

Perimeter and Arc Length

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

Trace the boundary. Every edge counts — straight or curved. The arc is just a fraction of the full circumference, and the fraction is determined by the angle.

- The circumference formula $C = 2\pi r$ and its equivalents
- Why an arc is a fraction of the full circumference — and why that fraction is $\frac{\theta}{360}$

2. Success Criteria

By the end, you should be able to:

- The circumference formula $C = 2\pi r$ and its equivalents
- The arc length formula $l = \left(\frac{\theta}{360}\right) \times 2\pi r$
- What a composite perimeter problem requires

3. Key Terms

Key idea

The central concept from Perimeter and Arc Length.

Evidence

Information, observations or calculations used to support an answer.

Explain

Give a reasoned answer that links cause and effect.

Apply

Use a learned idea in a new example, problem or scenario.

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 circumference formula $C = 2\pi r$ and its equivalents". Use one specific example from the lesson.

BAND 3 **2 MARKS**

2. Apply this idea to a new example: "The arc length formula $\ell = (\theta/360) \times 2\pi r$ ". Show your reasoning clearly.

BAND 4 **3 MARKS**

3. Analyse why this idea matters for understanding Perimeter and Arc Length: "What a composite perimeter problem requires".

BAND 5 **4 MARKS**

6. Extend: Apply the Idea

BAND 5/6 **5 MARKS**

A student gives a memorised answer about Perimeter and Arc Length 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.

7. Multiple Choice

1. What is the best first step when answering a question about Perimeter and Arc Length?

- 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 Perimeter and Arc Length?

- 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 circumference formula $C = 2\pi r$ and its equivalents

BAND 3 **2 MARKS**

SUCCESS CRITERION 2

Prove that you can: The arc length formula $\ell = (\theta/360) \times 2\pi r$

BAND 4 **3 MARKS**

SUCCESS CRITERION 3

Prove that you can: What a composite perimeter problem requires

BAND 5 **4 MARKS**

One thing I still need help with:
