# Fool Your Vision to Find Out How It Works

Student quiz — Answer key

**Directions:** Circle the best answer for each question below.

1. Which of the following is *not* true?
   a. Blindness can happen in people with perfectly functioning eyes that have, for example, damaged optic nerves or damage in the brain.
   b. The eye is the only organ involved in vision; the brain is only used for thinking about what you see.
   c. During reconstruction of an image, the three primary colors the eyes sense (red, green, and blue) are recombined, enabling us to see a whole range of colors.
   d. Light-sensitive receptor cells in the back of the eye convert visible light into electrical signals.

2. Which of the following is true?
   a. Afterimages are created because cone cells tire out.
   b. Afterimages are created because your brain combines information received from both eyes.
   c. Afterimages are created because specific color-sensitive area(s) in the brain is(are) fatigued.
   d. Afterimages cannot occur for black and white images.

3. The perception of having a hole in your hand is created because...
   a. light-sensitive cells in the eye tire out.
   b. whenever the brain combines information received from both eyes, illusions appear.
   c. your brain assumes both eyes are looking at the same object.
   d. information received from both eyes gets mixed up when transported to the brain.

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**Directions:** Circle the best answer for the question below and write your answer for the final question.

4. You repeatedly observe an illusion when looking with both eyes at the same time, but notice the illusion disappears when looking with one eye only. Which of the following is a plausible explanation?

    a. The illusion is formed in the brain and is due to the brain making assumptions when combining the information received from both eyes into one image.

    b. The illusion is formed in the eye and is due to receptor cells registering information incorrectly.

    c. The illusion is formed due to light being reflected differently than usual and thus, not reaching the eye.

    d. As you see what is really there with each eye separately, this is not an illusion.

5. Explain the main body parts involved in seeing and how they work together so we can see.

    Answers should include the three main body parts involved in seeing: the eye, the (optic) nerves, and the brain.

    Answers may include, but are not limited to, the following:

    - Light (the stimulus) falls into the eye and triggers sensory receptors or light-sensitive cells.
    - Receptor cells convert the stimulus (light) into an electrical signal.
    - The electrical signals get passed along the (optical) nerves to the brain, where an image gets reconstructed.