

# Inclined Planes

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

The trolley did not need a push. The slope itself did it — by redirecting gravity into a force along the surface. Here is exactly how.

- $W_{//} = mg \sin \theta$  — force down slope
- Why objects accelerate on slopes without a push

## 2. Success Criteria

By the end, you should be able to:

- $W_{//} = mg \sin \theta$  — force down slope
- $W_{\perp} = mg \cos \theta$  — force into slope
- $N = mg \cos \theta$  on an inclined plane

## 3. Key Terms

### Key idea

The central concept from Inclined Planes.

### 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: " $W_{//} = mg \sin \theta$  — force down slope". Use one specific example from the lesson.

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

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2. Apply this idea to a new example: " $W_{\text{perp}} = mg \cos \theta$  — force into slope". Show your reasoning clearly.

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

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3. Analyse why this idea matters for understanding Inclined Planes: " $N = mg \cos \theta$  on an inclined plane".

**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 Inclined Planes 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 Inclined Planes?

- 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 Inclined Planes?

- 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:  $W_{//} = mg \sin \theta$  — force down slope

BAND 3

2 MARKS

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### SUCCESS CRITERION 2

Prove that you can:  $W_{\text{perp}} = mg \cos \theta$  — force into slope

BAND 4

3 MARKS

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### SUCCESS CRITERION 3

Prove that you can:  $N = mg \cos \theta$  on an inclined plane

BAND 5

4 MARKS

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One thing I still need help with:

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