

Course Mapping Guide

International Science

About CENTURY

CENTURY is a learning platform that uses artificial intelligence to personalise learning for every learner. Our team of experienced teachers have created all of our content for English, maths, science, geography and physical education from years 2 to 11, as well as functional skills content for post-16 learners. All courses are aligned to the national curriculum and national standards.

- ✓ Learning materials and questions for primary, secondary and post-16 learners
- ✓ Tailored to each learner's skills and knowledge
- ✓ Powered by the world's leading adaptive learning platform
- ✓ Web-based learning for tablets, laptops and desktops



How does CENTURY work?



Diagnostics

Learners begin by completing diagnostics that quickly identify knowledge gaps and misconceptions, and help CENTURY recommend the best learning materials for each individual learner.

Recommended Path

This constantly adapting personalised pathway contains micro-lessons designed to address gaps in knowledge, provide stretch and challenge and promote long-term memory retention.

Leadership Dashboard

Senior and middle leaders get an overview of performance and engagement on a subject, class and learner level.

Achievements

Learners get rewarded with badges and streaks for completing micro-lessons or for using CENTURY over a certain period of time to increase their motivation and engagement.

Automated Marking

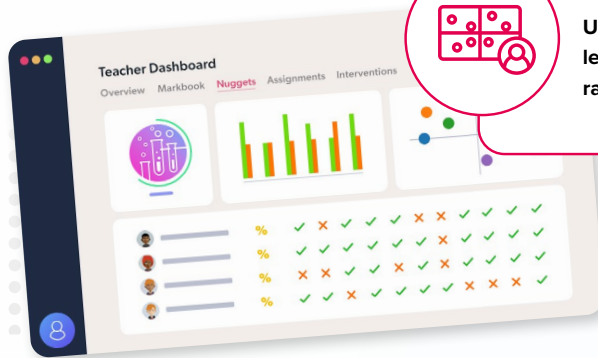
Teachers can view data in real time, to help quickly identify which learners require additional support or further stretch.

Teacher Dashboard

Use the markbook to monitor individual learners and whole-class trends with a range of dashboards.

Learner Dashboard & Guardian Portal

Learners can identify their strengths and areas for improvement. Parents and guardians can monitor their learner's progress, completed work, and see work set.



Want to see this in action?

Watch a CENTURY platform walkthrough

Science Courses

Primary

Primary Science →

KS2 Science

Year 3 Science

Year 4 Science

Year 5 Science

Year 6 Science

Primary International Baccalaureate →

Grades 2-5 Science: All Topics

Grade 2 Science

Grade 3 Science

Grade 4 Science

Grade 5 Science

Primary Cambridge →

Stage 3 Science: Cambridge

Stage 4 Science: Cambridge

Stage 5 Science: Cambridge

Stage 6 Science: Cambridge

Secondary

Science KS3 →

Science KS3

Lower Secondary Cambridge →

Stage 7 - 9 Science: Cambridge University Press Aligned

Stage 7 - 9 Science: Cambridge Framework Aligned

GCSE AQA Biology →

Biology GCSE: AQA (F & H)

GCSE AQA Chemistry →

Chemistry GCSE: AQA (F & H)

GCSE AQA Physics →

Physics GCSE: AQA (F & H)

Combined Science GCSE: AQA Synergy →

Life & Environmental Sciences (F & H)

Physical Sciences (F & H)

Combined Science GCSE: AQA Trilogy →

Biology (F & H)

Chemistry (F & H)

Physics (F & H)

ELC AQA →

Science ELC+ (Double Award): AQA

GCSE Edexcel Biology →

Biology GCSE: AQA (F & H)

GCSE Edexcel Chemistry →

Chemistry GCSE: AQA (F & H)

GCSE Edexcel Physics →

Physics GCSE: AQA (F & H)

GCSE Edexcel Combined →

Biology (F & H)

Chemistry (F & H)

Physics (F & H)

Secondary Other →

Biology/Chemistry/Physics GCSE

IGCSE Cambridge Biology →

Biology IGCSE (Core & Extended)

IGCSE Cambridge Chemistry →

Chemistry IGCSE (Core & Extended)

IGCSE Cambridge Physics →

Physics IGCSE (Core & Extended)

IGCSE Cambridge Combined →

Biology/Chemistry/Physics (Core & Extended)

IGCSE Cambridge Co-ordinated →

Biology/Chemistry/Physics (Core & Extended)

IGCSE Edexcel Biology →

Biology IGCSE

Human Biology IGCSE

IGCSE Edexcel Chemistry →

Chemistry IGCSE

IGCSE Edexcel Physics →

Physics IGCSE

IGCSE Edexcel Combined →

Science Combined Single Award IGCSE Bio/Chem/Phys

Science Combined Double Award IGCSE Bio/Chem/Phys

Science Keywords Edexcel IGCSE →

Science Keywords Edexcel IGCSE

Secondary International Baccalaureate →

Prepare for A-Level: Biology/Chemistry/Physics

Working Scientifically →

Working Scientifically

Prepare for A-Level Science →

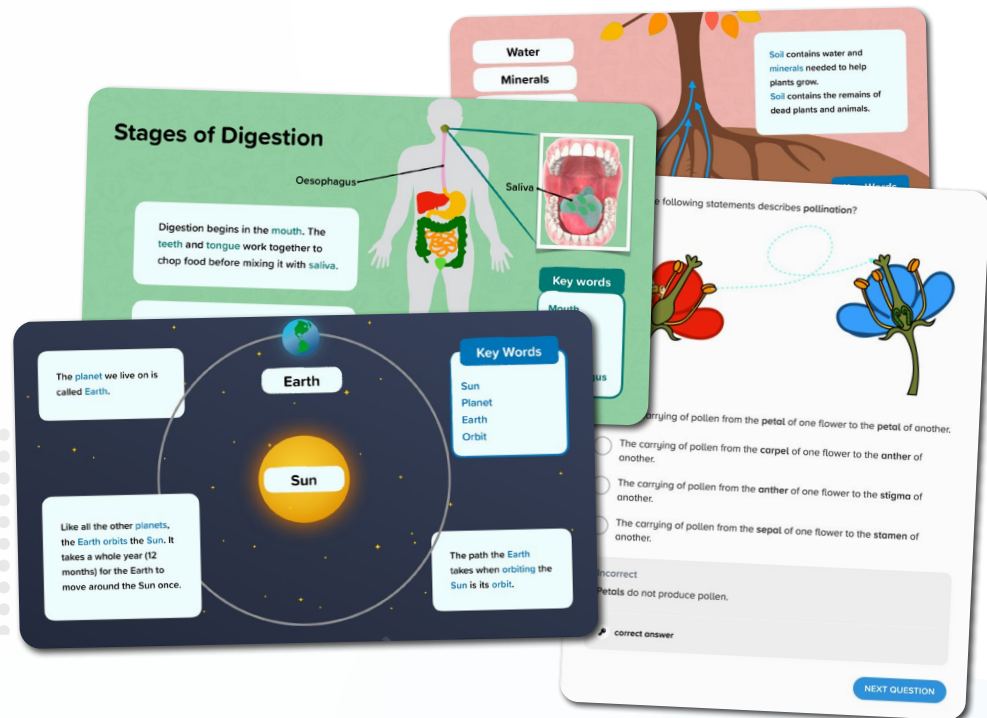
Prepare for A-Level: Biology/Chemistry/Physics

Science Courses

Primary

Our science courses are aligned to the English national curriculum for each specific year group. We also have a KS2 course that combines all of the science content from our year 3-6 courses.

There are + versions of the year 5 and KS2 courses that contain nuggets on reproduction and human life cycles.



Year 3 Science



Year 4 Science



Year 5 Science



Year 6 Science



KS2 Science

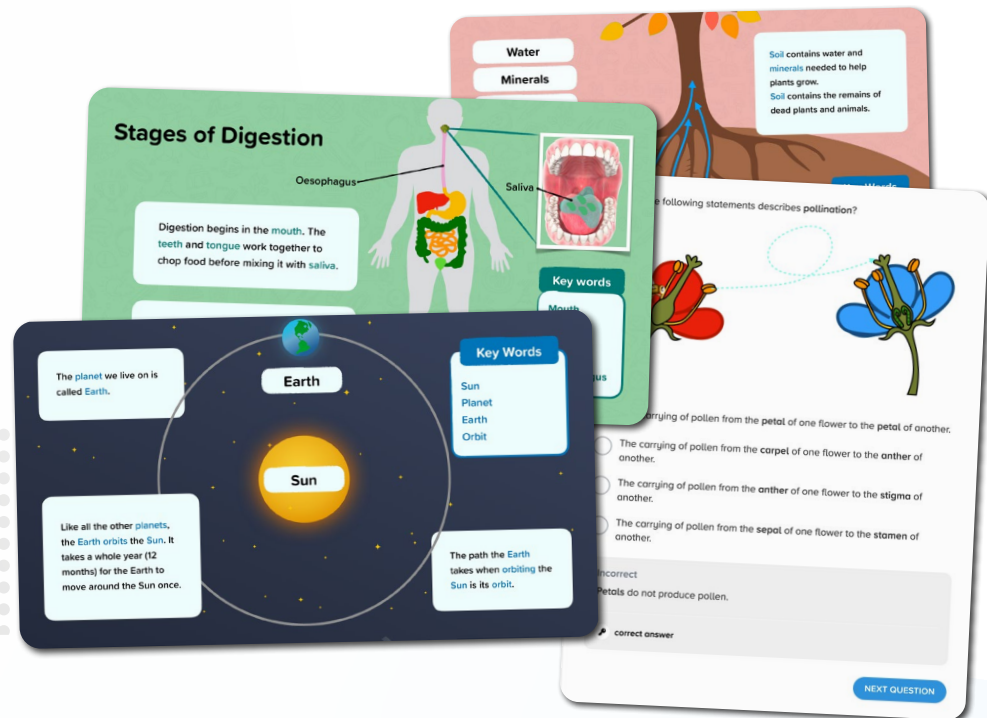
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Science Courses

Primary - International Baccalaureate

The courses are mapped to the International Baccalaureate scheme. We also have a Primary All Topics course that combines all of the science content from our grades 2-5 courses.

