

Latent Heat and Modes of Heat Transfer

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

Temperature does not always rise when energy is added. During a phase change, energy can go into changing particle arrangement instead of particle kinetic energy. This lesson also closes the module with the three modes of heat transfer: conduction, convection, and radiation.

- What latent heat means
- Why temperature stays constant during a phase change

2. Success Criteria

By the end, you should be able to:

- What latent heat means
- The difference between fusion and vaporisation
- How to read a heating curve

3. Key Terms

and radiation

physically distinct

Zero acceleration

an object is stationary

rate at which work

done or energy is transferred; $P = W/t$

Latent heat

the energy absorbed or released during a change of state at constant temperature

energy

still being transferred into the substance, but the temperature may stay constant because the energy goes into changing

Because temperature

a measure of average kinetic energy, the temperature remains flat during the phase change

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. 7. Explain why temperature stays constant during a phase change even though energy is still being supplied.

BAND 3

3 MARKS

2. 8. Calculate the energy needed to vaporise 0.20 kg of water if the specific latent heat of vaporisation is $2.26 \times 10^6 \text{ J/kg}$.

BAND 4

3 MARKS

3. 9. Compare conduction, convection, and radiation, giving one example of each.

BAND 5

4 MARKS

6. Extend: Apply the Idea

BAND 5/6

5 MARKS

A student gives a memorised answer about Latent Heat and Modes of Heat Transfer 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 Latent Heat and Modes of Heat Transfer?

- 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 Latent Heat and Modes of Heat Transfer?

- 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: What latent heat means

BAND 3 **2 MARKS**

SUCCESS CRITERION 2

Prove that you can: The difference between fusion and vaporisation

BAND 4 **3 MARKS**

SUCCESS CRITERION 3

Prove that you can: How to read a heating curve

BAND 5 **4 MARKS**

One thing I still need help with:
