

# Isaac Physics Teacher CPD

Using [isaacphysics.org](https://isaacphysics.org) for A Level Chemistry and Thermal Physics resources



# This session's objectives:

- Finding **Isaac Chemistry resources**: <https://isaacphysics.org/chemistry>
- Using the **Syllabus maps** to find syllabus-appropriate questions:  
[https://isaacphysics.org/pages/syll\\_map\\_chem](https://isaacphysics.org/pages/syll_map_chem)
- Using the **Question Finder** to select questions by topic and level
- Using the **Chemistry Equation Editor**: <https://youtu.be/zeBHUKVeKPE>
  - [https://isaacphysics.org/questions/ch\\_editor\\_1](https://isaacphysics.org/questions/ch_editor_1)
  - [https://isaacphysics.org/questions/ch\\_editor\\_2](https://isaacphysics.org/questions/ch_editor_2)
- Using the **Structural Formula Editor**: [https://jsme-editor.github.io/dist/JSME\\_test.html](https://jsme-editor.github.io/dist/JSME_test.html)
- Your questions!



# Question Finder

Use the Question Finder to create  
**gameboards**

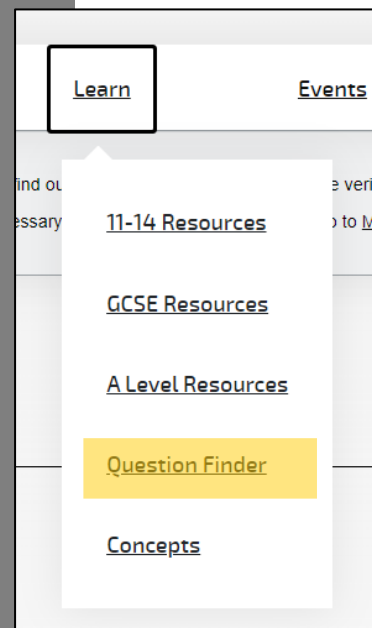
## Route

- Learn/Question finder

Help Video



[https://youtu.be/9docn\\_H8hh4](https://youtu.be/9docn_H8hh4)



Topics:

**Click these buttons to choose your question gameboard**

I am interested in stage... ?

A Level

I would like questions for... ?

Practice

Challenge

Topics:

[Scroll to questions...](#)

[Shuffle Questions](#)

1 Use the dropdown to select a stage (GCSE, A Level, Further A, University)

3 Select difficulty levels.  
**Practice:** directly apply 1 idea  
**Challenge:** Apply multiple ideas, use creativity

2 Select a subject, field and topic.



# Equation editor: Chemistry

Help Video



<https://youtu.be/zeBHUKVeKPE>

- › Use mouse/touch to answer symbolic questions

Write reduction half-equations to show:

Part A Iron(III)

Reduction of iron(III) to iron metal

Click to enter your answer

Check my answer

[Link to question](#)

numbers

elements & particles

states

operators, fractions, other symbols

e

1 2 3

H He Li

(aq) (g) (l)

→ ⇌ +

Fe<sup>2+</sup> + 2 e<sup>-</sup> →

?

