

AP Psychology – Unit 4 Assignment

Sensation and Perception

Big Question: How do we construct our representation of the external world?

Sensation and Perception Objectives:

- Contrast the processes of sensation and perception.
- Distinguish between absolute and difference thresholds and discuss research findings on subliminal stimulation.
- Describe the phenomenon of sensory adaptation and show how it focuses our attention on changing stimulation.
- Explain the visual process, including the stimulus input, the structure of the eye, and the transduction of light energy
- Discuss the value of parallel processing, especially regarding vision.
- Explain the trichromatic and opponent process theories of color vision.
- Explain the auditory process, including the stimulus input and the structure and function of the ear.
- Discuss the nature and causes of hearing loss and describe the effects of noise on hearing and behavior.
- Describe the sense of touch and explain the basis of pain.
- Describe the senses of taste, smell, kinesthesia, and equilibrium.
- Discuss the effects of sensory restriction.
- Describe the debate over the role of nature and nurture in perception and explain how illusions help us to understand perception.
- Discuss Gestalt psychology's contribution to our understanding of perception
- Discuss research on depth perception involving the use of the visual cliff.
- Describe the binocular and monocular cues in depth perception.
- Discuss the concept of the adaptability of perception.
- State the claims of ESP and explain why most research psychologists remain skeptical.
- Discuss the effect of assumptions, expectations, schemas, and contexts on our perception.

Sensation and Perception Overview

Sensation refers to the process by which we detect physical energy from the environment and encode it as neural signals. This chapter describes the senses of vision, hearing, taste, touch, smell, kinesthesia, and the vestibular sense. It also presents research findings from studies of sensory restriction and subliminal stimulation.

In this chapter there are many terms and several theories you must understand. Many of the terms are related to the structure of the eye, ear, and other sensory receptors. Labeling diagrams and rehearsing the material frequently will help you memorize these structures and their functions. The theories discussed include signal detection, Young-Helmholtz three-color and opponent-process theories of color vision, and the frequency and place theories of pitch. As you study these theories, concentrate on understanding the strengths and weaknesses (if any) of each.

The Perception unit explores how we select, organize, and interpret our sensations into meaningful perceptions. The chapter introduces a wide range of terminology, especially in the Perceptual Organization section. Each of the two sections that follow deals with an important issue. The first issue is the role of experience, as opposed to heredity, in perception. Make sure you understand the results of studies of recovery from blindness, early sensory restriction, adoption to distorted environments, and perceptual set. The second is the possible existence of ESP, or perception without sensation. You should be able to discuss both the claims made for ESP and the criticisms of these claims.

Unit 4 Reading Assignment(s)

You are responsible for the reading listed below; it is meant to supplement the material discussed in class and there may be a pop quiz at any point.

- **OpenStax Psychology Textbook:** Chapter 5 (Posted on Class Website)

Unit 4 Vocabulary Terms & Flip Book

Psychology is a term heavy course; you are responsible for the terms below. You will have a vocabulary quiz every other unit. For the quiz I will pull terms from the Unit vocabulary lists.

Flip Book: Each term should be on its own card. Each card will have the term on the front and definition in your own words written on the back. Each card will be taped into a manila folder and turned in the day of the unit test.

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| 1. Sensation | 28. Young-Helmholtz/Trichromatic Theory |
| 2. Perception | 29. Opponent-Process Theory |
| 3. Bottom-Up Processing | 30. Audition |
| 4. Top-Down Processing | 31. Frequency |
| 5. Selective Attention | 32. Pitch |
| 6. Change Blindness | 33. Middle Ear |
| 7. Psychophysics | 34. Cochlea |
| 8. Absolute Threshold | 35. Inner Ear |
| 9. Signal Detection Theory | 36. Place Theory |
| 10. Subliminal | 37. Frequency Theory |
| 11. Priming | 38. Conduction Hearing Loss |
| 12. Difference Threshold | 39. Sensorineural/Nerve Hearing Loss |
| 13. Weber's Law | 40. Kinesthesia |
| 14. Sensory Adaptation | 41. Vestibular Sense |
| 15. Transduction | 42. Gate-Control Theory |
| 16. Wavelength | 43. Sensory Interaction |
| 17. Intensity | 44. Depth Perception |
| 18. Pupil | 45. Binocular Cues |
| 19. Iris | 46. Retinal Disparity |
| 20. Lens | 47. Monocular Cues |
| 21. Retina | 48. Perceptual Constancy |
| 22. Rods | 49. Color Constancy |
| 23. Cones | 50. Perceptual Adaptation |
| 24. Optic Nerve | 51. Perceptual Set |
| 25. Blind Spot | 52. Extrasensory Perception (ESP) |
| 26. Fovea | 53. Parapsychology |
| 27. Parallel Processing | |

Part II - AP Questions

Directions: Thoroughly answer the following questions. All answers must be handwritten in complete sentences and in your own words.

1. How are sensation and perception different? How do they work together? Give/create an example that answers both of these questions.
2. What is absolute threshold and how is it measured for each of our senses?
3. Because of a freak gasoline fight accident, Derek lost an eye and can now only see out of his right eye. What two binocular vision cues will he no longer be able to use? Describe each one.
4. Draw a diagram of the eye. Label and explain the function of the iris, lens, pupil, cornea, retina, fovea, blind spot, and optic nerve.
5. What is transduction and how does this process occur in the photoreceptors of the eye and cochlea of the ear?
6. Draw a diagram of the ear. Label and explain the function of the ear drum, hammer, anvil, stirrup, cochlea, semicircular canals, and auditory nerve.

Part III - Student Choice

Choice A: Personal Connection/Impact

Type a brief description concerning an experience, memory, story, event, etc that connects to key concepts associated with the unit. Relevant vocabulary must be properly utilized throughout and responses must connect in a coherent and logical manner.

The purpose of this assignment is to build personal connections with course content to your own lives. By doing so, content becomes more meaningful and retention becomes easier.

Responses must at least one full page, typed, double-spaced, with 12 pt. Times New Roman font. Reasonable margins and paragraph spacing must be used.

-OR-

Choice B: Concept Map

Create a Unit Concept Map that can be used to review/relearn the terms and concepts from this Unit.

NOTE: Use the directions posted on the website to complete your concept map.

Requirements:

- Must be hand drawn on one 8.5" x 11" sheet of paper
- Essential vocabulary for each concept must be appropriately located/placed