There are + versions of the grade 4 and All Topics courses that contain nuggets on reproduction and human life cycles.



Grades 2–5 Science: All Topics



Grade 2 Science



Grade 3 Science



Grade 4 Science



Grade 5 Science

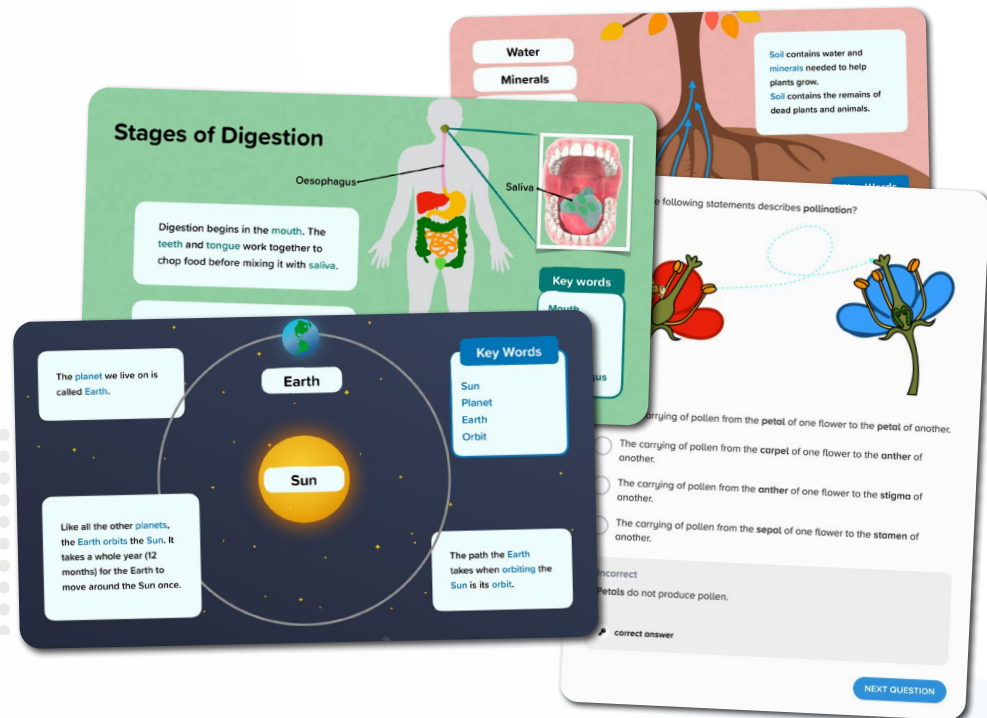
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Science Courses

Primary - Cambridge

Our Cambridge courses are aligned to the Curriculum Framework for Cambridge Primary.

There are + versions of the year 5 course that contain nuggets on reproduction and human life cycles.



Stage 3 Science: Cambridge



Stage 4 Science: Cambridge



Stage 5 Science: Cambridge



Stage 6 Science: Cambridge

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Science Courses

KS3

These maps show how our KS3 Biology, Chemistry and Physics courses are aligned to the KS3 national curriculum.



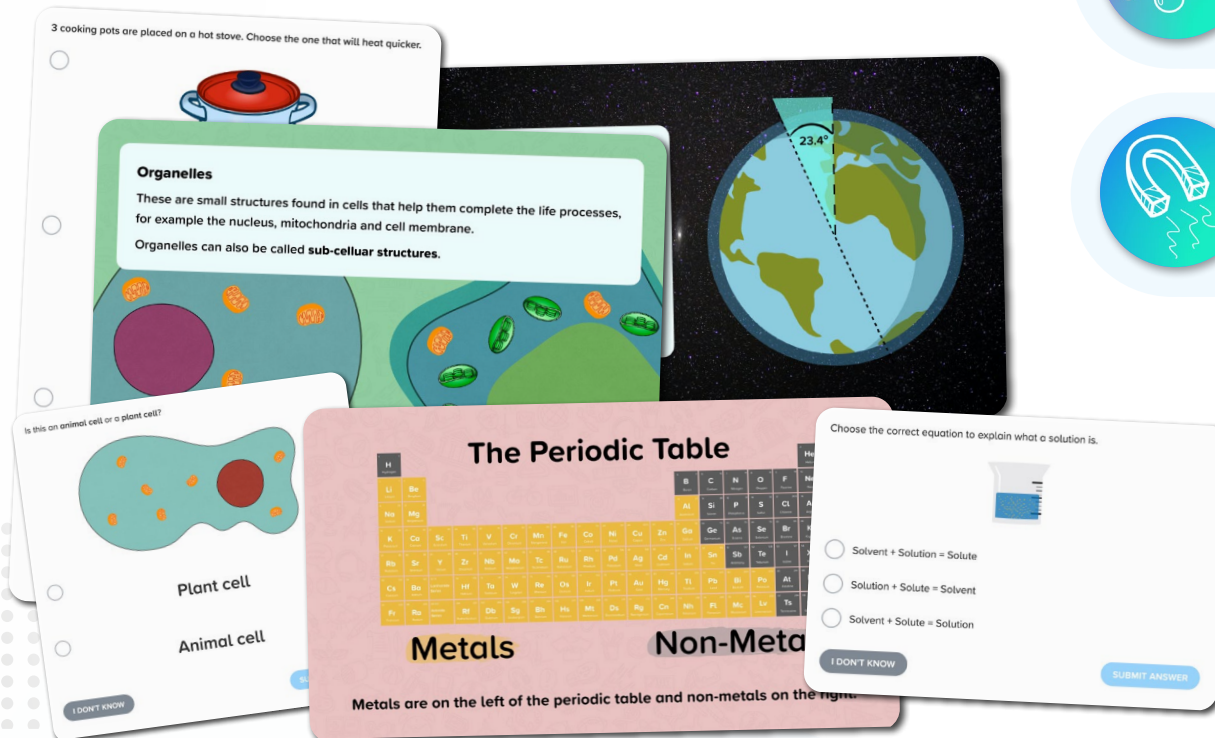
KS3 Biology



KS3 Chemistry



KS3 Physics

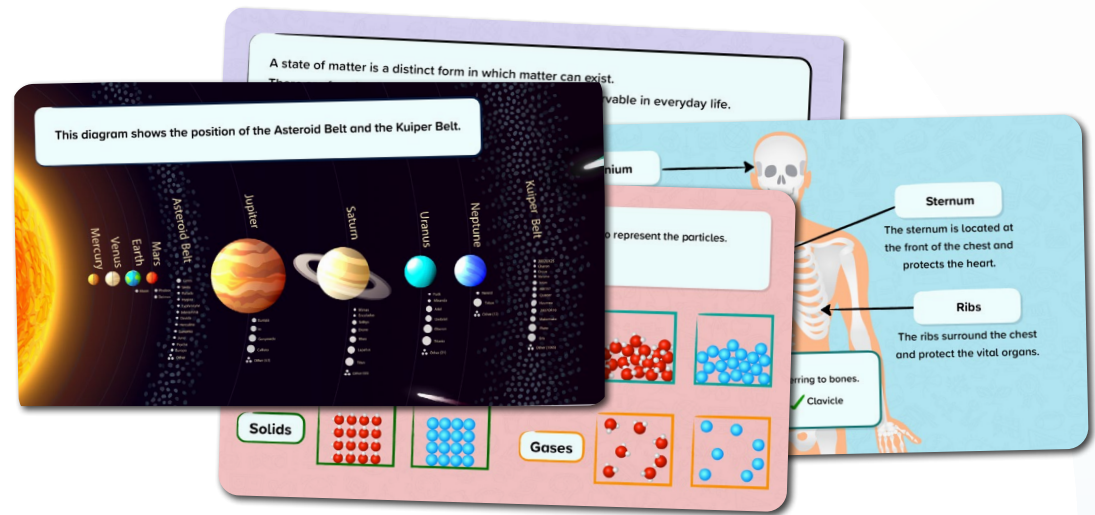


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Science Courses

Lower Secondary Cambridge

These maps show how our KS3 Biology, Chemistry and Physics courses are aligned to the Cambridge scheme.



