

Pearson Edexcel
**International GCSE
Science**

Revision Support for
International GCSE Chemistry
Modular





Aims and Objectives

- Review key features of the modular specification and assessments
- Examine assessment objectives, command words and mathematical skills assessment and consider how these might inform preparation for modular exams.
- Review free resources and past training content which could inform approaches to revision and exam preparation.
- Consider lessons from recent linear exam series that can inform preparation for the first modular exams
- Share revision guidance and strategies

IG Chemistry – the modular route

IG Science Modular Key Changes

Modular route



Unit assessments can be taken over multiple exam series (no tier)

Grades are calculated on raw marks which are then converted to a UMS (Uniform Mark Scale).

Students can re-sit individual units in any exam series.

Once a student has all their unit results, they can 'cash in' these results for their grade.

A modular route is only offered by Pearson Edexcel at International GCSE

Linear route



Assessments for all units are taken together in one exam series (no tier).

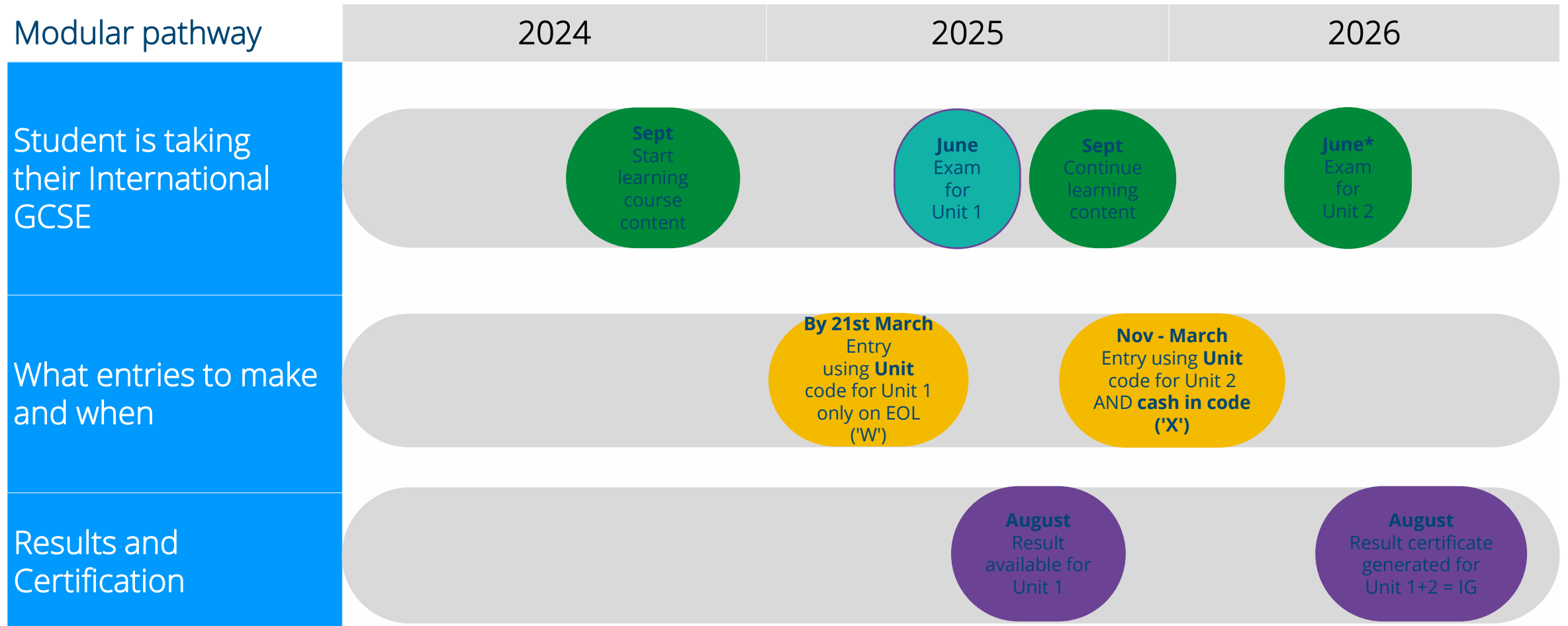
Grades are calculated on raw marks only.

Students can re-sit assessments for all units together in one exam series.

The grade students receive are calculated at the end of the exam series in which they sat their assessments.

Everything else remains the same, including content and level of demand in assessments

A student's IG Science modular journey



The benefits of a modular approach

Students



- ✓ Reduces students' **mental load** and **stress** by allowing them to focus on one year of curriculum at a time and spreads out their exams over 2 years.
- ✓ Provides more **opportunities** to demonstrate their skills and abilities and optimise feedback to improve their performance.
- ✓ Allows them to take exams when they're ready, like they do with other tests, and take advantage of multiple **re-sit** opportunities.