Reduction of iron(III) to iron metal

HIDE QUESTION

Fe<sup>2+</sup> + 2e<sup>-</sup>

→

# Structural Formula editor

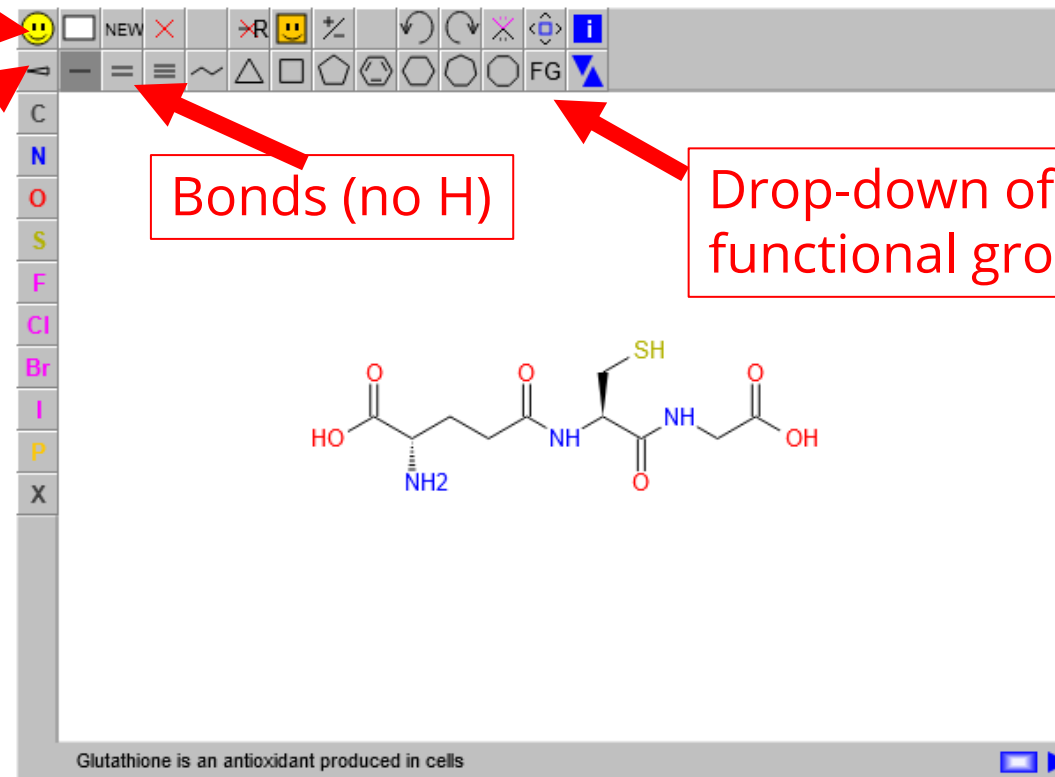
JSME test page

Click to show smile string  
(paste into answer box)

Can show  
stereoisomers

Bonds (no H)

Drop-down of  
functional groups



Old look

Turn on antialias

Turn on antialias for the molecular drawing area

Drawing area line width: 2.0

Drawing area font size: 12

Drawing area scale: 1.5

Non drawing area scale: 1.5

Set another background color for the GUI frame and the dialog boxes

New look

Turn off antialias

Turn off antialias for the molecular drawing area

set line width

set font size

set scale get scale

set scale get scale

set predefined color



# Using the Syllabus Maps to find syllabus-appropriate questions

› Follow this path to find the specification table for A Level:



A Level or equivalent

## Physical Chemistry Mastery Book



Interactive questions from our Mastering Essential Pre-University Physical Chemistry book.

## Mastering essential pre-university chemistry

Help

By D. I. Follows

These exercises help students master the concepts of Sixth Form chemistry.

Use this [Periodic Table](#) and [these constants](#) in calculations.

### Buy the book

Printed copies, cost price £1 (plus p+p)

[Buy Isaac Books](#)

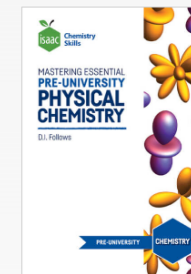
### For Teachers

[Specification Table](#) - maps the book to your exam board.

### Set a section for homework

Either click "Assign" below, or the section number in the specification table.

- You will be taken to your "Set Assignments" page where the section will appear in the top left position. Click on "Assign / Unassign" to see a drop down list of your groups.
- Click on the group name and "Save" to assign it.



Apple/Learn A Level or Learn/A Level Resources/Physics Chemistry Mastery Book/Specification table

[https://isaacphysics.org/pages/syll\\_map\\_chem](https://isaacphysics.org/pages/syll_map_chem) (copy into SOW for ref)

7 English and Welsh specifications are here – we are planning to include the Scottish and Irish specifications as soon as possible



# A Level Physical Chemistry Syllabus Maps

- › Find syllabus-appropriate questions:

Home > Mastering Physical Chemistry Syllabus Maps

## Mastering Physical Chemistry Syllabus Maps

[Link to paste](https://isaacphysics.org/pages/syll_map_chem)  
[https://isaacphysics.org/pages/syll\\_map\\_chem](https://isaacphysics.org/pages/syll_map_chem)

You can set each page of the book as homework in 2 clicks! When logged on as a teacher, click on the page you wish to assign (e.g. A1) and you will be taken to your set assignments page with A1 as the top left box ready to assign to as many groups as you wish.

		OCR A (H032/H432)	OCR B (H033/433)	AQA	Edexcel	Eduqas	CIE Pre-U	IE Chem
A	Formulae & Equations							
A1	Empirical formulae	2.1.3	EL(b)	3.1.2.4	Topic 5	C1.3	A4.1	1.
A2	A <sub>r</sub> & M <sub>r</sub> and molecular formula	2.1.3	EL(a)	3.1.1.2 / 3.1.2.1	Topic 1	C1.3	A4.1	1.



# Chemistry book: pdf (chapters 1-2)

<https://isaacphysics.org/chemistry>

## Introducing Isaac Chemistry Resources



All the questions and use of the site is completely FREE for all, students and teachers alike.

Like Isaac Physics, Isaac Chemistry resources will focus on developing problem solving skills in chemistry from A-level through to the transition to university. Also like Isaac Physics, we have commissioned a mastery book for pre-university physical Chemistry.

**Mastery Book**

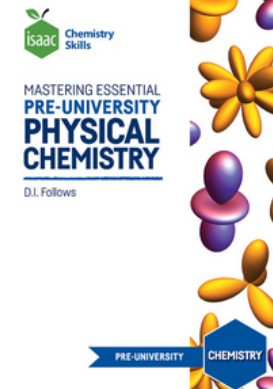
A Level Chemistry Questions

Free Registration

For Teachers

**Developing mastery of essential pre-university chemistry** by Dr David Follows

- The first two chapters of this book, aimed at A-level students studying Chemistry, are available to [download as a pdf](#).
- The complete first edition is **now available** for £1 and is purchasable from [Isaac Books](#)
- **See questions from the Mastering Chemistry skills book.** Isaac marks them for you!
- The values for relative atomic masses and the constants used in the book are those given on this [Periodic Table](#)
- **For teachers:** See school [syllabus maps](#) for the pages of this book.

