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VIDEO GUIDE · UNIT 1 · TOPIC 1.6

Vision I

Watch the lesson

Name _____ Class _____ Date _____

NOTES: FILL IN THE BLANKS WHILE YOU WATCH

Focusing light

1. Light bends as it enters the eye through the _____, and the _____ fine-tunes the focus.
2. Unlike the cornea, the lens is adjustable: eye muscles change its shape to focus on near or far objects. This is called _____.
3. In _____, light from distant objects is focused in front of the retina, so distant objects look blurry.
4. In _____, light from nearby objects is focused behind the retina, so nearby objects look blurry.

The retina

5. The _____ at the back of the eye is lined with _____, cells that transduce light into neural signals.
6. _____ work best in low light and detect shapes and movement, mainly in peripheral vision, but not color.
7. _____ provide color and fine detail in brighter light.
8. Cones are concentrated in the _____, near the center of the retina. Memory trick: the C in cones stands for Color, Clarity, and Center.
9. Where the _____ exits the eye there are no photoreceptors, creating a _____; the brain fills it in using surrounding information.

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CHECK YOUR UNDERSTANDING

1. To see a faint star at night, astronomers often look slightly to the side of it rather than directly at it. Why does this work?

(A) The fovea contains mostly rods, which detect faint light

(B) Looking to the side lets the light fall on rods outside the fovea, which work best in dim light

(C) Cones in the periphery are more sensitive to color

(D) Looking to the side triggers accommodation in the cornea

2. With one eye closed, a participant stares at a fixed point while a small dot is moved across her visual field. At one location the dot briefly disappears. What best explains this?

(A) The fovea contains only cones

(B) Rods do not respond to color

(C) No photoreceptors exist where the optic nerve leaves the eye

(D) The lens cannot focus light on the edge of the retina

3. A man can read road signs far away but must hold a menu at arm's length to read it. Which condition does he have, and where is light from the menu focused?

(A) Farsightedness; behind the retina

(B) Nearsightedness; in front of the retina

(C) Farsightedness; in front of the retina

(D) Nearsightedness; behind the retina

NOTES

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