Science – Stage 7: Cambridge University Press Aligned



Science – Stage 7: Cambridge Framework Aligned



Science – Stage 8: Cambridge University Press Aligned



Science – Stage 8: Cambridge Framework Aligned



Science – Stage 9: Cambridge University Press Aligned



Science – Stage 9: Cambridge Framework Aligned

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Science Courses

GCSE AQA Biology

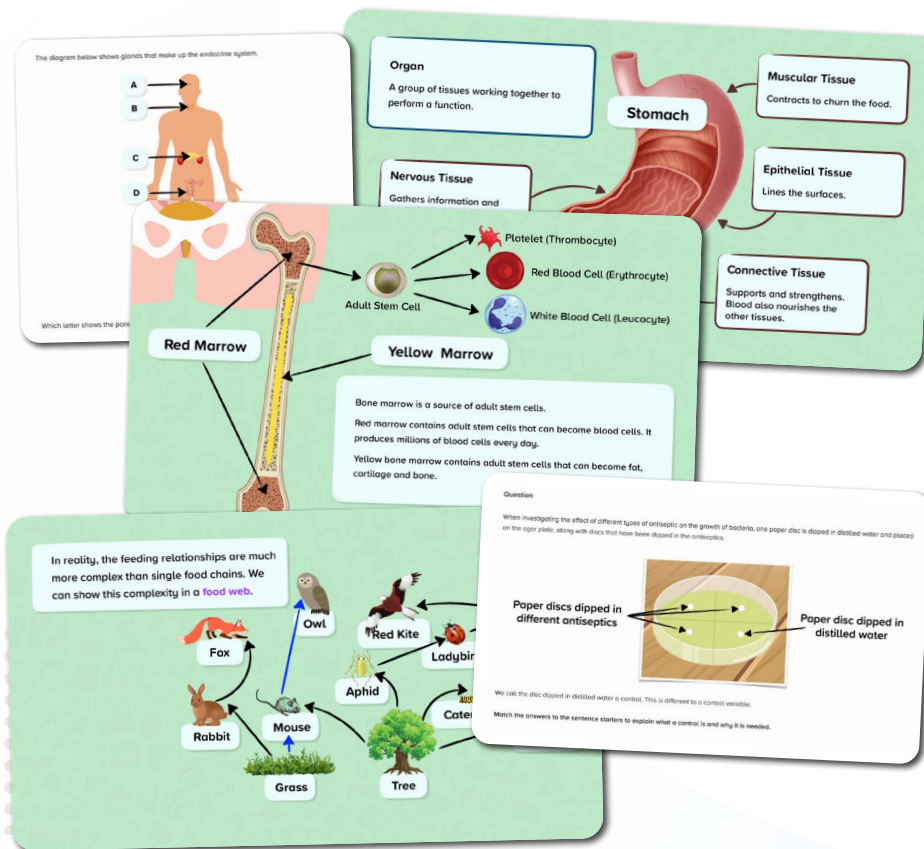
These courses were created by our experienced team of science teachers to support learners studying the GCSE AQA Biology scheme of learning.



Biology GCSE: AQA (F)



Biology GCSE: AQA (H)



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Science Courses

GCSE AQA Chemistry

These courses were created by our experienced team of science teachers to support learners studying the GCSE AQA Chemistry scheme of learning.

Alternative 1
Question
Match the formula to the diagram.

A pure substance is a substance that contains one compound or one element.

A pure substance made up of one element.

Types of Particle

Sodium Chloride

Chlorine

Electrons

Atoms

Molecules

Ions

Not all element symbols are the first letters of the element name.

26 Fe Iron	Iron	Fe
11 Na Sodium	Sodium	Na
79 Au Gold	Gold	Au

The Latin name for iron is *ferru*

The Latin name for sodium is *na*

The Latin name for gold is *au*

Alternative 1
Question
Match the correct chemical formula to the ores below.

 Haematite Fe_2O_3	 Bornite Cu_5FeS_4	 Bauxite $\text{Al}_2\text{O}_3 \cdot x\text{H}_2\text{O}$
 Chalcopyrite CuFeS_2	 Sphalerite ZnS	



Chemistry GCSE: AQA (F)



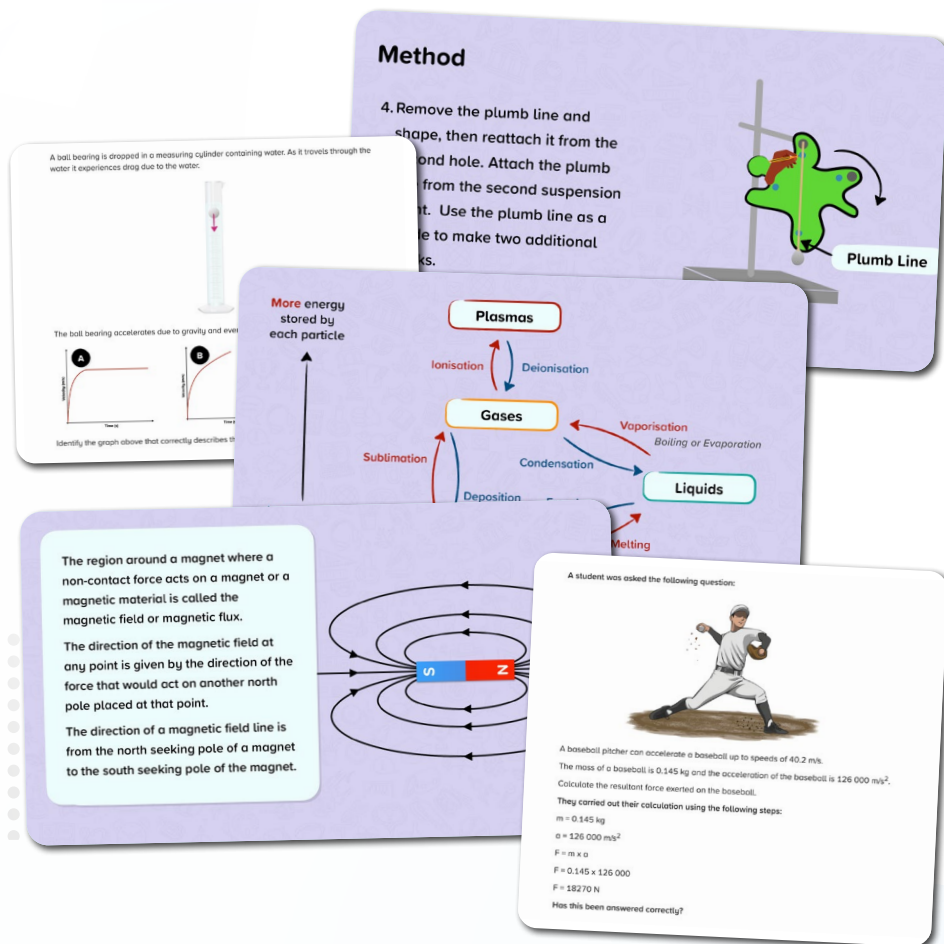
Chemistry GCSE: AQA (H)

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Science Courses

GCSE AQA Physics

These courses were created by our experienced team of science teachers to support learners studying the GCSE AQA Physics scheme of learning.



Science Physics GCSE: AQA (F)



Science Physics GCSE: AQA (H)

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Secondary Science Courses

GCSE AQA Synergy

These courses were created by our experienced team of science teachers to support learners studying the GCSE AQA Synergy scheme of learning.



Combined Science GCSE: AQA Synergy (F) – Life & Environmental Sciences

Specification: 8465



Combined Science GCSE: AQA Synergy (H) – Life & Environmental Sciences

Specification: 8465



Combined Science GCSE: AQA Synergy (F) – Physical Sciences

Specification: 8465



Combined Science GCSE: AQA Synergy (H) – Physical Sciences

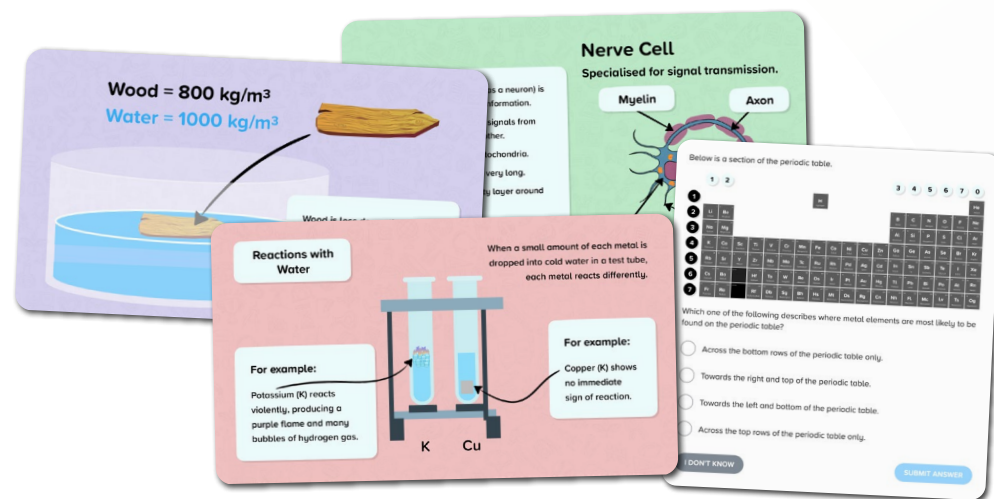
Specification: 8465

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Science Courses

GCSE AQA Trilogy

These courses were created by our experienced team of science teachers to support learners studying the GCSE AQA Synergy scheme of learning.



