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VIDEO GUIDE · UNIT 1 · TOPIC 1.6

Vision II

Watch the lesson

Name _____ Class _____ Date _____

NOTES: FILL IN THE BLANKS WHILE YOU WATCH

Color vision

1. _____ : three types of cones detect red, green, or blue light; their combinations produce all colors (red + green = yellow).
2. _____ adds a second stage after the cones: _____ process color in opposing pairs: red-green, blue-yellow, black-white.
3. Opponent cells fire above baseline for one color and below for its opponent; an _____ appears when cells fatigued by one color drop below baseline.
4. _____ : difficulty distinguishing either reds and greens or blues and yellows. _____ : little or no ability to distinguish colors.

Vision in the brain

5. Signals leave the eye through the optic nerve, travel to the _____ , then to the _____ .
6. In _____ (face blindness), a person sees a face and its features but can't recognize whose face it is.
7. In _____ , a person says they can't see an object, but their behavior shows they're processing it.

CHECK YOUR UNDERSTANDING

1. A tumor presses on a patient's optic nerve. Which best describes the problem?

(A) Light can't be focused onto the retina

(B) Cones can't detect red, green, or blue light

(C) Signals processed in the retina can't travel on to the thalamus and occipital lobes

(D) The occipital lobes can't recognize faces

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2. Why can we see a reddish-yellow (orange) but never a "reddish-green"?

(A) Red and green cones can't fire at the same time

(B) Red and green are signaled by the same opponent cell firing in opposite directions

(C) Ganglion cells don't respond to green

(D) Orange activates a fourth type of cone

3. A man sees shapes, edges, and brightness clearly, but the world looks like a black-and-white photo. Which condition does he most likely have?

(A) Monochromatism

(B) Dichromatism

(C) Prosopagnosia

(D) Blindsight

NOTES

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