Educators & Parents



- ✓ Provides teachers with rich mid-cycle data on learner **performance** via post-exam analysis support tools such as Results Plus.
- ✓ **Eases the pressures** faced by exam officers as it allows international schools to spread the exam admin burden.
- ✓ Where parents pay exam fees, it helps with **budgeting** by enabling families to spread their child's exam fees over two years.

IG Science Modular Overview

Teaching and Learning

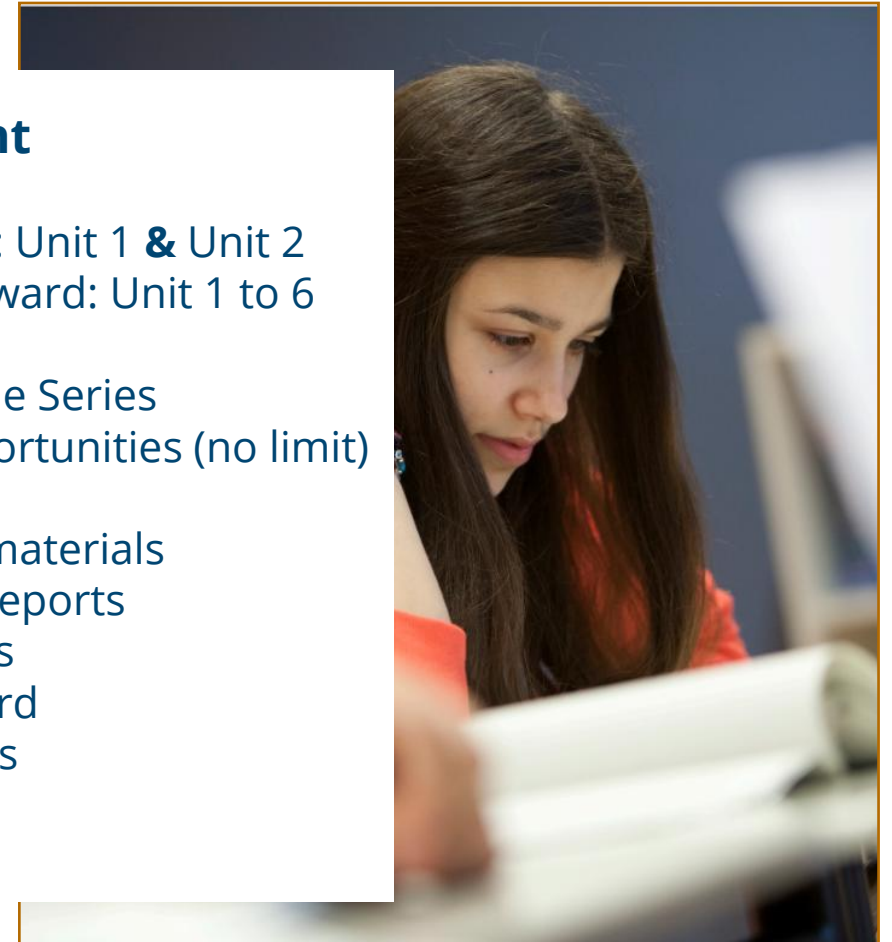
120 GLH for Biology, Chemistry and Physics.
240 GLH for Science (Double Award)

- Specification
 - Getting Started Guides
 - Teacher Course planners
 - Scheme of Work
 - Lesson Plans suggested activities
- + Student Books
+ Student lab books
+ Teaching Hubs (separate only)

Assessment

Separate: Unit 1 & Unit 2
Double Award: Unit 1 to 6

- Nov & June Series
 - Resit opportunities (no limit)
- + Exemplar materials
+ Examiner reports
+ Past papers
+ Exam Wizard
+ Results Plus



Teaching considerations & supporting student progress

- ❑ Same considerations that you would have with a linear course e.g. sequencing, threshold concepts, development of disciplinary and substantive knowledge, interleaving etc.
- ❑ June & November series - First assessment June 2025
- ❑ Multiple combinations of papers e.g.

Example 1

- Unit 1 end of Y10 (June)
- Unit 2 end of Y11 (June)

Example 2

- Unit 1 Y10 (June)
- Unit 1 re-sit Y11 (Nov)
- Unit 2 end of Y11 (June)

Example 3

- Unit 1 & Unit 2 Y11 (Nov)
- Unit 2 re-sit Y11 (June)

How is the Chemistry content split?