Combined Science GCSE: AQA Trilogy (F) – Biology

Specification: 8464



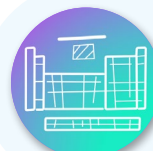
Combined Science GCSE: AQA Trilogy (H) – Biology

Specification: 8464



Combined Science GCSE: AQA Trilogy (F) – Chemistry

Specification: 8464



Combined Science GCSE: AQA Trilogy (H) – Chemistry

Specification: 8464



Combined Science GCSE: AQA Trilogy (F) – Physics

Specification: 8464



Combined Science GCSE: AQA Trilogy (H) – Physics

Specification: 8464

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Science Courses

Science Courses - ELC

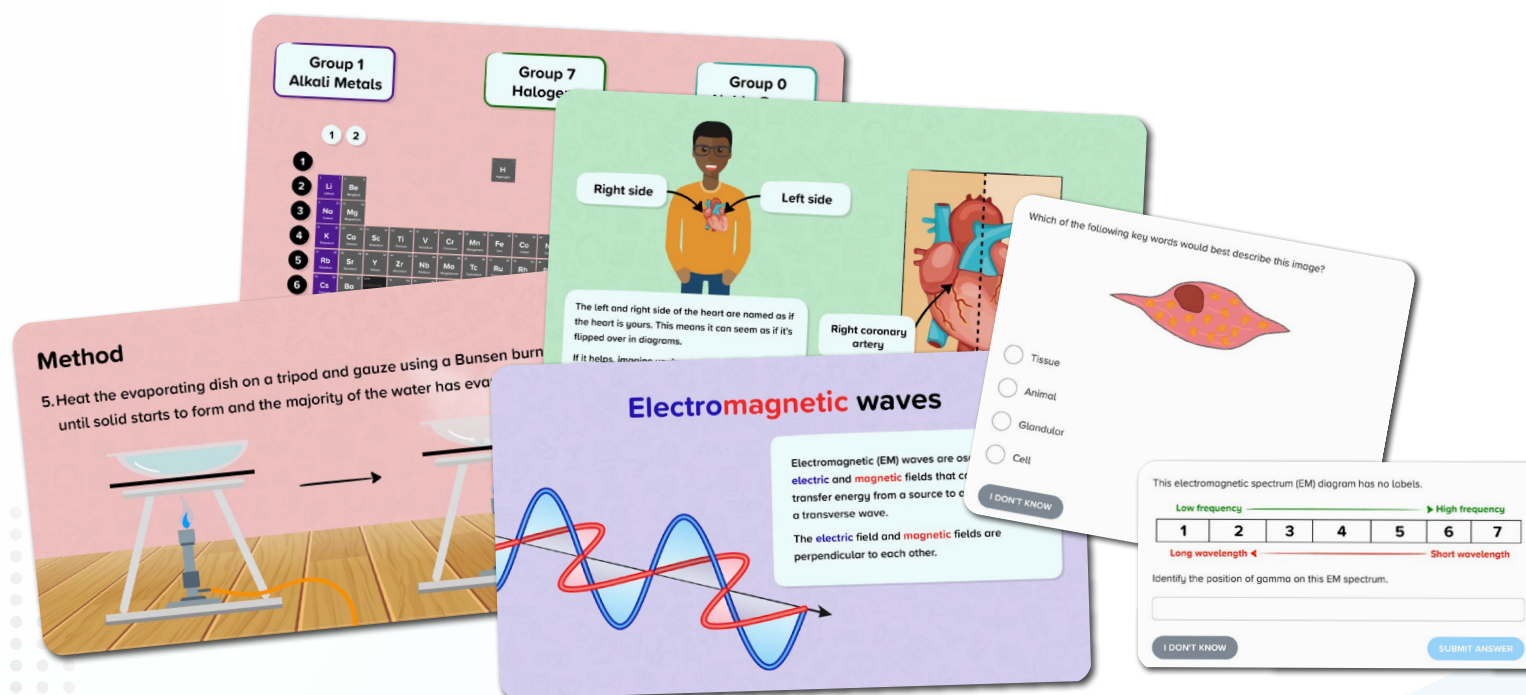
This course is mapped to AQA ELC Science, and is designed for students studying both ELC and GCSE.

AQA: 5960

QAN: 601/7522/9ng



Science ELC+ (Double Award): AQA



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Science Courses

GCSE Edexcel

These courses were created by our experienced team of science teachers to support learners studying the GCSE Edexcel Biology scheme of learning.



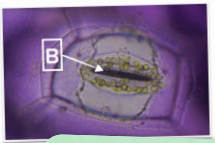
Biology GCSE: Edexcel (F)



Biology GCSE: Edexcel (H)

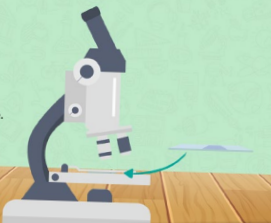
Study the diagram below.

Identify the structure labelled B.

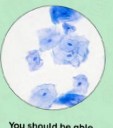


Method

7. The slide is now ready for viewing under a microscope.



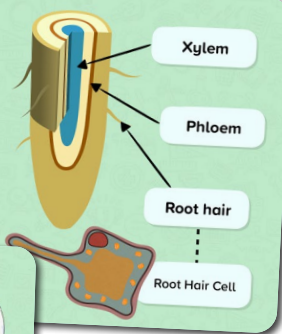
You should be able to see something like this!



Minerals are dissolved in water found in the soil.

The water and minerals are absorbed by the root hair cells.

The water and minerals are then transported around the plant in the xylem vessels.



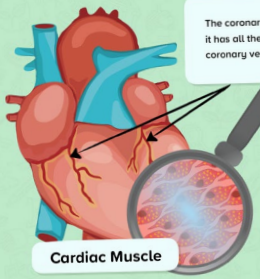
Xylem

Phloem

Root hair

Root Hair Cell

The coronary arteries carry blood into the heart muscle, making sure it has all the oxygen and glucose it needs for respiration. The coronary veins carry away waste products.



Cardiac Muscle

The walls of the heart are made up of cardiac muscle.

The cardiac muscle enables the heart to pump blood (by the contraction of different heart chambers).

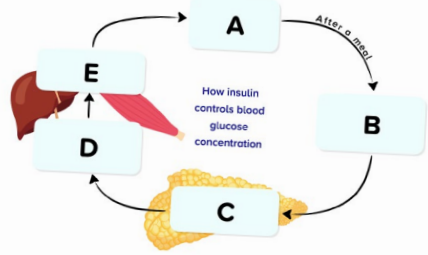
The contractions are automatic; you cannot control this movement.

This is called your pulse.

Question

The flow diagram below summarises the process involved in the control of blood glucose concentration by insulin.

The steps in the process have been replaced with letters, A to E.



How insulin controls blood glucose concentration

Drag each of the steps to the letter it corresponds to.

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Science Courses

GCSE Edexcel

These courses were created by our experienced team of science teachers to support learners studying the GCSE Edexcel Chemistry scheme of learning.



Chemistry GCSE: Edexcel (F)



Chemistry GCSE: Edexcel (H)

Thomson's Conclusions

- The cathode ray is made up of negatively charged particles.
- These particles are only 1/1840 the mass of a hydrogen atom, so these negative particles must actually be part of the atom.

Atomic particles can be found in all elements. The atom must be positively charged to balance out the negative charge of the electrons.

Question

Below are four particle diagrams. Label each of the particle diagrams with the correct state of matter.

Examples of Giant Covalent Structures

Diamond **Graphite** **Silicon Dioxide**
Silica

Question

A 24 carat sample of 18 carat gold was found to contain 18 g of pure gold and 6 g of other metals. Calculate the percentage of gold in the sample. Give your answer to 2 significant figures.

You are given in the question:

Mass of substance (gold) = 18 g
Mass of Mixture (sample) = 24 g

To find the percentage of gold in the sample:

Mass of substance (gold)	18 g	× 100	Answer 75%
Mass of Mixture (sample)	24 g	× 100	

Percentage (%) = 75% (2 sf)

Hydrochloric acid (HNO₃) and potassium hydroxide (KOH) react to form potassium nitrate (KNO₃) and water (H₂O).

Chemical Equation:

$$\text{HNO}_3 (\text{aq}) + \text{KOH} (\text{aq}) \longrightarrow \text{KNO}_3 (\text{aq}) + \text{H}_2\text{O} (\text{l})$$

Use the chemical equation to work out how many moles of hydrochloric acid will be needed.

Moles of HNO₃ needed = _____ moles

Type your answer as a number, without a unit.

