Worksheet: Understanding the Colors You See When You Rub Your Eyes
Grade Level: 11th Grade
Source: TedEd - "What are those colors you see when you rub your eyes?"

Section 1: Multiple Choice Questions

1. What is the scientific term for the phenomenon of seeing colors when you rub your eyes?
   a) Photopsia
   b) Phosphenes
   c) Synesthesia
   d) Chromesthesia
2. What part of the eye is primarily responsible for detecting light and sending signals to the brain?
   a) Cornea
   b) Retina
   c) Lens
   d) Iris
3. Which of the following is NOT a cause of phosphenes?
   a) Rubbing your eyes
   b) Staring at a bright light
   c) Listening to loud music
   d) Applying pressure to the eyeball

Section 2: True/False Questions

1. Phosphenes are caused by external light entering the eye. (True/False)
2. The colors seen when rubbing your eyes are a result of the brain interpreting random signals. (True/False)
3. Phosphenes can only be experienced when the eyes are closed. (True/False)

Section 3: Fill-in-the-Blanks

1. The phenomenon of seeing colors without external light is called _____.
2. The _____ cells in the retina are responsible for detecting light and sending signals to the brain.
3. Phosphenes can be triggered by _____, _____, or _____. (List three causes.)

Section 4: Matching

Match the terms on the left with their correct descriptions on the right.

1. Phosphenes
2. Retina
3. Photoreceptors

a) The layer of the eye that contains light-sensitive cells.
b) The sensation of seeing light without external light.
c) Cells in the retina that detect light and send signals to the brain.

Section 5: Open-Ended Questions

1. Explain how rubbing your eyes creates the sensation of seeing colors.
2. Why do you think the brain interprets random signals as colors or patterns?
3. Describe a situation where someone might experience phosphenes other than rubbing their eyes.

Section 6: Listing

List three ways phosphenes can be triggered:

1. _____
2. _____
3. _____

Section 7: Concept Checking Questions (CCQs)

1. Are phosphenes caused by external light? (Yes/No)
2. Do photoreceptors play a role in creating phosphenes? (Yes/No)
3. Can phosphenes occur even when the eyes are open? (Yes/No)