Unit 1 (Unit 3 for Double Award)	Unit 2 (Unit 4 for Double Award)
<u>1. Principles of chemistry: Part 1</u> <ul style="list-style-type: none">a. states of matterb. elements, mixtures & compoundc. atomic structured. periodic tablee. chemical formulae, equations & calculations <u>2. Inorganic chemistry: Part 1</u> <ul style="list-style-type: none">a. reactivity seriesb. extraction and uses of metals*c. acids, alkalis and titrationsd. acids, bases and salt preparations <u>3. Physical chemistry: Part 1</u> <ul style="list-style-type: none">a. energetics <u>4. Organic chemistry: Part 1</u> <ul style="list-style-type: none">a. introductionb. crude oilc. alkanesd. alkenes	<u>5. Principles of chemistry: Part 2</u> <ul style="list-style-type: none"><i>d. periodic table**</i><i>e. chemical formulae, equations & calculations**</i>f. ionic bondingg. covalent bondingh. metallic bonding*i. electrolysis* <u>6. Inorganic chemistry: Part 2</u> <ul style="list-style-type: none">e. Group 1f. Group 7g. gases in the atmosphereh. chemical tests <u>7. Physical chemistry: Part 2</u> <ul style="list-style-type: none">b. rates of reactionc. reversible reactions and equilibrium <u>8. Organic chemistry: Part 2</u> <ul style="list-style-type: none">e. alcohols*f. carboxylic acids*g. esters*h. synthetic polymers

* = separate chemistry content only

** = assessed in Unit 1 and Unit 2

Assessment objectives and command words

Assessment Objective 1

To meet this AO students will be expected to:

- *recall scientific facts (maximum of 14 marks) and demonstrate understanding of scientific techniques and procedures*
- Students will not be expected to design, improve or evaluate practical methods
- Recall questions tend to carry few marks and include a limited range of command words.

AO1

Knowledge and understanding of
Chemistry

38-42%

Assessment Objective 2

To meet this AO students will be expected to:

- *apply knowledge and understanding of scientific ideas*

It also builds on expectations given in AO1 by expecting students to

- *apply their knowledge and understanding of scientific enquiry, techniques and procedures*

AO2

Application of knowledge and understanding, analysis and evaluation of Chemistry

38-42%

Assessment Objective 3

To meet the criteria for AO3 students are expected to:

- *Interpret and evaluate*
- *Make judgements and draw conclusions*
- *Develop and improve experimental procedures*

AO3

Experimental skills, analysis and
evaluation of data and methods in
Chemistry

19-21%

Command words – guidance in Appendix 4 of the specification

Add/Label

Calculate

Comment on

Complete

Deduce

Describe

Design

Determine

Discuss

Draw

Estimate

Evaluate

Explain

Give/State/Name

Identify

Justify

Plot

Predict

Show that

Sketch

State what is meant by

Suggest

Mathematical skills
which can be assessed
in both units



Arithmetic and numerical computation (chemistry)

Recognise and use numbers in decimal form

Recognise and use numbers in standard form

Use ratios, fractions, percentages, powers and roots



Handling data (chemistry)

Use an appropriate number of significant figures

Understand and find the arithmetic mean (average)

Construct and interpret bar charts

Understand simple probability

Understand the terms mode and median

Use a scatter diagram to identify a pattern or trend between two variables

Make order of magnitude calculations



Algebra and geometry (chemistry)

Understand and use the symbols $<$, $>$, \propto , \sim

Change the subject of an equation

Substitute numerical values into algebraic equations using appropriate units for physical quantities

Solve simple algebraic equations



Graphs (chemistry)

Understand that $y = mx + c$ represents a linear relationship

Translate information between graphical and numerical form

Plot two variables (discrete and continuous) from experimental or other data

Determine the slope and intercept of a linear graph

Understand, draw and use the slope of a tangent to a curve as a measure of rate of change



Free resources
available

Teaching and Learning Materials online

Teaching and learning materials (18)

SORT BY Latest

[EXPAND ALL](#)

- Course planner
- Guide
- Mapping document
- Maths and practical support
- Past training content **NEW**
- Scheme of work
- Topic support

Specification

Teaching from: 2024

External assessment from: 2025

Certification from: 2025

Our new modular assessment route breaks the journey into units with an exam at the end of each unit, when the student feels prepared and ready. Whichever route you choose, the exams take the same amount of time, teachers spend the same amount of time teaching, and everyone has the best chance of success at international GCSE.

This modular assessment route is only available to schools outside of the UK.

[Download](#)

PDF | 1.4 MB

Register your interest

Find out more about Pearson Edexcel International qualifications and sign up to receive the latest news.

[Let us know](#)

Course materials

- [Specification and sample assessments \(2\)](#)
- [Teaching and learning materials \(16\)](#)

Teacher support and training

- [Training sessions](#)
- [Results support](#)
- [New 9-1 grading scale explained](#)

Published resources

To support effective classroom delivery, we've developed a range of published resources for the new Pearson Edexcel International GCSE (9-1), with progression, relevance and support at their core.

[Learn more](#)

Psychology and international Science








Email : teachingscience@pearson.com

Phone : +44 (0) 344 463 2535
(Teaching Services team | Mon - Fri, 8am - 5pm GMT)

- [Sign up for subject advisor updates](#)
- [Visit the customer support portal](#)

Maths and practical support: free worksheets available to download

These can be found in the 'teaching and learning materials' section of the qualification web page.

Maths and practical support	
	International GCSE - Maths in Science Decimals PDF 142.9 KB 17 December 2024
	International GCSE - Maths in Science Sampling PDF 343.9 KB 17 December 2024
	International GCSE - Maths in Science Significant Figures PDF 119.9 KB 17 December 2024
	International GCSE - Maths in Science Standard Form PDF 151.2 KB 17 December 2024
	International GCSE - Maths in Science Tables, Charts and Graphs PDF 559.5 KB 17 December 2024
	Core Practical Guide For modular Biology, Chemistry and Physics PDF 9.6 MB 21 August 2024
	International GCSE Guide – Maths for scientists PDF 6.1 MB 13 August 2024

examWizard

Our free past paper search and 'build a paper' tool now has the option to search linear International GCSE past paper questions by modular International GCSE unit.

Questions assessing mathematical skills can be selected in the 'skill' filter.

Skill

☒ 1 selected

☐ **Select all**

☒ **Maths**

☐ Recall

Qualification

GCE

GCE AS and A level from 2015

GCSE

GCSE (9-1)

iLowerSecondary

International Advanced Level

International Advanced Level from 2018

International GCSE (9-1)

International GCSE (Modular 9-1)

International GCSE / Edexcel Certificates

iPrimary

examWizard

Questions can be searched by sub-topic to create practice assessments or sets of past paper questions for students to answer as part of their revision.

Select a topic

☒ Select all

☐ Expand all

3 topics selected

Available topics for selected search options

4WCH1 (1C)

Chemistry

Topic 1: Principles of chemistry: Part 1

☐ Understand the arrangement, movement and energy of particles in the three states of matter

☐ Understand the names of interconversions and characteristics of the 3 states of matter

☐ Understand and explain experimental results of dilutions and diffusions

☒ Know what is meant by: solvent, solute, solution, saturated solution

☒ Understand how to plot and interpret solubility curves

☒ Practical: investigate the solubility of a solid in water

☐ Understand how to use the terms: element, compound and mixture

☐ Describe experimental separation techniques: distillation, filtration, crystallisation and chromatography

☐ Understand how to use the calculation of Rf values to identify the components of a mixture

☐ Know what is meant by the terms atom and molecule

☐ Know the structure of an atom in terms of: position, relative mass and charge of protons, neutrons and electrons

☐ Know what is meant by the terms: atomic number, mass number, isotopes, relative atomic mass

☐ Calculate the relative atomic mass of an element from the abundances of its isotopes

☐ Understand how the Periodic Table shows elements in order of atomic number, groups and periods

Cancel


Done


Accessing past training content


Past training content in 'teaching and learning materials'

Download presentations and delegate booklets.

Links to recordings of Exam Insights sessions will also be posted here and will not appear on public channels until the papers are unlocked 12 months after the series.

Past training content **NEW** 

 **Revision support for International GCSE Chemistry Modular Specification** **NEW**
| ZIP 6.3 MB | 24 March 2025

 **Planning Considerations for the New Modular International GCSE Chemistry course**
| ZIP 2.9 MB | 01 July 2024

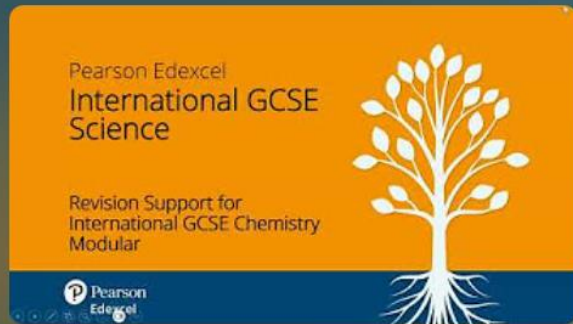
New YouTube channel for public training videos



Search



+ Create



International GCSE and International A Level ...

by Pearson UK & International Schools

Playlist • 10 videos • 120 views

This playlist contains past training events for International GCSE and International A Level Chemistry Specific ...more

▶ Play all



1 unavailable video is hidden



1



Revision support for International GCSE Chemistry Modular...

Pearson UK & International Schools • 96 views • 5 days ago



2



Using ResultsPlus and Exam Wizard to improve student...

Pearson UK & International Schools • 366 views • 4 months ago



3



Getting Ready to Teach Pearson International Advanced Lev...

Pearson UK & International Schools • 69 views • 6 months ago



4



Getting Ready to Teach Pearson Edexcel International GCSE...

Pearson UK & International Schools • 85 views • 6 months ago



Exam Insights from Linear Chemistry (9-1)

Key messages from past examines' reports

Application of knowledge to new contexts (both theoretical and practical) is a key skill – practising this by attempting past paper questions which assess AO2 is worthwhile.

Questions which require an **evaluation** response are challenging and worth practising. For the longer, discussion and evaluate style questions, candidates should be careful to explore all aspects of data thoroughly and use their own knowledge to add explanations.

'**Describe**' and '**explain**' are confused by some candidates – it is important that they understand the meaning of command words.

it is important that candidates have a thorough knowledge of all the **core practicals** listed in the specification.

Mathematical skills are a key part of the assessment – candidates should show all their working as they will gain credit for this even if their final answer is incorrect.

It is important to always **use scientific terminology** accurately.



Further advice from examiners to candidates 1

- Ensure that you read the question carefully and include sufficient points to gain full credit.
- Include as many points as there are marks available in the question.
- Make sure you have practised calculations, given in the appendix of the specification, and that you understand and know how to apply formulae and always include all your working.
- Take care when drawing diagrams to add labels and draw standard apparatus accurately.
- Write in detail and use correct and precise chemical terminology.
- Revise practical work to help in questions about unfamiliar or novel practical procedures.



Further advice from examiners to candidates 2

- Make sure you know and understand all of the terms in the specification.
- Always be able to identify the variables in experiments.
- Ensure in experiment design questions to give the independent variable and the range you are going to use, the dependent variable, how you are going to measure it and the control variables and explain how these will be controlled.
- Always read through your responses and ensure that what you have written makes sense and answers the question fully.
- Learn units and use them accurately.

Challenging questions from June 2024 papers

Q07di

A is incorrect the overall charge would be negative and the formula for ammonium is incorrect.
B is incorrect as ammonium ions are NH_4^+
C is incorrect as although the formula for ammonium is incorrect overall it would be negative.

(d) Ammonium carbonate contains nitrogen.

(i) What is the formula of ammonium carbonate?

- ☐ **A** NH_3CO_3
- ☐ **B** $(\text{NH}_3)_2\text{CO}_3$
- ☐ **C** NH_4CO_3
- ☐ **D** $(\text{NH}_4)_2\text{CO}_3$

The candidates would do well to recall and annotate the charges of ammonium and carbonate ions around the question to help answer. They could then use this to work out the correct answer by writing formulae correct and/or correctly balanced by each option.

D is the correct answer. The formula is chemically correct two ammonium ions are needed to balance the charge on the carbonate ion.

Ammonium ions
 NH_4^+

Carbonate ions
 CO_3^{2-}

Q07ci

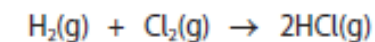
Most candidates were able to score all 3 marks in this question.

Those who did not tended to confuse their signs and give the answer as +184.

Some candidates were unable to use the equation to help either assuming they had to double the bond energy of the reactants or forgetting to double the bond energy of the products.

(c) In the presence of ultraviolet radiation, hydrogen reacts with chlorine to form hydrogen chloride.

This is the equation for the reaction.



The table shows the bond energies.

Bond	H—H	Cl—Cl	H—Cl
Bond energy in kJ/mol	436	242	431

(i) Calculate the enthalpy change (ΔH), in kJ/mol, for the reaction.

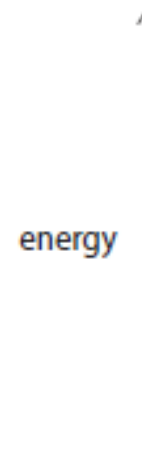
Include a sign in your answer.

(ii) Draw a reaction profile for the reaction.

Label the reactants, the products, ΔH and the activation energy (E_a).

Q07cii

Candidates struggled to score all marks in this question.



Many marks were lost unnecessarily by candidates failing to draw their arrows correctly. Too long, too short or no arrow head(s).