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Science Courses

GCSE Edexcel

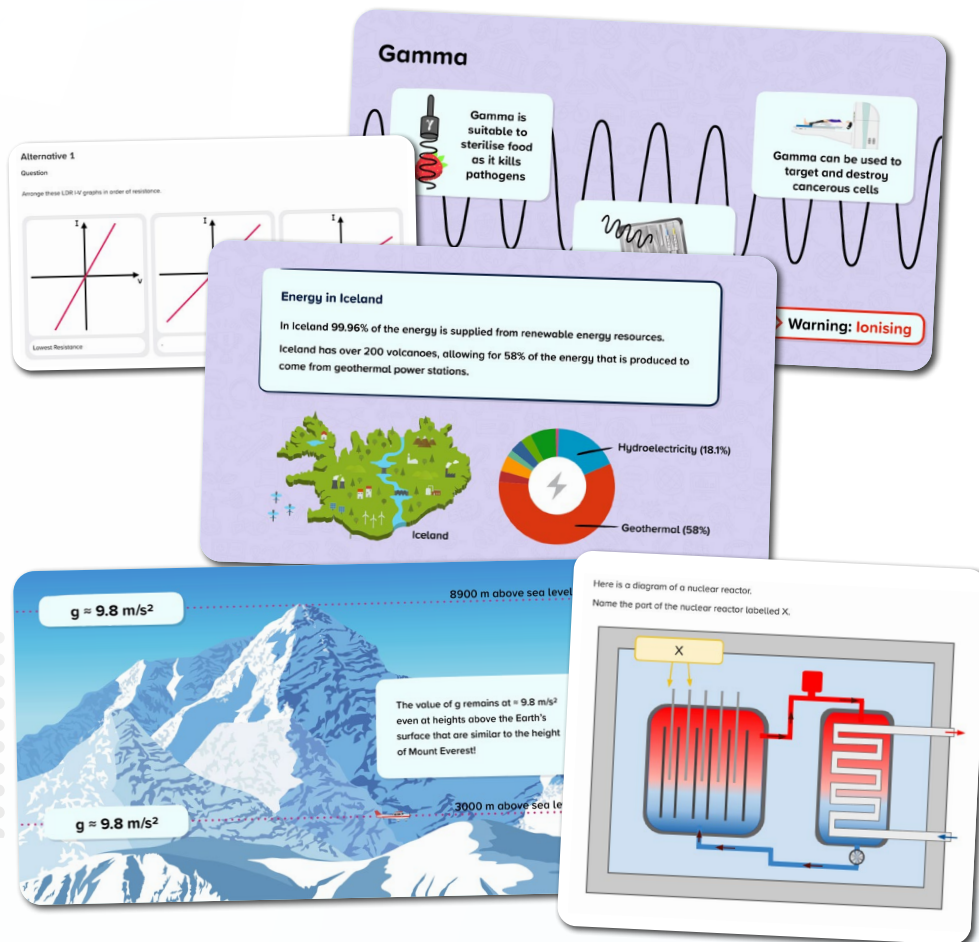
These courses were created by our experienced team of science teachers to support learners studying the GCSE Edexcel Physics scheme of learning.



Physics GCSE: Edexcel (F)



Physics GCSE: Edexcel (H)

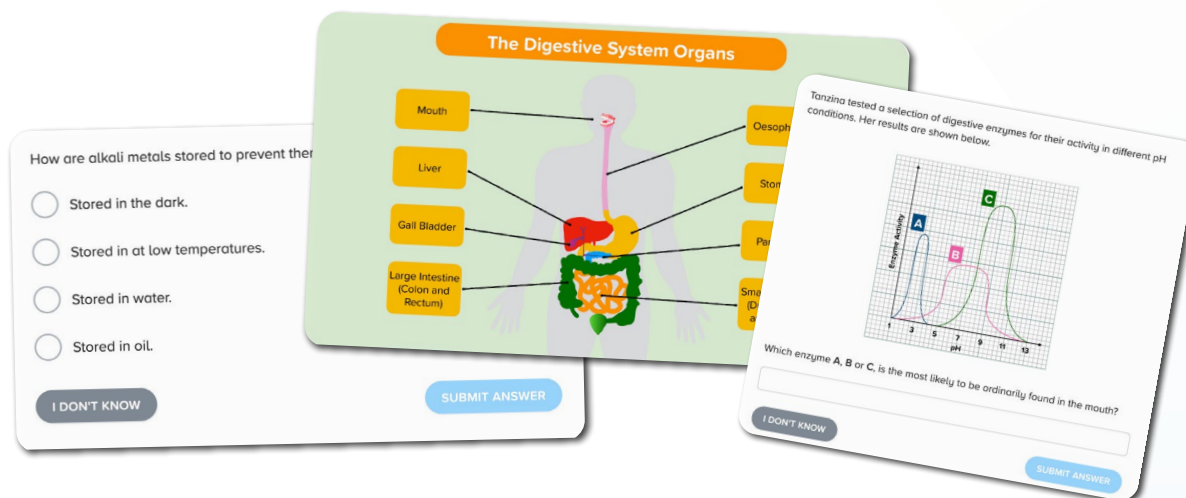


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Science Courses

GCSE Edexcel

These courses were created by our experienced team of science teachers to support learners studying the GCSE Edexcel Combined scheme of learning.



**Combined Science GCSE:
Edexcel – Biology (F)**



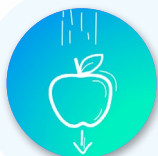
**Combined Science GCSE:
Edexcel – Biology (H)**



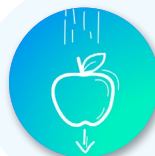
**Combined Science GCSE:
Edexcel – Chemistry (F)**



**Combined Science GCSE:
Edexcel – Chemistry (H)**



**Combined Science GCSE:
Edexcel – Physics (F)**



**Combined Science GCSE:
Edexcel – Physics (H)**

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Science Courses

Secondary Other

These courses were created by our experienced team of science teachers.



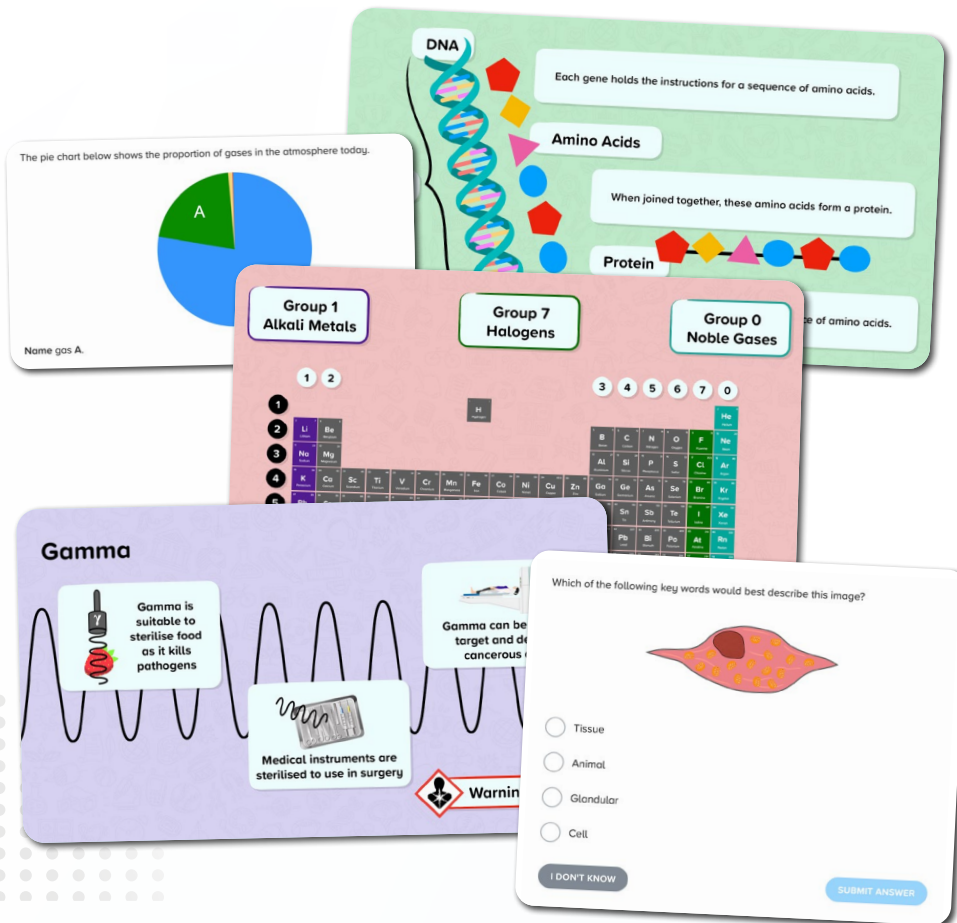
Biology GCSE



Chemistry GCSE



Physics GCSE

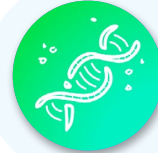


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Science Courses

IGCSE Cambridge Biology

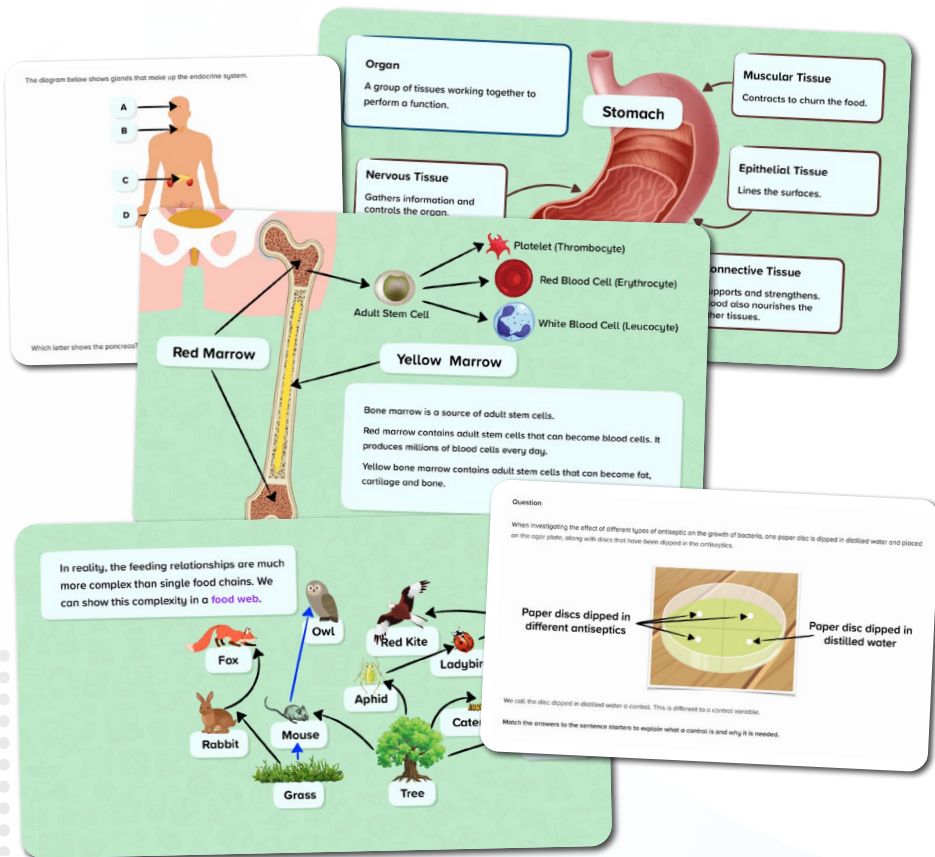
These courses were created by our experienced team of science teachers to support learners studying the IGCSE Cambridge Biology scheme of learning.



Biology IGCSE (Core)



Biology IGCSE (Extended)



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Science Courses

IGCSE Cambridge Chemistry

These courses were created by our experienced team of science teachers to support learners studying the IGCSE Cambridge Chemistry scheme of learning.



Chemistry IGCSE (Core)



Chemistry IGCSE (Extended)

Thomson's Conclusions

- The cathode ray is made up of negatively charged particles.
- These particles are only 1/1840 the mass of a hydrogen atom, so these negative particles must actually be part of the atom.

Atomic particles can be found in all elements. The atom must be positively charged to balance out the negative charge of the electrons.

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Below are four particle diagrams. Label each of the particle diagrams with the correct state of matter.

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Silica

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You are given in the question:

Mass of substance (gold) = 18 g
Mass of Mixture (sample) = 24 g

To find the percentage of gold in the sample:

Mass of substance (gold)	18 g
Mass of Mixture (sample)	24 g
Percentage of gold	75%

Answer 75%

Hydrochloric acid (HNO₃) and potassium hydroxide (KOH) react to form potassium nitrate (KNO₃) and water (H₂O).

Chemical Equation:

$$\text{HNO}_3 (\text{aq}) + \text{KOH} (\text{aq}) \longrightarrow \text{KNO}_3 (\text{aq}) + \text{H}_2\text{O} (\text{l})$$

Use the chemical equation to work out how many moles of hydrochloric acid will be needed.

Moles of HNO₃ needed = _____ moles

Type your answer as a number, without a unit.

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Science Courses

IGCSE Cambridge Physics

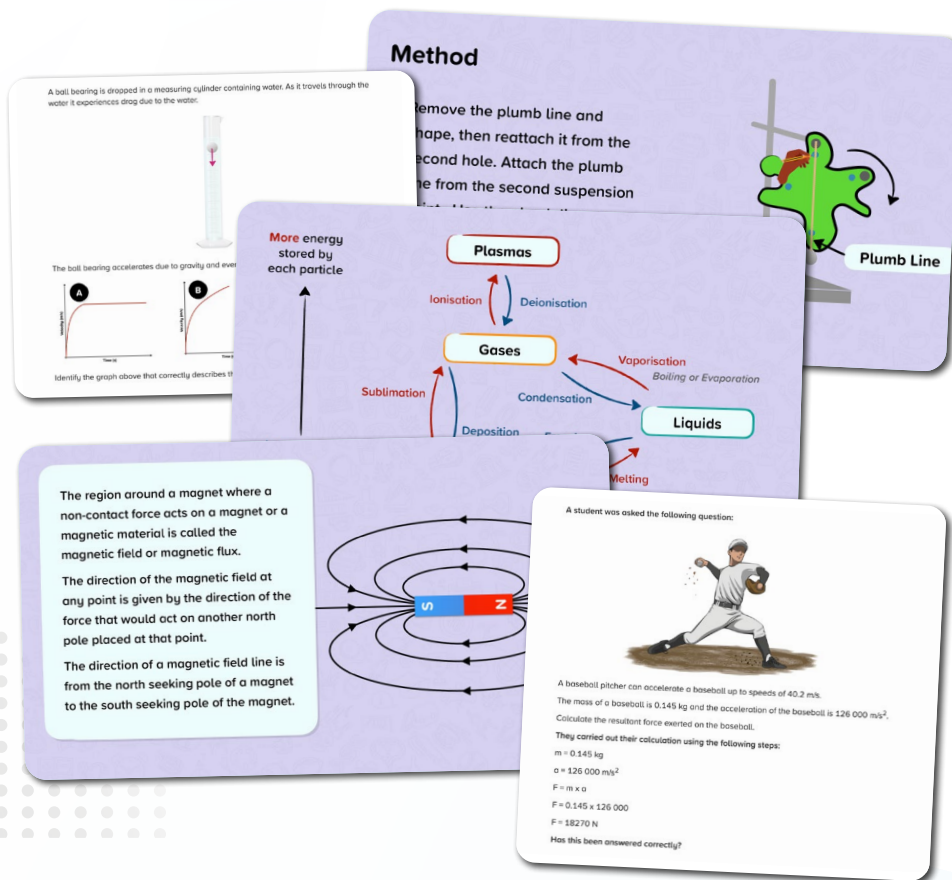
These courses were created by our experienced team of science teachers to support learners studying the IGCSE Cambridge Physics scheme of learning.



Physics IGCSE (Core)



Physics IGCSE (Extended)

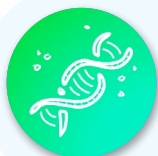
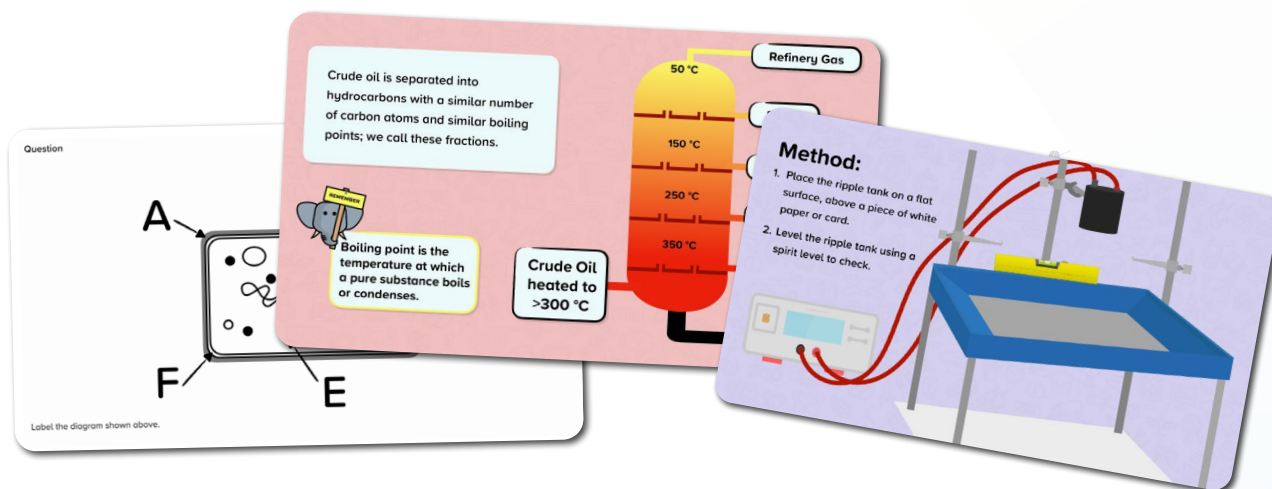


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Science Courses

IGCSE Cambridge Combined

These courses were created by our experienced team of science teachers to support learners studying the IGCSE Cambridge Combined scheme of learning.



