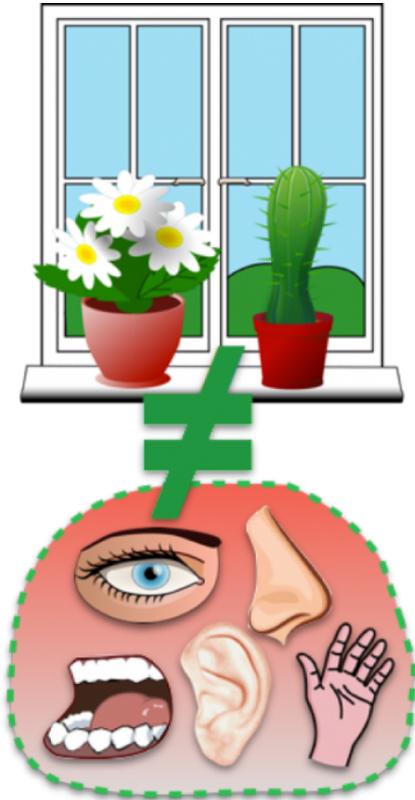


# Solutions

## Sensation and Perception

### 1) The External World versus our Perceptions



Which statements below provide evidence for the assertion that what we perceive is **NOT** an exact representation of the external world? You should find 3 correct answers.

- a.  Two people who are exposed to similar physical energies will receive similar "raw data" from the external world.
- b.  Different people may perceive a stimulus in varying ways.
- c.  There are certain common errors of perception, which we call illusions.
- d.  For the most part, our perceptual systems allow us to navigate safely through a bewildering array of external stimuli.
- e.  We are not equipped to detect or respond to all the physical energies that exist.

2) Word list: sensory receptors, transduction, varies from perceiver to perceiver, reception, influenced by psychological factors, physiological, not purely physiological, interpretation, sensory organs, organisation, transmission, attributing meaning, similar for all able perceivers

## The Distinction between Sensation and Perception

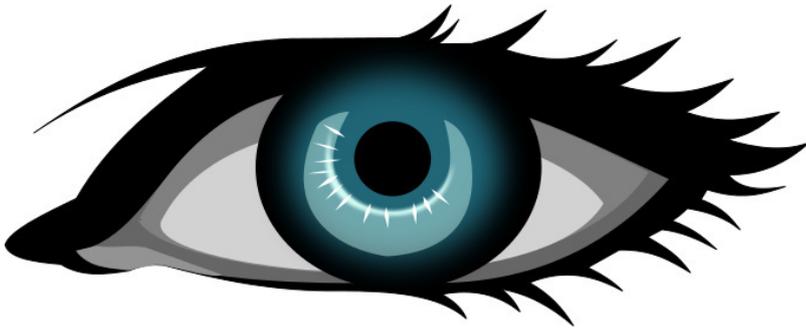
Which concepts relate to the definition of **sensation**? Which relate to the concept of **perception**? Drag each word or phrase into the appropriate column. The diagram below the table will help you to categorise the terms.

Sensation	Perception
<u>reception</u>	<u>not purely physiological</u>
<u>transduction</u>	<u>organisation</u>
<u>sensory receptors</u>	<u>interpretation</u>
<u>sensory organs</u>	<u>attributing meaning</u>
<u>similar for all able perceivers</u>	<u>varies from perceiver to perceiver</u>
<u>transmission</u>	<u>influenced by psychological factors</u>
<u>physiological</u>	



### 3) Defining Visual Sensation

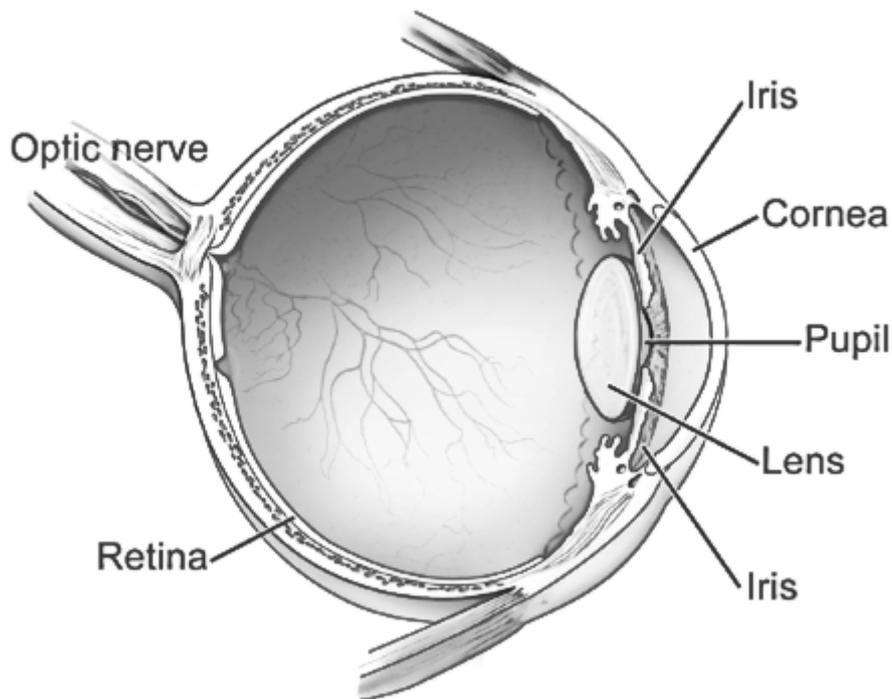
Which terms below are required in order to describe the process of **visual sensation**? Tick 5 options.



