _____**

Station 5:

Response Times

1. Ruler
 - a. The tester will be dropping the ruler and recording results while the pincher will be trying to catch the falling ruler.
 - b. The tester will hold the ruler at the top and the bottom 0 centimeter mark will be hovering between the pinchers open finger and thumb. Their fingers should be pointing towards the tester.
 - c. Drop the ruler and the pincher will close their fingers and try to catch the ruler. Do this three times and take the best results. Record in centimeters where the pinchers fingers were able to grab the ruler. If the ruler falls to the floor before they can pinch it, then record FAIL in the space below.
 - d. Round 1 is with the pinchers eyes open and no other signal except the tester dropping the ruler. Round 2 is with the pinchers eyes closed and the tester taps the pinchers shoulder while simultaneously dropping the ruler. Round 3 is with the pinchers eyes closed and the tester will say "Now" while they simultaneously drop the ruler.
 - e. **Results: Sight:** _____ **Touch:** _____ **Sound:** _____

 - f. **Explain why there is a difference in response times from having eyes open to eyes closed and response time comparing touch to sound.** _____

Station 6:

Blind Spot Test

1. Use the following website or textbook to see where your blind spot is located.
<http://faculty.washington.edu/chudler/retina.html> or use the old Anatomy textbook Special Senses chapter
2. **What causes the blind spot?** _____

Station 7:

Peripheral Vision Test

1. Using the cup as a handle, hold the poster board base up to your face and put your nose in the center hole. Have your partner hold the file card so that it is against the curved side of the base, as far from the focus object as possible.
2. Keep your eyes on the focus object while your partner moves the colored shape around the outside edge until you can see it. If at any time, your eyes move away from the focus object, choose a different card and begin again. Note the angle: _____
3. Have your partner keep moving the colored shape toward the focus object. Note the angle at which you first detect color: _____
4. Then note the angle at which you first discern the shape itself: _____
5. If time allows, have your partner expose a different shape and repeat the experiment.
6. **Research why you got the results you got and write a short response. Attach the sheet of paper to the lab handout.**

Station 8:

Taste Test

1. Take a sample cup from each of the sources of water. Record which source of water you think goes with each cup letter: Aquafina, Dasani, Deer Park, Fiji, Smart Water, Tap Water
2. Cups:

Sample	Description: clarity (how it looks), taste, and odor	Water Source
A		
B		
C		
D		
E		
F		

3. **Were you correct?** _____ **If you missed some water sources, what did you mix up?**