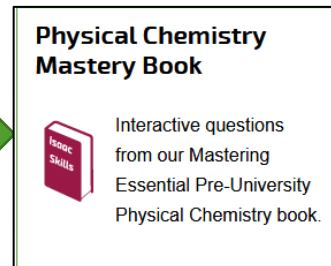
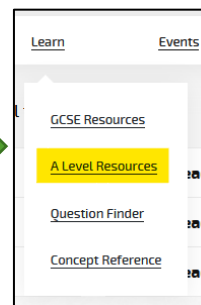






# A Level chemistry book: Periodic Table

- › Send links to students
  - Periodic Table and fundamental constants, for use with book



**Mastering essential pre-university chemistry** Help

By D. I. Follows

These exercises help students master the concepts of Sixth Form chemistry.

Use this [Periodic Table](#) and [these constants](#) in calculations.

**Buy the book**

Printed copies, cost price £1 (plus p+p)

**Buy Isaac Books**

**For Teachers**

**Specification Table** - maps the book to your exam board.

**Set a section for homework**

Either click "Assign" below, or the section number in the specification table.

- You will be taken to your "Set Assignments" page where the section will appear in the top left position. Click on "Assign / Unassign" to see a drop down list of your groups.
- Click on the group name and "Save" to assign it.

**Periodic Table**

The Periodic Table of the Elements

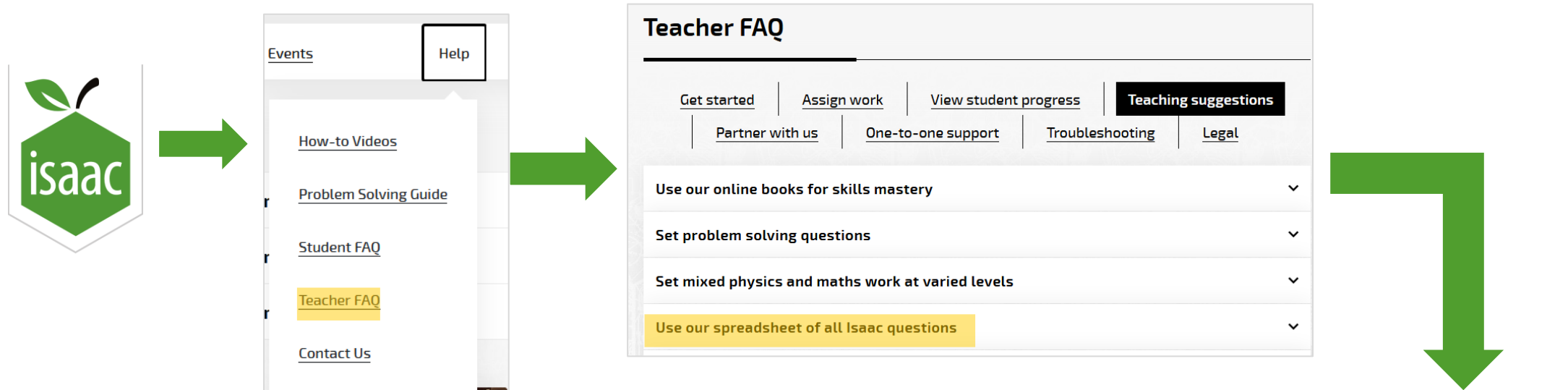
Figure 1: The Periodic Table of the Elements

[https://isaacphysics.org/pages/chem\\_16\\_periodic\\_table#periodic\\_table](https://isaacphysics.org/pages/chem_16_periodic_table#periodic_table)  
[https://isaacphysics.org/pages/chem\\_16\\_periodic\\_table#constants](https://isaacphysics.org/pages/chem_16_periodic_table#constants)



# Using the spreadsheet of Isaac questions to select appropriate questions by topic/level

- › Apple/Help/Teacher FAQ/Teaching Suggestions/Spreadsheet of all the Isaac Questions



The diagram illustrates the navigation path from the isaac logo to the Teacher FAQ page. It shows the 'Help' menu, the 'Teacher FAQ' section, and the 'Teaching suggestions' tab. The 'Use our spreadsheet of all Isaac questions' link is highlighted in yellow.

<https://isaacphysics.org/support/teacher/suggestions#spreadsheet>

The following spreadsheet lists all of the questions available on isaacphysics.org. Use it to search for questions by question content (lesson / related concepts) and question type (numerical, multiple choice, symbolic) as well as by topic and level. It is useful, for example, to find extension work on-the-fly to give to faster-working students.

[Download Here](#)

We also provide [CSV](#) and [OpenDocument Spreadsheet](#) versions.

Spreadsheet last updated 25th November 2020