**Combined Science IGCSE –
Biology (Core)**



**Combined Science IGCSE –
Biology (Extended)**



**Combined Science IGCSE –
Chemistry (Core)**



**Combined Science IGCSE –
Chemistry (Extended)**



**Combined Science IGCSE –
Physics (Core)**



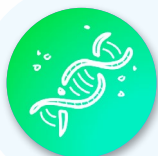
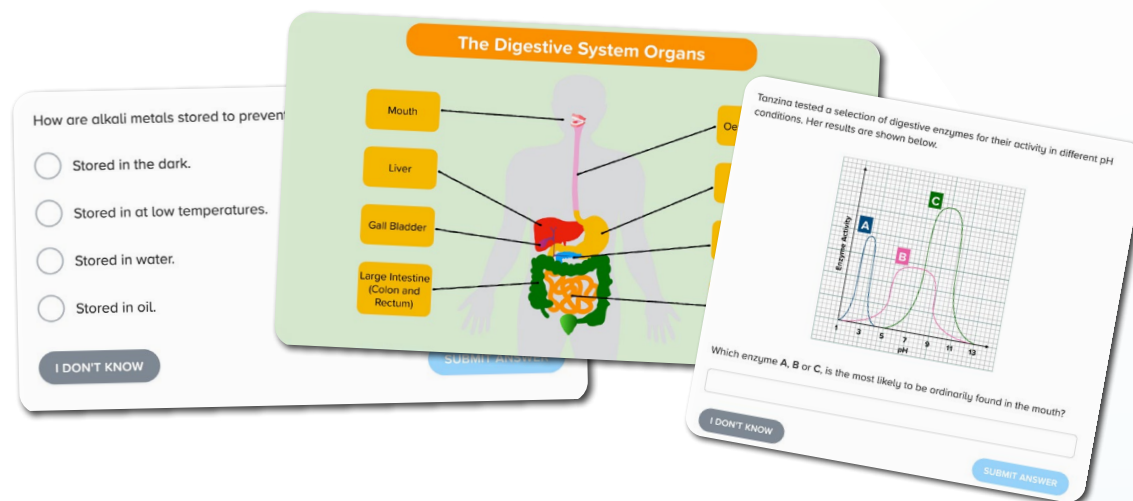
**Combined Science IGCSE –
Physics (Extended)**

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Science Courses

IGCSE Cambridge Co-ordinated

These courses were created by our experienced team of science teachers to support learners studying the IGCSE Cambridge Co-ordinated scheme of learning.



**Co-ordinated Science IGCSE –
Biology (Core)**



**Co-ordinated Science IGCSE –
Biology (Extended)**



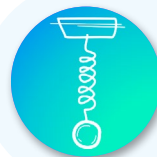
**Co-ordinated Science IGCSE –
Chemistry (Core)**



**Co-ordinated Science IGCSE –
Chemistry (Extended)**



**Co-ordinated Science IGCSE –
Physics (Core)**



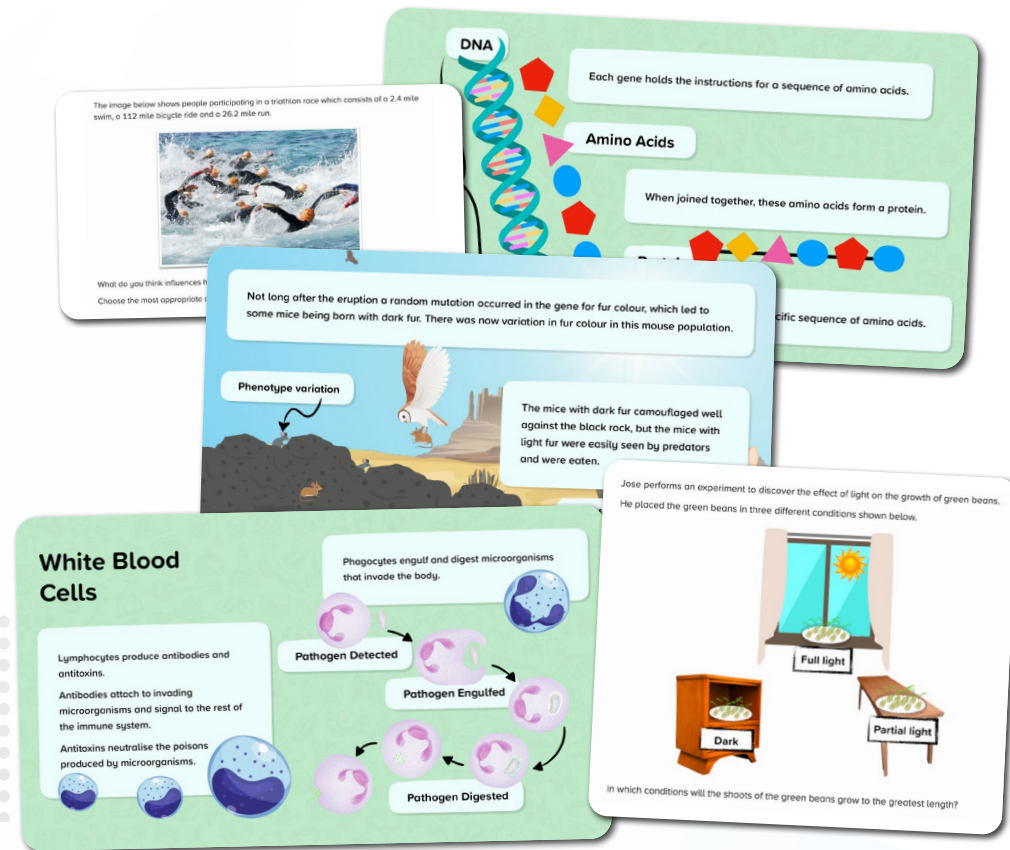
**Co-ordinated Science IGCSE –
Physics (Extended)**

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Science Courses

IGCSE Edexcel Biology

These courses were created by our experienced team of science teachers to support learners studying the IGCSE Edexcel Biology scheme of learning.



Biology IGCSE



Human Biology IGCSE

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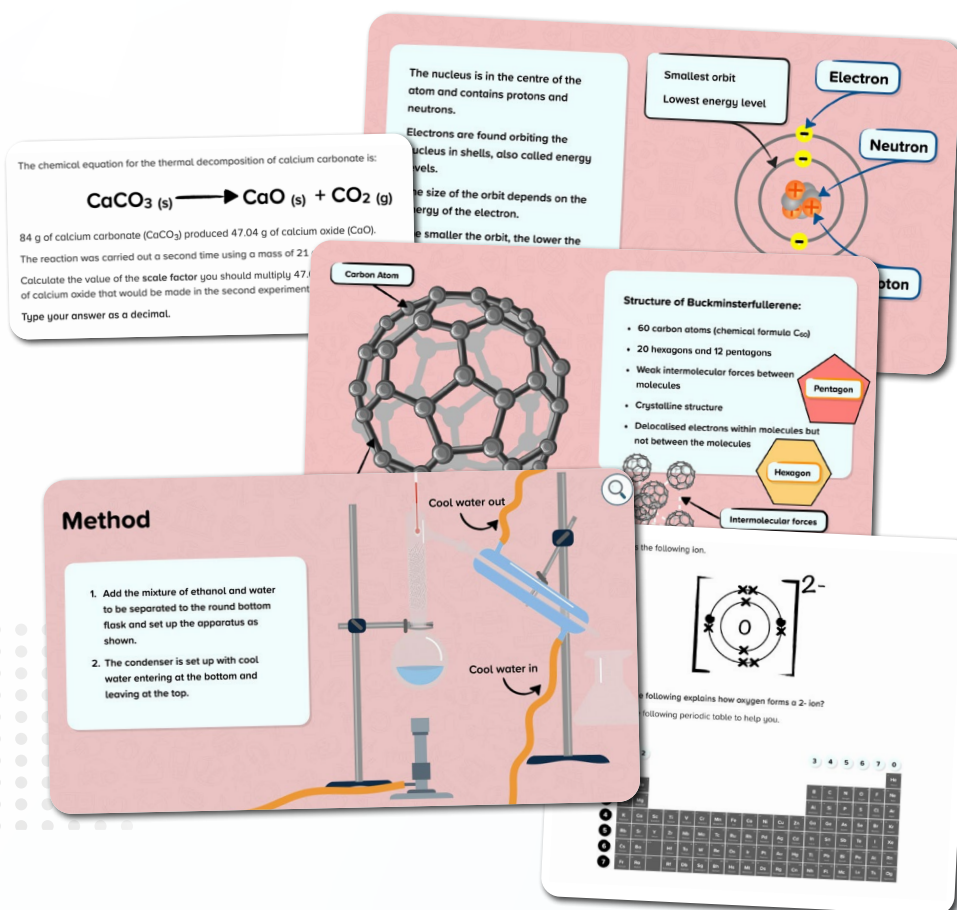
Science Courses

IGCSE Edexcel Chemistry

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Chemistry IGCSE



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Science Courses

IGCSE Edexcel Physics

These courses were created by our experienced team of science teachers to support learners studying the IGCSE Edexcel Physics scheme of learning.



