

Isaac Chemistry

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Main Takeaways:

- Finding Isaac Chemistry resources: <https://isaacphysics.org/chemistry>
- Using the Question Finder to select questions
- Overview of chemistry topics covered, including gameboards for each
- Using the Chemistry Equation Editor: <https://youtu.be/zeBHUKVeKPE>
 - https://isaacphysics.org/questions/ch_editor_1
 - https://isaacphysics.org/questions/ch_editor_2
- Using the Structural Formula Editor: https://jsme-editor.github.io/dist/JSME_test.html
- Gameboard to showcase areas covered and different question types
- Applications for practice of key skills



Chemistry Landing Page

Introducing Isaac Chemistry Resources

<https://isaacphysics.org/chemistry>



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

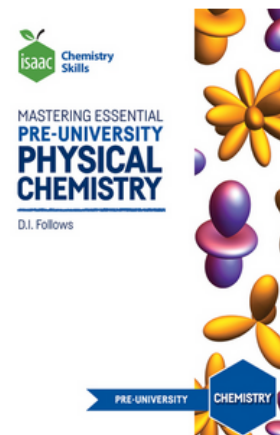
A Level Chemistry Questions

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.



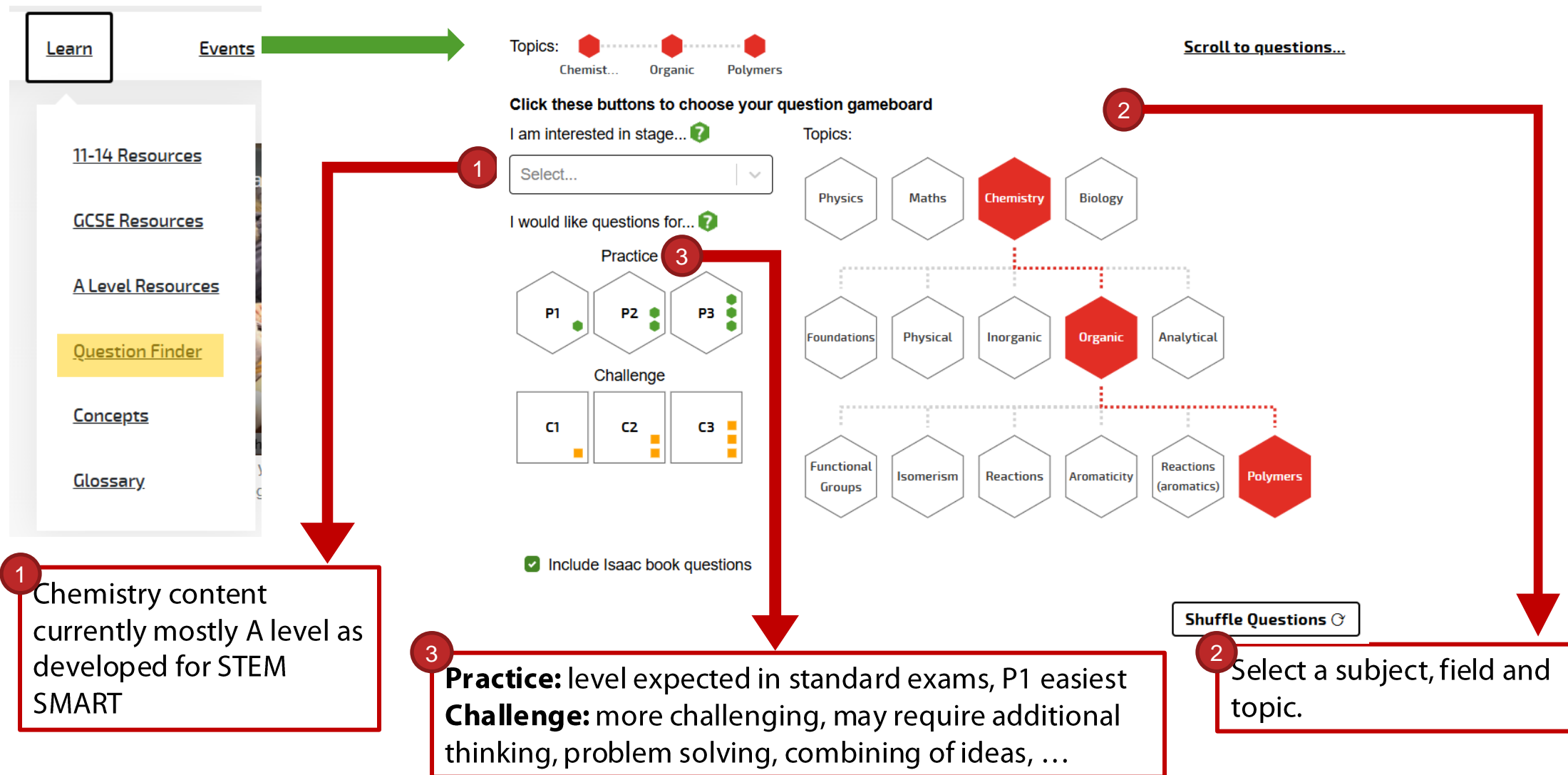


Question Finder

Use the Question Finder to find questions on a particular topic