- a.  Includes the interpretation of visual stimuli
- b.  Requires functioning sensory receptors in the retina
- c.  Transduction of sound energy into electrochemical energy
- d.  Occurs in a different way for each perceiver
- e.  Transduction of light energy into electrochemical energy
- f.  Physiological process
- g.  Reception of light at the site of the sensory receptors
- h.  Transmission of light to the brain
- i.  Transmission of electrochemical energy to the brain

4)

### Visual Sensation - The Eye



Which part/s of the eye carry out the following functions? Type the names of the appropriate structures in the spaces below. Use the terms shown in the diagram. Some structures are mentioned more than once.

**a** retina : The sensory receptors (rods and cones) are situated here.

**b** optic nerve : The electrochemical energy is transmitted to the brain via this structure.

**c** lens and cornea : The two structures responsible for bending the light and focusing it onto the retina

**d** iris : Muscle behind cornea that controls the amount of light entering the eye via the pupil

**e** pupil : Opening in iris that varies in size to regulate the amount of light entering the eye

**f** lens : The transparent elastic structure behind the iris which bulges and flattens out in order to focus light onto the retina; responsible for accommodation

**g** cornea : The transparent layer that covers and protects the front of the eye; also plays an important part in bending light and focusing it onto the retina

5)

## Visual Perception - Organisation of Sensory Information According to the Gestalt Principles

Which Gestalt principle or key term is referred to in each example below?  
Choose from these options. Some may be referred to more than once.

**figure-ground** • **figure** • **ground** • **closure** • **similarity** •  
**proximity**



Most people identify the image of a dalmatian dog in this stimulus, although its coat is camouflaged against a very similar environment. This illustrates the Gestalt principle of figure-ground.

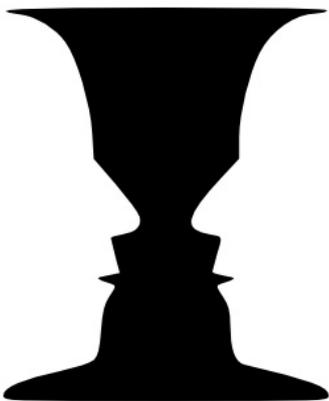


Most viewers perceptually "fill in" the missing contour of the cup. Our tendency to supply the missing information and perceptually create a "whole" that does not exist in the sensory data illustrates the Gestalt principle of closure.



The fact that we can read this quotation, despite the incomplete letters, illustrates the Gestalt principle of closure.

(Stimulus designed by Rebecca, Emily and James, 2016)



The "Rubin's Vase" stimulus can also be perceived as two faces in profile. This ambiguous stimulus allows us to organise our perception in two distinct ways, by reversing figure and ground.



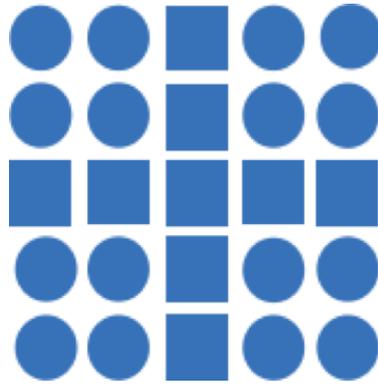
Seurat: Un soir, étude  
We tend to perceive elements of a visual stimulus that are alike in some way (colour, size, shape or texture) as belonging together. This is referred to by the Gestaltists as the principle of similarity and it allows us to perceive the art works of Seurat, for instance, as a meaningful whole.



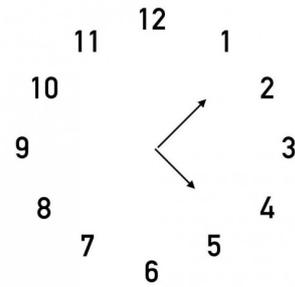
Viewers group the teacups that are alike together and therefore tend to perceive the square of red cups as a group surrounded by a border of beige cups. This illustrates the Gestalt principle of similarity.



Viewers group stimuli that are closer together. For instance, we perceive the image above as five columns of dots rather than five rows of dots. This illustrates the Gestalt principle of proximity.



Stimuli that are alike in shape also tend to be grouped together. This allows us to perceive a cross in the stimulus above. This is another illustration of the Gestalt principle of similarity.



Despite the lack of an external contour, we perceptually complete this figure and perceive it as a clock, which illustrates the Gestalt principle of closure. The fact that the numbers are alike in font, size and colour also causes us to group them as belonging to a whole, which provides an example of the Gestalt principle of similarity. (Stimulus by Ngoc, 2016)