PHYSICS YEAR 11 - MODULE 2 - LESSON 15

Dynamics Synthesis — Connecting Forces, Energy and Momentum

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

This final lesson is where the module stops feeling like separate chapters. A real dynamics problem often begins with forces, shifts into motion, turns into energy, and ends with impulse or momentum. Your job now is to recognise the chain and choose the right law at the right moment.

- Key facts and terms for Dynamics Synthesis — Connecting Forces, Energy and Momentum
- How the main ideas in Dynamics Synthesis — Connecting Forces, Energy and Momentum connect

2. Success Criteria

By the end, you should be able to:

- Key facts and terms for Dynamics Synthesis — Connecting Forces, Energy and Momentum
- Where this lesson fits in Module 2
- How the main ideas in Dynamics Synthesis — Connecting Forces, Energy and Momentum connect

3. Key Terms

This final lesson
where the module stops feeling like separate chapters

Your job now
to recognise the chain and choose the right law at the right moment

trolley
pushed, speeds up, collides with another trolley, and then both slide to rest

use when forces
known and you need acceleration

use when friction
negligible or non-conservative work is tracked separately

acting on an object
the first step to solving dynamics problems

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: "Key facts and terms for Dynamics Synthesis — Connecting Forces, Energy and Momentum". Use one specific example from the lesson.

BAND 3 2 MARKS

2. Apply this idea to a new example: "Where this lesson fits in Module 2". Show your reasoning clearly.

BAND 4 3 MARKS

3. Analyse why this idea matters for understanding Dynamics Synthesis — Connecting Forces, Energy and Momentum: "How the main ideas in Dynamics Synthesis — Connecting Forces, Energy and Momentum connect".

BAND 5 4 MARKS

6. Extend: Apply the Idea

BAND 5/6 5 MARKS

A student gives a memorised answer about Dynamics Synthesis — Connecting Forces, Energy and Momentum 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 Dynamics Synthesis — Connecting Forces, Energy and Momentum?

☐ 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 Dynamics Synthesis — Connecting Forces, Energy and Momentum?

☐ 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: Key facts and terms for Dynamics Synthesis — Connecting Forces, Energy and Momentum

BAND 3 2 MARKS

SUCCESS CRITERION 2

Prove that you can: Where this lesson fits in Module 2

BAND 4 3 MARKS

SUCCESS CRITERION 3

Prove that you can: How the main ideas in Dynamics Synthesis — Connecting Forces, Energy and Momentum connect

BAND 5 4 MARKS

One thing I still need help with: