

## Part I – Activity 1: Visual Explorations

## Question: How do the eyes work?

### Procedures:

1. Perform as many Visual Perception Tests as you can & record your observations and results in the table below. Try to identify which eye structure/component is involved in each test!
2. Spend only 1-2 minutes per test! You may not get to all the tests – and that’s OK!

Test		Materials Needed	Results/Observations/Questions	ID relevant eye structure/vision component
1	<b>Depth Perception</b>	Two sharpened pencils	<i>Left eye closed:</i> <i>Right eye closed:</i> <i>Two eyes open:</i>	
2	<b>Seeing in 3D</b>	Paper tube	<i>What did you see for the 3D paper tube test?</i>	
3	<b>Blind Spot</b>	Blind spot card ruler pencil	<i>Did you “find” your blind spot for at least one eye?</i>  <i>What did you notice about the line (in step 6)?</i>	
4	<b>After images</b>	Black/white circle image White surface (paper/wall) Stopwatch	<i>After you looked at the white paper/wall and blinked a few times – what did you notice?</i>	
5	<b>Dominant Eye</b>	Your thumb!	<i>Circle one: Is one of your eyes dominant?</i> yes – right                      yes – left                      No	

**Visual Field Test**

1. Assign initial roles (per group of four):
  - A. Cue receiver (person being tested)
  - B. Cue sender (person walking around the semi-circle)
  - C. Cue recorder (also reads instructions out loud)
  - D. The “Sheriff” and Data Transferor
2. Follow the instructions for the “Visual Field Test”.
3. Transfer data from poster to the image, below:

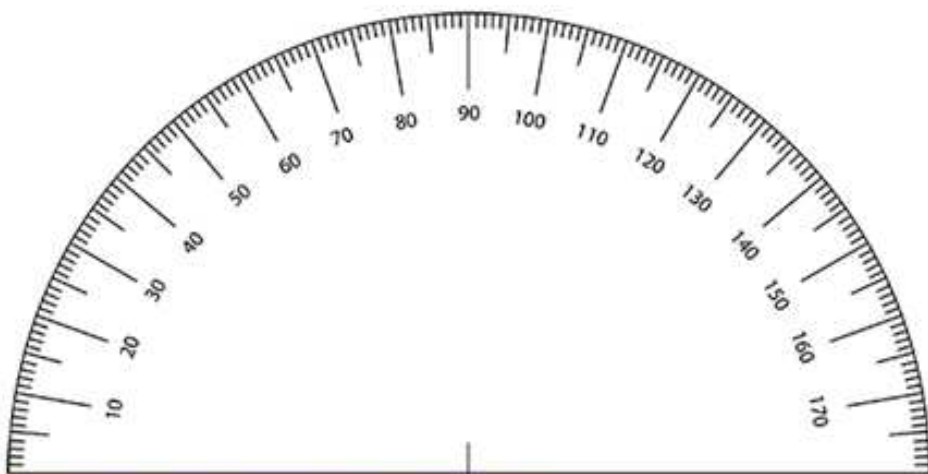


Figure 1 Protractor Image (obtained from [www.timvandevall.com](http://www.timvandevall.com))

KEY:

4. Analyze data.

**Visual Field Test – Instructions**

1. Student A: stand on Poster (at the “x”), look straight ahead.  
 Student B: hold up a random shape, walk slowly around the outside of the semi-circle. Start **BEHIND** the line of peripheral vision!  
 Student C: will record results on the poster.  
 Student D: make sure Student A is only looking ahead.
2. Student A: announce when you first see movement, close your eyes.  
 Student B: should stop moving briefly, do not move cue card.  
 Student C: record result (mark a line on the poster with the appropriate letter (see below) directly below the cue card held by student B).  
 Student D: make sure student A keeps his/her eyes closed, transfer data.

**Letters that will represent each cue:**

**M for "motion"      C for "color"**  
**L for "letter"        S for "shape"**

3. Student B: resume moving around the semi-circle.  
 Student A: open eyes, keep looking straight ahead until you first see the Shape, Color, and/or Letter (say what you see and close your eyes).  
 Student D: make sure student A keeps his/her head facing forward & is looking straight ahead.  
 Student C: Records result onto the poster.
4. Continue until Student A has **FOUR** markings on the poster (M, L, C, and S – see above). Testing is over when Student B is directly in front of Student A.
5. Shift roles (A become B and so on). Repeat steps 1-4 until each student gets tested. Every time a new student is tested, use a different shape and different colored marker to record result (make a key so you know which color goes with each student).
6. Compare your group’s result. Consider each person in the group!