PHYSICS YEAR 11 - MODULE 2 - LESSON 4

# Newton's Laws and Friction

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 packages kept moving. The van stopped. Two different objects, one moment — and Newton's Laws explain exactly why.

- Newton's First Law — formal statement
- Why packages fly forward when a van brakes

## 2. Success Criteria

By the end, you should be able to:

- Newton's First Law — formal statement
- Newton's Second Law — F net = ma
- f = μF N and what μ represents

## 3. Key Terms

**Key idea**
The central concept from Newton's Laws and Friction.

**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: "Newton's First Law — formal statement". Use one specific example from the lesson.**

BAND 3 2 MARKS

**2. Apply this idea to a new example: "Newton's Second Law — F net = ma". Show your reasoning clearly.**

BAND 4 3 MARKS

**3. Analyse why this idea matters for understanding Newton's Laws and Friction: "f = μF N and what μ represents".**

BAND 5 4 MARKS

## 6. Extend: Apply the Idea

BAND 5/6 5 MARKS

**A student gives a memorised answer about Newton's Laws and Friction 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 Newton's Laws and Friction?

☐ 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 Newton's Laws and Friction?

☐ 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: Newton's First Law — formal statement**

BAND 3 2 MARKS

**SUCCESS CRITERION 2**

**Prove that you can: Newton's Second Law — F net = ma**

BAND 4 3 MARKS

**SUCCESS CRITERION 3**

**Prove that you can: f = μF N and what μ represents**

BAND 5 4 MARKS

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