

Chapter 5:

Learning Objectives:

1. Contrast sensation and perception, and explain the difference between bottom-up and top-down processing.

Sensing the World: Some Basic Principles:

2. Distinguish between absolute and difference thresholds, and discuss whether we can sense stimuli below our absolute thresholds and be influenced by them.
3. Describe sensory adaptation, and explain how we benefit from being unaware of unchanging stimuli.

Vision:

4. Define *transduction*, and specify the form of energy our visual system converts into the neural messages our brain can interpret.
5. Describe the major structures of the eye, and explain how they guide an incoming ray of light towards the eye's receptor cells.
6. Contrast the two types of receptor cells in the retina, and describe the retina's reaction to light.
7. Discuss the different levels of processing that occur as information travels from the retina to the brains' cortex.
8. Define *parallel processing*, and discuss its role in visual information processing.
9. Explain how the Young-Helmholtz and opponent-process theories help us understand color vision.
10. Explain the importance of color constancy.

Hearing:

11. Describe the characteristics of the pressure waves we experience as sound.
12. Describe the three regions of the ear, and outline the series of events that triggers the electrical impulses sent to the brain.
13. Contrast the frequency theories, and explain how they help us to understand pitch perception.
14. Describe how we pinpoint sounds.
15. Contrast the two types of hearing loss, and describe some of their causes.
16. Describe how cochlear implants function, and explain why Deaf-culture advocates object to these devices.

Other Important Senses:

17. Describe the sense of touch.

18. State the purpose of pain, and describe the biopsychosocial approach to pain.
19. Describe the sense of taste, and explain the principle of sensory interaction.
20. Describe the sense of smell, and explain why specific odors so easily trigger memories.
21. Distinguish between kinesthesia and the vestibular sense.