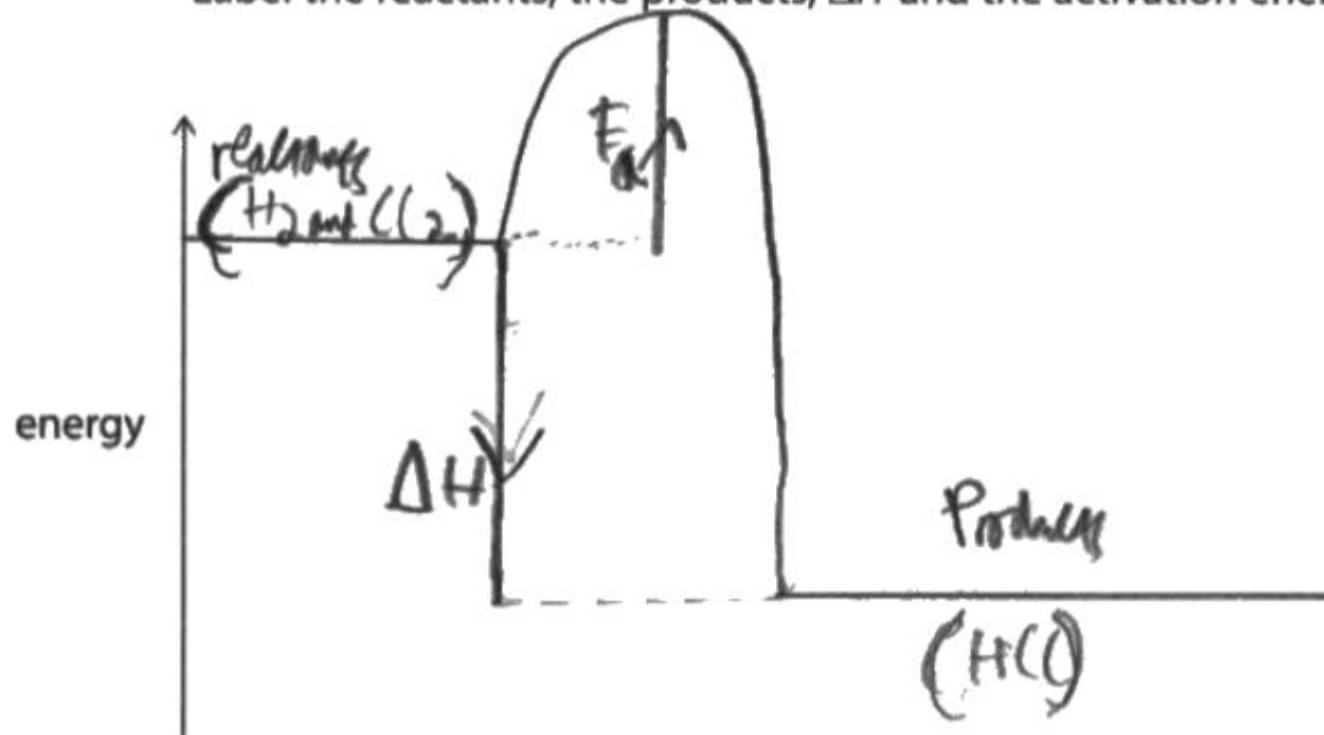
As well as this many failed to label the reactants and products or got the formulae or balancing incorrect.

Some candidates missed the activation energy hump, there were thus limited to 2 marks and could not score M1 and M4.

Q07cii

(ii) Draw a reaction profile for the reaction.

Label the reactants, the products, ΔH and the activation energy (E_a).



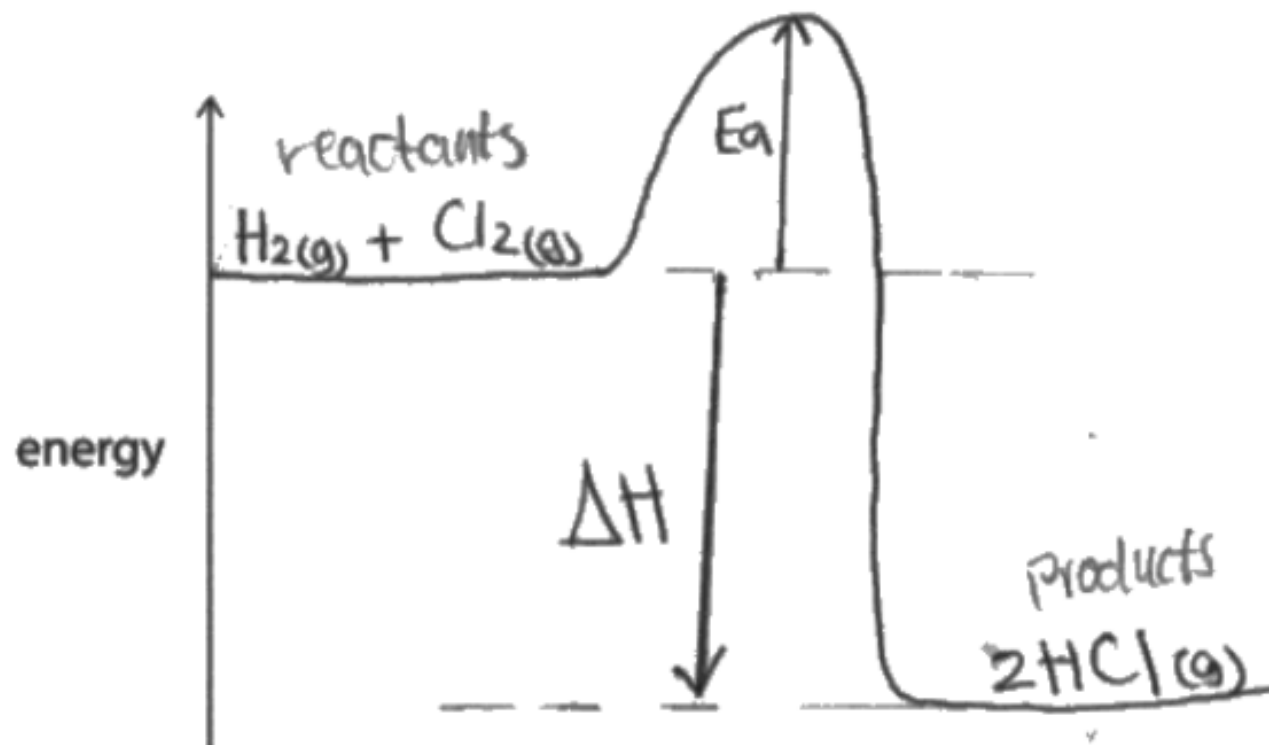
This candidate drew a good diagram but wrote 'HCl' instead of '2HCl' and so was limited to 3 marks.