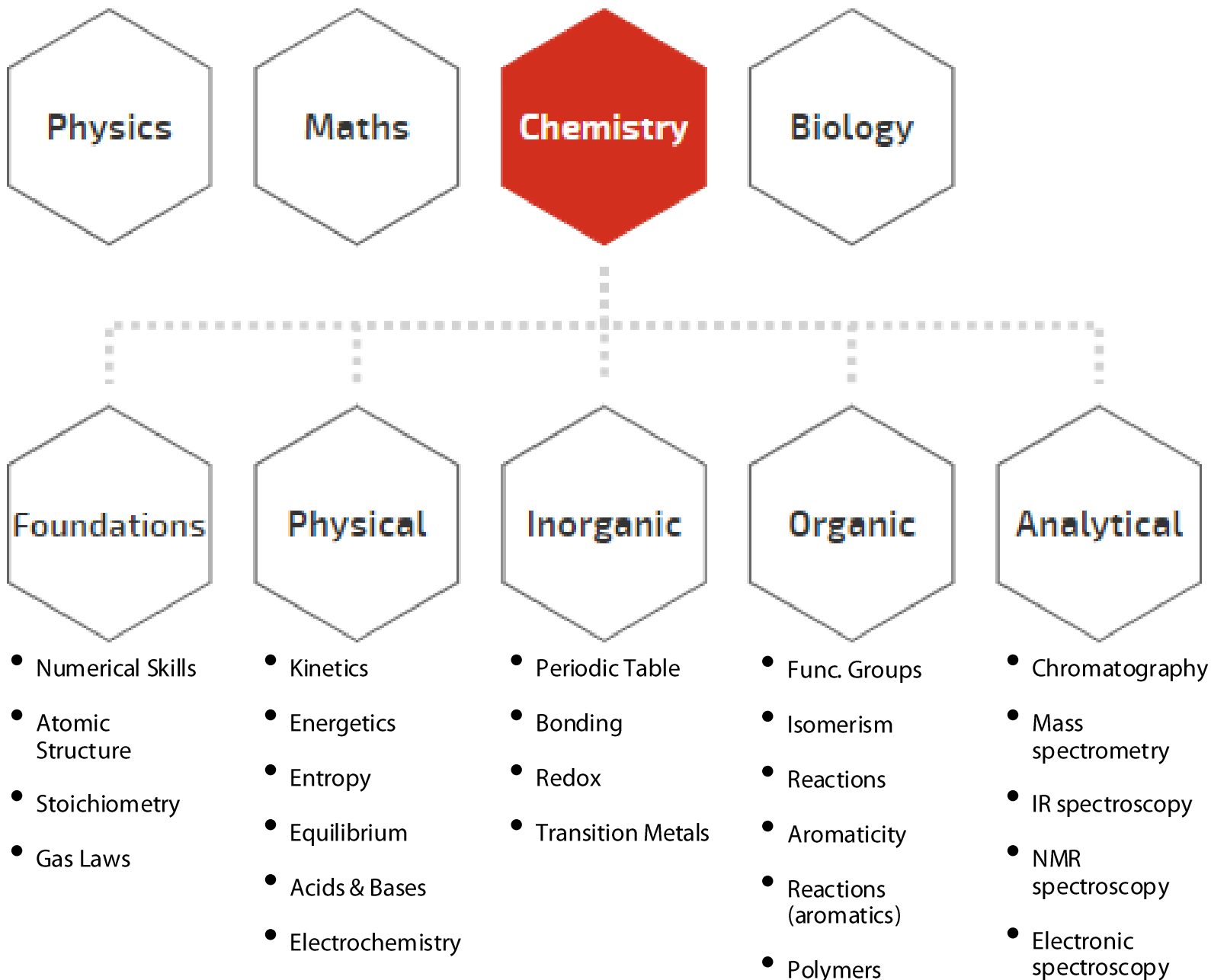
Route

- Learn/Question finder






























Question Finder





Example Chemistry Questions

Teacher Symposium 2024 KS5 Chemistry

	Periodic Table Explore the elements	>
	Balancing Equations Chemistry > Foundations > Stoichiometry	A Level    >
	Electrochemistry Introduction Chemistry > Physical > Electrochemistry	A Level    >
	Hops Chemistry > Organic > Functional Groups	A Level    >
	First Configurations Chemistry > Foundations > Atomic Structure	A Level    >
	Kevlar Chemistry > Organic > Polymers	A Level    >
	Limonene Chemistry > Organic > Reactions	A Level    >

https://isaacphysics.org/gameboards#ipts24_sat_2_ac_chem



Boards by Topic

Use this overview of gameboards to directly set work on a particular topic, or see what is available and create and set your own gameboard

Chemistry Boards by Topic

Prepared boards for use in classroom or homework



Boards for Physics













Boards for Chemistry



Boards for Biology



For Maths boards, see [Practise Maths](#).

