

# Technologies and Disorders — Visual Disorders, Glasses, Contact Lenses and Eye Surgery

Use this worksheet after reading the lesson to practise the key ideas and prove you can meet the success criteria.

Name \_\_\_\_\_  
Date \_\_\_\_\_  
Class \_\_\_\_\_

## 1. Key Ideas

How does the eye focus light, and what goes wrong in myopia, hyperopia and astigmatism? This lesson traces the visual pathway, explains each refractive error at the anatomical level, and evaluates three corrective technologies: glasses, contact lenses, and LASIK surgery.

- The pathway of light through the eye: cornea → aqueous humour → pupil → lens → vitreous humour → retina → optic nerve → visual cortex
- Why accommodation (lens shape change) allows focus on near objects — and why this fails with age (presbyopia)

## 2. Success Criteria

By the end, you should be able to:

- The pathway of light through the eye: cornea → aqueous humour → pupil → lens → vitreous humour → retina → optic nerve → visual cortex
- The anatomical cause of myopia, hyperopia, and astigmatism
- The type of corrective lens required for each refractive error and why

## 3. Key Terms

### What do you think

different between these people's eyes that causes this pattern? Is it the lens, the eyeball shape, something else?

### The eyeball

too long (or cornea too curved) — parallel light from distant objects focuses in front of the retina

### Near objects

clear; distant objects are blurry

### Why cylindrical lenses

needed for astigmatism but not for myopia or hyperopia

### Vision

the conversion of light energy into electrical signals

### job

to focus incoming light precisely onto the photoreceptor cells of the retina — all refractive disorders are failures of

## 4. Activity: Build the Lesson Map

Use the lesson to complete the table. Keep answers brief but specific.

Prompt	Your answer
Main concept	
Important example	
Common mistake to avoid	
How this links to the next lesson	

## 5. Short Answer Questions

1. Explain this lesson goal in your own words: "The pathway of light through the eye: cornea → aqueous humour → pupil → lens → vitreous humour → retina → optic nerve → visual cortex". Use one specific example from the lesson.

**BAND 3** **2 MARKS**

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2. Apply this idea to a new example: "The anatomical cause of myopia, hyperopia, and astigmatism". Show your reasoning clearly.

**BAND 4** **3 MARKS**

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3. Analyse why this idea matters for understanding Technologies and Disorders — Visual Disorders, Glasses, Contact Lenses and Eye Surgery: "The type of corrective lens required for each refractive error and why".

**BAND 5** **4 MARKS**

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## 6. Extend: Apply the Idea

BAND 5/6

5 MARKS

**A student gives a memorised answer about Technologies and Disorders — Visual Disorders, Glasses, Contact Lenses and Eye Surgery but does not use evidence or reasoning.**

Improve the answer by writing a stronger response that uses accurate terminology, a relevant example and a clear explanation.

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## 7. Multiple Choice

**1.** What is the best first step when answering a question about Technologies and Disorders — Visual Disorders, Glasses, Contact Lenses and Eye Surgery?

- A. Identify the key concept being tested
- B. Write every fact from memory
- C. Ignore the command word
- D. Skip examples and evidence

**2.** Which answer would show stronger understanding of Technologies and Disorders — Visual Disorders, Glasses, Contact Lenses and Eye Surgery?

- A. An answer with accurate terms and reasoning
- B. A copied definition only
- C. A single-word response
- D. An answer with no example

**3.** What should you do if a question asks you to explain?

- A. Link the idea to a reason or cause
- B. List unrelated facts
- C. Only draw a diagram
- D. Write the shortest possible answer

## 8. Success Criteria Proof

Finish with evidence that you can do each success criterion.

### SUCCESS CRITERION 1

**Prove that you can: The pathway of light through the eye: cornea → aqueous humour → pupil → lens → vitreous humour → retina → optic nerve → visual cortex**

**BAND 3** **2 MARKS**

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### SUCCESS CRITERION 2

**Prove that you can: The anatomical cause of myopia, hyperopia, and astigmatism**

**BAND 4** **3 MARKS**

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### SUCCESS CRITERION 3

**Prove that you can: The type of corrective lens required for each refractive error and why**

**BAND 5** **4 MARKS**

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**One thing I still need help with:**

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