

The Science of Seeing

Grades 5–8 • Science

ADMIT ONE

NAME _____

DATE _____

CLASS _____

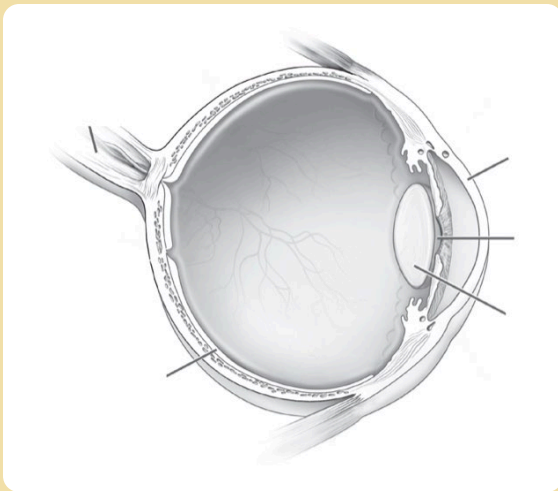
The visual system. Vision isn't just about your eyes — it's a complex system involving light, specialized cells, nerve signals, and brain interpretation. Optical illusions reveal the limitations built into this system.

PART 1

OI

Eye Anatomy & Function

Label the eye diagram AND explain what each part does:



1. Cornea: _____

2. Pupil: _____

3. Lens: _____

4. Retina: _____

5. Optic Nerve: _____

Bonus: What's the difference between rods and cones?

02 PART 2 Analyze the Illusions

For each illusion, identify: (1) What you see, (2) Why it happens, (3) Where in the visual system

Illusion A: Color Afterimage (Stare at colored image, then look at white paper)

What you see: _____

Why it happens: _____

Location (circle): Eye (retina) Brain (visual cortex)

Illusion B: Müller-Lyer (Lines with arrows look different lengths)

What you see: _____

Why it happens: _____

Location (circle): Eye (retina) Brain (visual cortex)

03 PART 3 The Blind Spot Experiment

Use the Blind Spot Test Card your teacher gave you. Close left eye, focus on +, move card closer until dot disappears.

Explain scientifically why this happens:

04 PART 4 Compare Eye-Based vs. Brain-Based Illusions

TYPE

WHERE IT HAPPENS

EXAMPLE

Eye-based

Brain-based

MINI MUSEUM CONNECTION

The stereoscope exploits **binocular vision** — the fact that your two eyes see slightly different images. Your visual cortex combines these into depth perception.

Explain how this works in your own words:

Try the Perception Lab:

minimuseumproject.org/exhibitions/seeing-is-deceiving/illusions

SHARE WITH YOUR FAMILY

Experiment: Find the blind spot in both eyes. Is it in the same place? (Hint: it's not!)

Discussion: Ask your family: "If your brain fills in your blind spot, what else might it be 'filling in' that isn't really there?"