7cii

A great diagram
which scored all 4
marks.

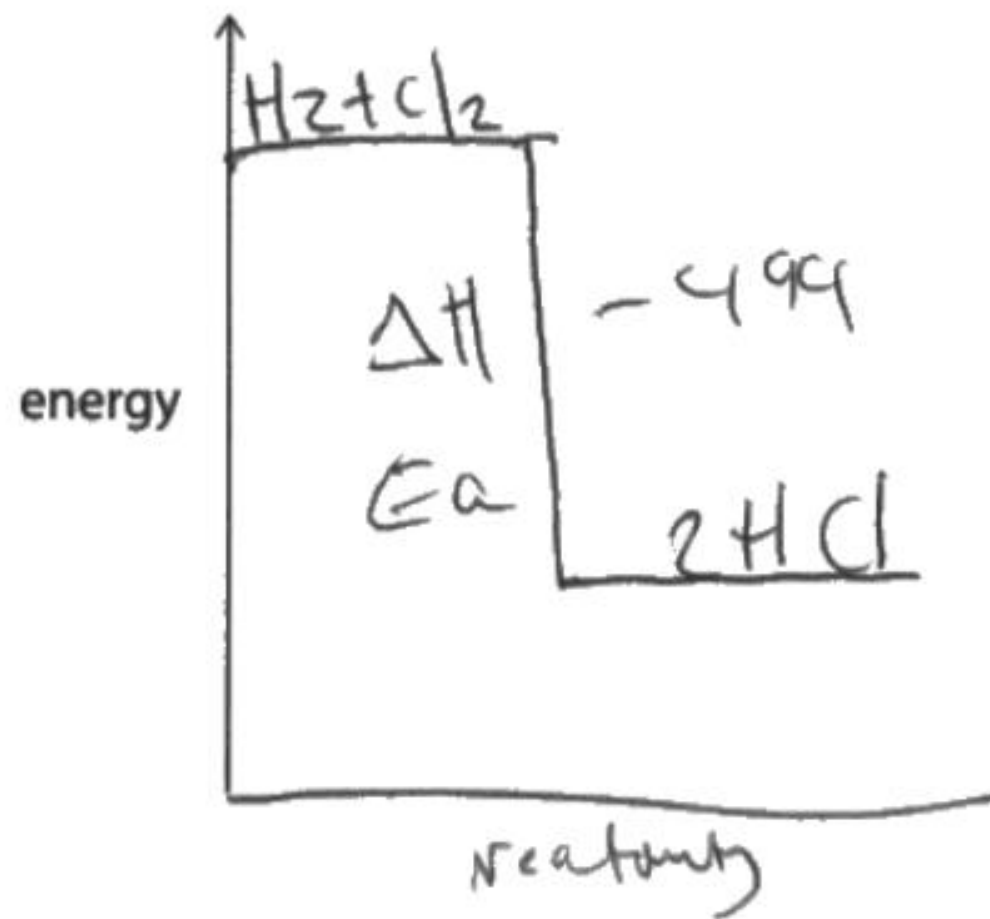
(ii) Draw a reaction profile for the reaction.

Label the reactants, the products, ΔH and the activation energy (E_a).



Q07cii

The candidate failed to draw the activation energy hump and so was limited to a maximum of 2 marks for M2 & M3.





Support

Support for Exam preparation and post results



- Free online results analysis tool for teachers.
- Provides a detailed breakdown of student performance in Pearson Edexcel exams.
- Identify topics and questions where the student could benefit from further learning and inform teaching strategies and approaches.
- Benchmark your school's performance against other Pearson Edexcel schools in your country.
- Not just a post-results tool: Mock exam results can also be fed into the system to produce analysis.
- Find student results analysis from their previous Pearson Edexcel school.
- ResultsPlus Direct gives your students access to their final grades and performance breakdown, wherever they are.
- Schools can sign up for free ResultsPlus account in just a few quick and easy steps:
<https://qualifications.pearson.com/en/support/Services/ResultsPlus.html>

ResultsPlus



1.
Student
takes exam
on paper



2.
Exam papers
scanned



3.
Examiners
mark papers
online



4.
Performance
reports
shared



- A free tool for teachers which helps you make quick homework assignments, topic tests and mock exams.
- Questions tagged against unit, topic and assessment objective or simply choose a whole past paper.
- Use existing mark schemes for accurate marking.
- Use examiner report for insight.
- Most recent exam content available sooner.
- Use the results to understand where students need more support, informing teaching strategies.

