

Name _____ Date _____

Chapter 7 Lab Investigation: Sensory Organs

Purpose

In these activities you will learn about certain functions of the visual and gustatory (taste) senses.

Background

The retina, the innermost layer of the eye around the posterior part of the eyeball, is rich in light-sensitive nerve endings. These nerve endings transmit impulses through the optic nerve to the occipital lobe of the brain, where visual images are interpreted. The retina contains sensory cells called *rods* and *cones*. The rods are activated in dim light; the cones, which provide color vision, are activated in bright light.

On your retina is an area called the *blind spot*. The blind spot, also known as the *optic disc*, is the region from which your optic nerve exits your eye on its way to your brain. Because the optic disc does not contain any rods and cones, it does not respond to light rays. Therefore, an image that falls on the optic disc, or blind spot, will not be perceived by the eye.

Materials

your textbook, your body

Procedure

1. To find your blind spot, look at the image below or draw it on a sheet of paper.



2. Close your right eye. Hold the image about 20 inches away. With your left eye, look at the + sign. Slowly bring the image closer while continuing to look at the + sign. What happens?

3. Reverse the process. Close your left eye and hold the image about 20 inches away. With your right eye, look at the dot. Slowly move the imager closer as you continue to look at the dot. What happens now?

Anatomy of a Taste Bud

Using the following terms, correctly label each part of the diagram of the taste bud shown below.

afferent nerve

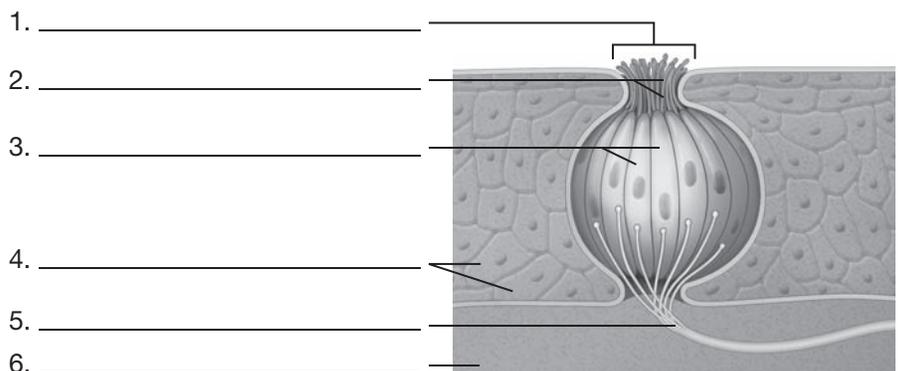
taste pore

tongue

papillae on surface of tongue

gustatory cells

gustatory hairs



Conclusions

The Eye

1. Which part of the eye allows light to enter the eye? _____
2. How does this part regulate the amount of light entering the eye? _____
3. Which part of the eye focuses the light entering through the eye? _____
4. How does this part change during accommodation (contraction)? _____
5. Which part of the eye has receptors for light? _____
6. In which part of the brain are visual images interpreted?
7. On which part of the eye is the blind spot located?

List the names of the extrinsic eye muscles. Next to each muscle name, list the action that it controls.

| Extrinsic Eye Muscles | |
|-----------------------|--------|
| Muscle | Action |
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |

The Sense of Taste

List the five basic tastes.

1. _____
2. _____
3. _____
4. _____
5. _____
6. In what two ways can the taste of umami be described?
 - A. _____
 - B. _____
7. Detecting flavor requires input from what two senses?
 - A. _____
 - B. _____