Topic	What it contains	Link
Stoichiometry and Inorganic Chemistry		
Atomic Structure	7×P1, 1×P2;   	View board
Electron Configurations	7×P1, 1×P2;   	View board
Mass Spectrometry	4×P1, 2×P2, 1×C2;    	View board

[https://isaacphysics.org/pages/boards by topic chem](https://isaacphysics.org/pages/boards_by_topic_chem)



Chemistry Equation Editor

Help Video



<https://youtu.be/zeBHUKVeKPE>



numbers elements particles states

Type chemical elements here

1 2 3 H He Li α γ e (aq) (g) (l) \rightarrow \rightleftharpoons +

operators, fractions, other symbols

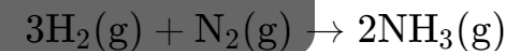
3 H₂ (g) + N₂ (g) \rightarrow 2 N H₃ (g)



Balance the following equation, and complete it to include state symbols. Use the lowest possible integer coefficients.

HIDE QUESTION





Structural Formula Editor

JSME test page

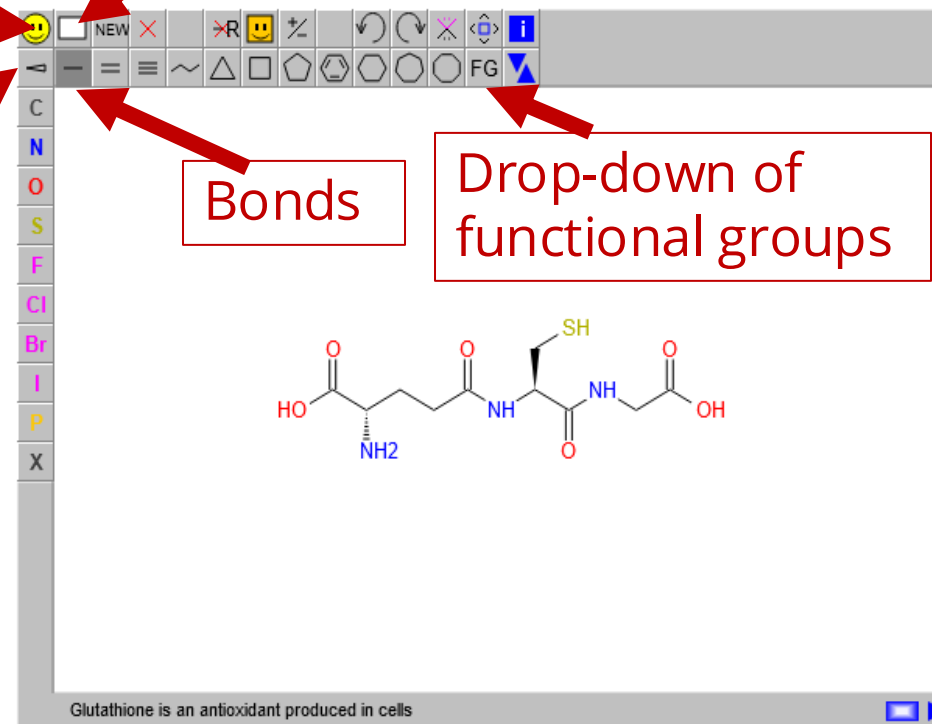
Click to show smile string
(paste into answer box)

Can show
stereoisomers

Clear display

Bonds

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

https://jsme-editor.github.io/dist/JSME_test.html



Applications for Skills Practice

Overview of Chemistry Apps



Featured below are embedded versions of the chemistry apps available for building key skills.

Buffer calculations practice



Titration calculations practice



Functional group identification



Counting NMR environments



https://isaacphysics.org/pages/chemistry_app_overview



Applications for Skills Practice

For a physics example, visit:
<https://circuit-demo-app.anvil.app/>



Buffer Calculations Practice

Created by
Andrea
Chlebikova

Generate new question

A student mixes 400 cm^3 of $0.090 \text{ mol dm}^{-3}$ methanoic acid ($\text{pK}_a = 3.75$) and 200 cm^3 of $0.012 \text{ mol dm}^{-3}$ sodium methanoate.

Calculate the **pH** of the resulting buffer solution (applying the weak acid approximation).

check

https://isaacphysics.org/pages/chemistry_app_overview



Applications for Skills Practice

For a physics example, visit:
<https://circuit-demo-app.anvil.app/>

I would like some more help

Relevant formulae: $n = cV$ $\text{p}K_{\text{a}} = -\log_{10} K_{\text{a}}$ $\text{pH} = -\log_{10} [\text{H}^+]$ $K_{\text{a}} = \frac{[\text{H}^+][\text{A}^-]}{[\text{HA}]}$

How many moles of methanoic acid have been added?

PART-CALCULATION QUESTION

mol

check

https://isaacphysics.org/pages/chemistry_app_overview



Thank you!

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