Access to Script (ATS) Online Portal

Access to Scripts (ATS) is a free online portal which allows teachers to immediately access electronically marked exam papers

Provides enhanced transparency and

- Offers transparent approach to marking process
- Provides better understanding of marking before requests for enquiries about results are made
- Provides excellent aid for teaching and preparing other cohorts for examinations by helping you to evaluate a student's performance on particular questions in relation to what they have been taught.

Available instantly from results day for all our examination series, for a defined window, you can view and download scripts which have been marked online free of charge from our Self-Service Portal.

For more information on ATS, and the post results windows, visit our post-results pages.



Additional Paid Resource

Resource	Planning, teaching and learning	Exam preparation and assessment	Results support
Curriculum-matched Student Books with ActiveBooks	✓	✓	
Teaching Hubs	✓	✓	

Pearson published resources

Student Book

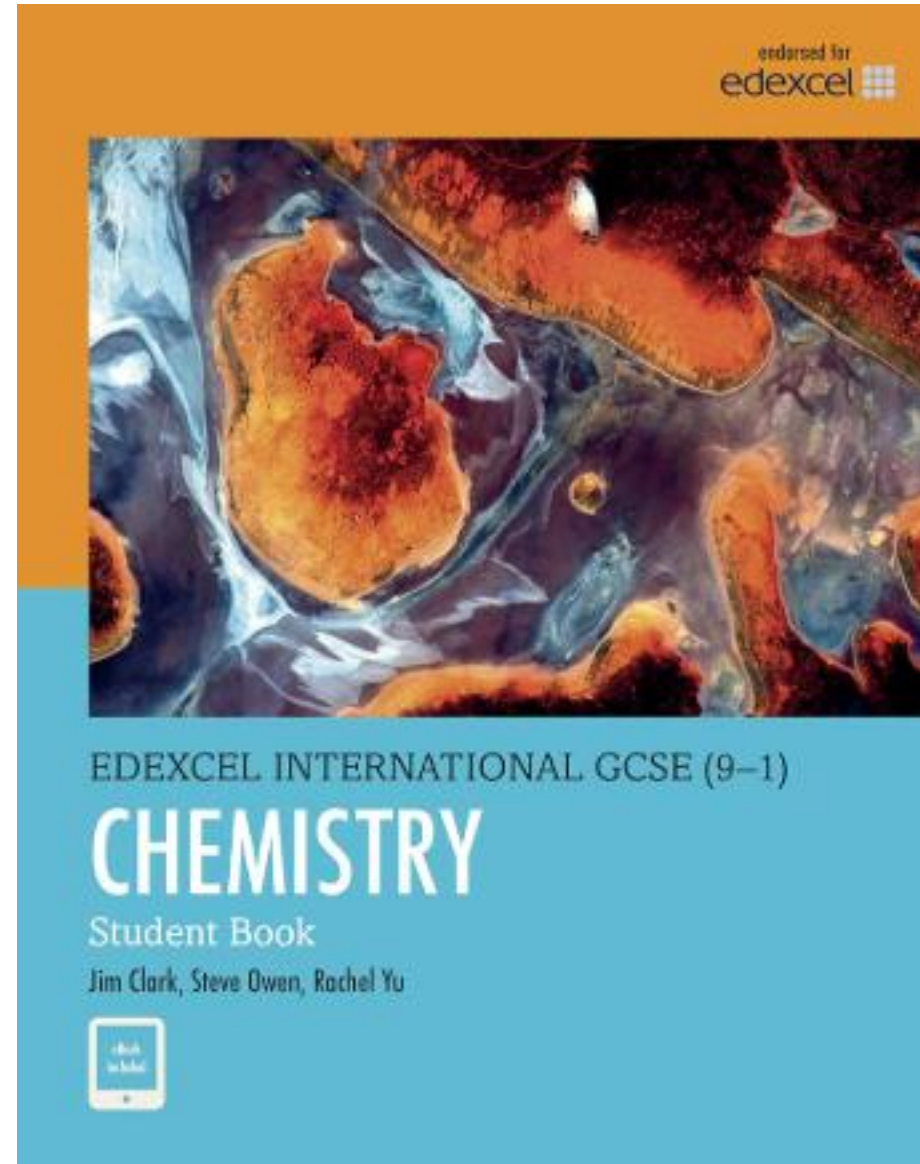
Edexcel International GCSE (9-1): Physics

Student Book

ISBN: 978-0435185275

For more information and access
to samples visit:

www.pearson.com/international-schools



International GCSE (9–1)

TeachingHubs

The new Teaching Hubs provide fully comprehensive planning and front-of-class guidance, along with exam-preparation resources and CPD support, to help you deliver your International GCSE lessons to a high standard – whether you are a specialist or non-specialist teacher.



Connect with other Edexcel International Science teachers on our new Facebook group



Contact your dedicated Subject Advisor

Tim Lawrence

Email: teachingscience@pearson.com

Phone: +44 (0) 344 463 2535

Your Subject Advisor should be your first line of contact for any subject specific query and will use their wealth of knowledge and experience to help you with your queries.





Questions and ideas
worth sharing



Pearson