The following tests can be done in any order. Jump to a station that doesn’t have a wait when as you finish each section.

**Two point Discrimination Test**

Touch discrimination is determined by measuring the distance two points must be separated in order to distinguish them as two points. You may use the Aesthesiometer or two points of a compass. The operator is to determine the minimum distance the points may be separated and still be distinguished as two points by the subject.

For each body part listed below, with the subject’s eyes closed, the operator places two points of the compass or Aesthesiometer on the body part and asks the subject whether she senses two points or one. If the subject senses two points, the distance between the two points is gradually decreased until the subject senses only one point. The least distance that two points can be determined is noted. The operator should be sure to touch both points simultaneously, and occasionally should touch only one point to make sure the subject is not imagining two-point touching.

Determine the least distance that two points can be distinguished for each of the following parts of the body listed in the table below. Measure distance in millimeters.

<table>
<thead>
<tr>
<th>Location</th>
<th>Finger</th>
<th>Forearm</th>
<th>Palm</th>
<th>Shoulder</th>
<th>Back of Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Left Brain vs. Right Brain**

On one of the computers, go to:
http://www.wherecreativitygoestoschool.com/vancouver/left_right/rb_test.htm

Take the quiz and write down your statistics before reading onto the next page at the end of the quiz.

Are you left brained or right brained? ___________ What is your percent? ___________

Read the summary. In what ways does it seem to fit you? In what ways does it not?

Feel free to take a few minutes to read the info.
**Taste**

When the chemicals that make up your food dissolve into your saliva. The chemicals surround hairs that are specific for a certain chemical. Even though you have thousands of different taste “hairs”, your brain only interprets the nerve signals into four different sensations (sweet, salty, sour, bitter).

PTC is a chemical that some of you can taste and others cannot. If you inherited a gene from either parent that tells your body to produce a hair that PTC can “fit” into, then you should taste a bitter taste from the PTC paper. If you did not inherit the gene or your parents never had it, then you should taste nothing at all.

1. Grab a strip of paper from the vial and taste it. Then throw it away and answer the questions.

   Did you taste anything unusual? If so, what? ________________________________

2. There is also a vial with Sodium Benzoate. Repeat step one with this paper. Results may vary.

   Did you taste anything unusual? IF so, what? ________________________________

3. There is also a vial with Thiourea. Repeat step one with this paper. Results may vary.

   Did you taste anything unusual? IF so, what? ________________________________

   If you could taste it, how strong was the taste? ________________________________

You might find the info below interesting…

There are many reports of genetic studies that have divided people into those who can taste thiourea compounds - and hence are not enamored of several cruciferous plant foods containing them - and those who cannot. The test substance used is usually 6-N-propylthiourea.

However, a study at Yale University found that people could be classified into three groups, "supertasters" who could not abide the taste test paper at all, medium tasters who did not like it but tolerated it, and nontasters who could not taste anything. Supertasters will not consume any bitter foods, like dark-green leafy vegetables, coffee or chocolate, and represent perhaps 10 to 15% of the population. Such people can easily miss out on bitter tasting plant foods important for health. (A recent finding of a substance that can inhibit bitter tastes may be of interest in this regard.) Although this report does not mention it, the effect goes deeper than just avoiding certain foods. Nontasters have higher rates of thyroid disease - and of course thiourea compounds are antithyroid agents. More work studying the genetics and the metabolic consequences of these differences is warranted.

*Source: Bartoshuk L, et al. Paper at the American Association for the Advancement of Science, Denver, US*

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**Sight – How Good Are Your Eyes?**

In the back wall of the storage room you will find an eye chart. *Do not look at it up close!!!* Remove your glasses and stand 20ft from the eye chart. You should find a piece of tape that signifies the 20ft mark. Stand behind the tape and read the eye chart row by row. Have your partner write down on your lab the letters you read.
After you both read (and have recorded) as far as you can, go up and see how you did. Each row has a # next to it. That is the distance that you are able to see those letters with perfect eyes. For example, if you can read row one from 20 feet and it says 400 next to the letters, then you at least have 20/400 vision.

At what line did you start to make mistakes, if any? _______________________________

How good is your vision numerically speaking? _______________________________

Peripheral Vision – The Vision Disk.
Fold the handles of the vision disk and place the disk against forehead (like a giant visor). Make sure the focus triangle is folded down as well. Grip the handles with both hands and focus on the hole in the middle of the focus triangle. DO NOT LOOK ANYWHERE ELSE. Have your partner stand behind you and place a card in the clear arm on the far left or right of the vision disk. Slowly move the clear arm until the subject detects motion. Stop at this point and right down your number down below. Then, continue moving the card forward until the subject is able to read aloud the letters on the card. Stop at this point and write down the number below. Repeat for left side.

Right side field of view = ___________ Right side reading field of view = ___________
Left side field of view = ___________ Left side reading field of view = ___________

When you look right at an object, light from that object is focusing on your fovea centralis. Light from the sides focuses on other parts in your retina. Were you surprised how close you had to get to your fovea centralis before you had a large enough concentration of rods & cones to read the letters? I was.

Sight – After Images
Once a nerve pathway for sight is strongly stimulated, chemicals involved in stimulus transmission are used up. Rods and cones continue sending an image to the brain, but because the normal visual chemicals are depleted, the response registered in the brain may actually be the opposite of what it really should be. A bright image, such as a camera flash, will appear dark. A primary color will appear as its opposite color. The following activity will help you observe and understand this phenomenon.

a. Take a small piece of red paper and place it in the center of a larger sheet of white paper.
b. Stare at the red paper for 30 seconds without shifting your gaze.
c. Quickly remove the red piece of paper and note the color of the afterimage on the white paper. Record what you see below.
d. Repeat this procedure with blue, green, and yellow papers.

Questions
1. What are the afterimage colors for each color of paper?

Red:  Blue:  Green:  Yellow:

2. Can the afterimage relationship be reversed? For instance, red has a bright green afterimage. Does green have a red afterimage?

**Kinesthetic Sense**

Kinesthetic sense is an awareness of the positions of the various parts of the body. It informs us as to the degree that tendons are stretched and muscles are contracted by means of receptors located in the joints and muscles. The kinesthetic sense allows us to recognize the location and rate of movement of one part of the body in relation to other parts. It permits us to determine the weights of objects and to determine the degree of muscle contraction required to do a task. Therefore, we can walk, dress in the dark, play the violin or piano, and shoot free throws, all quite easily without excessive conscious thought.

Face the white board, close enough so you can easily reach it. Take a marker and, with your eyes closed, mark a dot on the white board with your right hand. Keeping your eyes closed, raise your right hand above your head and then attempt to mark a dot as close as possible to your first dot – no peeking! Measure the distance between your dots and record them in the data table below. Then repeat the experiment two more times for this hand and three times with your other hand. Then calculate your average. If you want to write your name and averages on the board to see how you compare to others, go for it!

<table>
<thead>
<tr>
<th></th>
<th>1st Trial (cm)</th>
<th>2nd Trial (cm)</th>
<th>3rd Trial (cm)</th>
<th>Average (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Hand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left Hand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>