

8

Special Senses

Key ☺

The body's sensory receptors react to stimuli or changes occurring both within the body and in the external environment. When triggered, these receptors send nerve impulses along afferent pathways to the brain for interpretation, thus, allowing the body to assess and adjust to changing conditions so that homeostasis may be maintained.

The minute receptors of general sensation that react to touch—pressure, pain, temperature changes, and muscle tension—are widely distributed in the body. These are considered in Chapter 7. In contrast, receptors of the special senses—sight, hearing, equilibrium, smell, and taste—tend to be localized and in many cases are quite complex. The structure and function of the special sense organs are the subjects of the student activities in this chapter.

THE EYE AND VISION

- ★ 1. Complete the following statements by inserting your responses in the answer blanks.

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|-------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>extrinsic</u> _____ | 1. | Attached to the eyes are the <u>(1)</u> muscles that allow us to direct our eyes toward a moving object. The anterior aspect of each eye is protected by the <u>(2)</u> , which have eyelashes projecting from their edges. Closely associated with the lashes are oil-secreting glands called <u>(3)</u> that help to lubricate the eyes. Inflammation of the mucosa lining the eyelids and covering the anterior part of the eyeball is called <u>(4)</u> . |
| <u>eyelids</u> _____ | 2. | |
| <u>meibomian glands</u> _____ | 3. | |
| <u>conjunctivitis</u> _____ | 4. | |

- ★ 2. Trace the pathway that the secretion of the lacrimal glands takes from the surface of the eye by assigning a number to each structure. (Note that #1 will be *closest* to the lacrimal gland.)

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|----------------|-----------------|----------------|----------------------|
| <u>2</u> _____ | 1. Lacrimal sac | <u>3</u> _____ | 3. Nasolacrimal duct |
| <u>4</u> _____ | 2. Nasal cavity | <u>1</u> _____ | 4. Lacrimal canals |