Physics IGCSE

A fighter jet accelerates uniformly at 10 m/s^2 to a velocity of 610 m/s . During this period of acceleration, the aircraft travels 15 km . Calculate the initial velocity of the aircraft.
Give your answer to 1 decimal place.

$u =$ _____

Air Resistance

The sky diver falls through the air due to the force of weight.
As air is a fluid, the sky diver experiences drag force in the opposite direction to the sky diver's motion.

Medical Diagnosis

Medical Treatments or Diagnosis

Radio-waves, Microwaves, Infrared, Visible light, Ultraviolet, X-rays, Gamma

Warning: Ionising

Short wavelength

Boiler, Turbine, Generator, Bio-fuels

How does a bio-fuel power station work?

1. Biofuels can be burnt to heat water and turn it into steam.
2. The steam is extracted and used to turn a turbine.
3. The turbines turn the generator to produce electricity.

The motion of a galloping horse is represented using a velocity-time graph.

Velocity (m/s)

Time (s)

The acceleration of the horse at 9 s into the journey is to be found. To find the acceleration of the horse, a tangent is drawn at 9 s . Two points are identified on the tangent and Δx and Δt are labelled.

Use the graph above to calculate the acceleration of the cyclist at 9 s .
Do not include a unit in your answer.

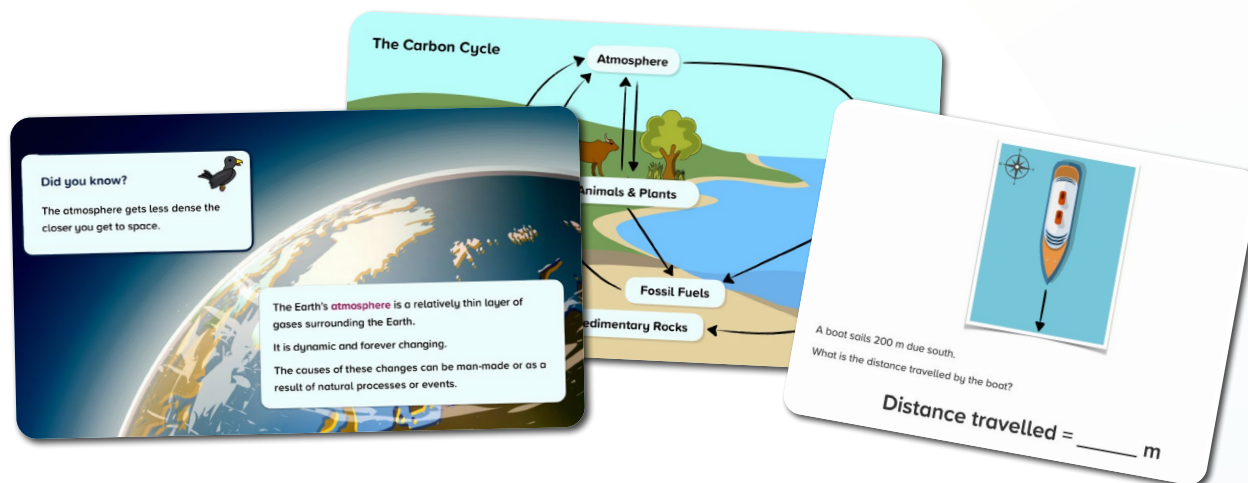
Acceleration = _____ m/s^2

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Science Courses

IGCSE Edexcel Combined

These courses were created by our experienced team of science teachers to support learners studying the IGCSE Edexcel Combined schemes of learning.



**Science Combined Single Award IGCSE
– Biology**



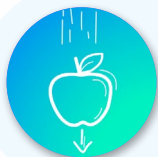
**Science Combined Double Award IGCSE
– Biology**



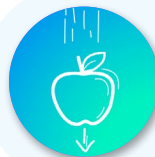
**Science Combined Single Award IGCSE
– Chemistry**



**Science Combined Double Award IGCSE
– Chemistry**



**Science Combined Single Award IGCSE
– Physics**



**Science Combined Double Award IGCSE
– Physics**

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Science Courses

Science Keywords Edexcel IGCSE

This course contains assessments from each topic in the IGCSE Edexcel specification to test the spelling and definition of key words.



Science Keywords Edexcel IGCSE

Keyword Quiz

Quiz yourself on the
This helps develop
allowing you to write

What do we call a solid conductive material through which electricity can flow?

- ☐ Electrolyte
- ☐ Cathode
- ☐ Electrode
- ☐ Anode

SUBMIT ANSWER

Herbivores that consume producers at trophic level 2 of a food chain are called _____

- ☐ Tertiary consumers
- ☐ Producers
- ☐ Secondary consumers
- ☐ Primary consumers

SUBMIT ANSWER

The angle of incidence beyond which total internal reflection occurs is known as the _____

- ☐ refractive index
- ☐ angle of reflection
- ☐ angle of refraction
- ☐ critical angle

I DON'T KNOW

SUBMIT ANSWER

What is complete combustion?

- ☐ A reaction that breaks down large hydrocarbons into smaller molecules.
- ☐ Combustion carried out in sufficient oxygen, producing only water and carbon dioxide.
- ☐ Combustion with insufficient oxygen, producing harmful substances.
- ☐ A reaction that joins monomers to form polymers.

I DON'T KNOW

SUBMIT ANSWER

Keyword Quiz



Quiz yourself on the scientific keywords for this topic.

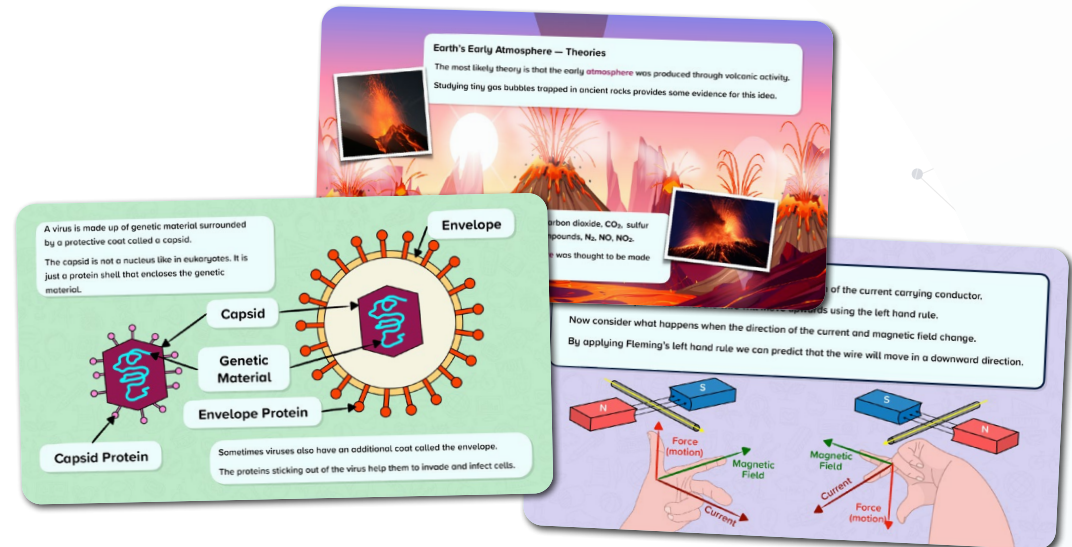
This helps develop your scientific literacy and oracy skills,
allowing you to write and speak like a scientist.

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Science Courses

Secondary - International Baccalaureate

These courses are mapped to the International Baccalaureate MYP scheme.



Science MYP: Biology



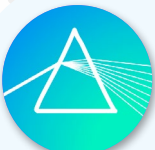
Science GCSE: Biology



Science MYP: Chemistry



Science GCSE: Chemistry



Science MYP: Physics



Science GCSE: Physics

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Science Courses

Working Scientifically

This course includes scientific skills and ideas that flow through all scientific disciplines. It is suitable for study alongside secondary science subjects.



Working Scientifically

Card 1: Bunsen burner parts and safety

Barrel or Chimney
Collar
Air Hole
Gas Inlet

It is important to know the names of the parts on the Bunsen burner. This will make it easier to safely operate it.

The barrel or chimney can get very hot during use, so the burner should be carried by the base to avoid burns.

The collar controls the size of the air hole, this is how the size & temperature of the flame can be regulated.

Card 2: Precision and Accuracy in Archery

Not Accurate Not Precise
Not Accurate Precise
Accurate Not Precise
Accurate Precise

Consider an archery player:
The arrows are considered to be **precise** if they are close together.
The arrows are considered to be **accurate** if they are near the centre of the bullseye.
Like the results in an experiment, can be **precise** without being **accurate**.

Card 3: Photosynthesis Investigation

Let's take a look at the classic investigation into the effect of light intensity on the rate of photosynthesis.

00:03:00

70 80 90 100 cm

Card 4: Neutralisation Experiment

Medium

Acid
Base

Salt + Water

Hazard: Using dilute hydrochloric acid in a neutralisation experiment.

Risk: **Medium** – The acid is mildly corrosive and could cause skin or eye irritation if spilled. The risk is higher if protective equipment is not used.

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Science Courses

Prepare for A-Level Science

These courses covers the key concepts and foundational knowledge to aid transition and preparation to study science at A-level.



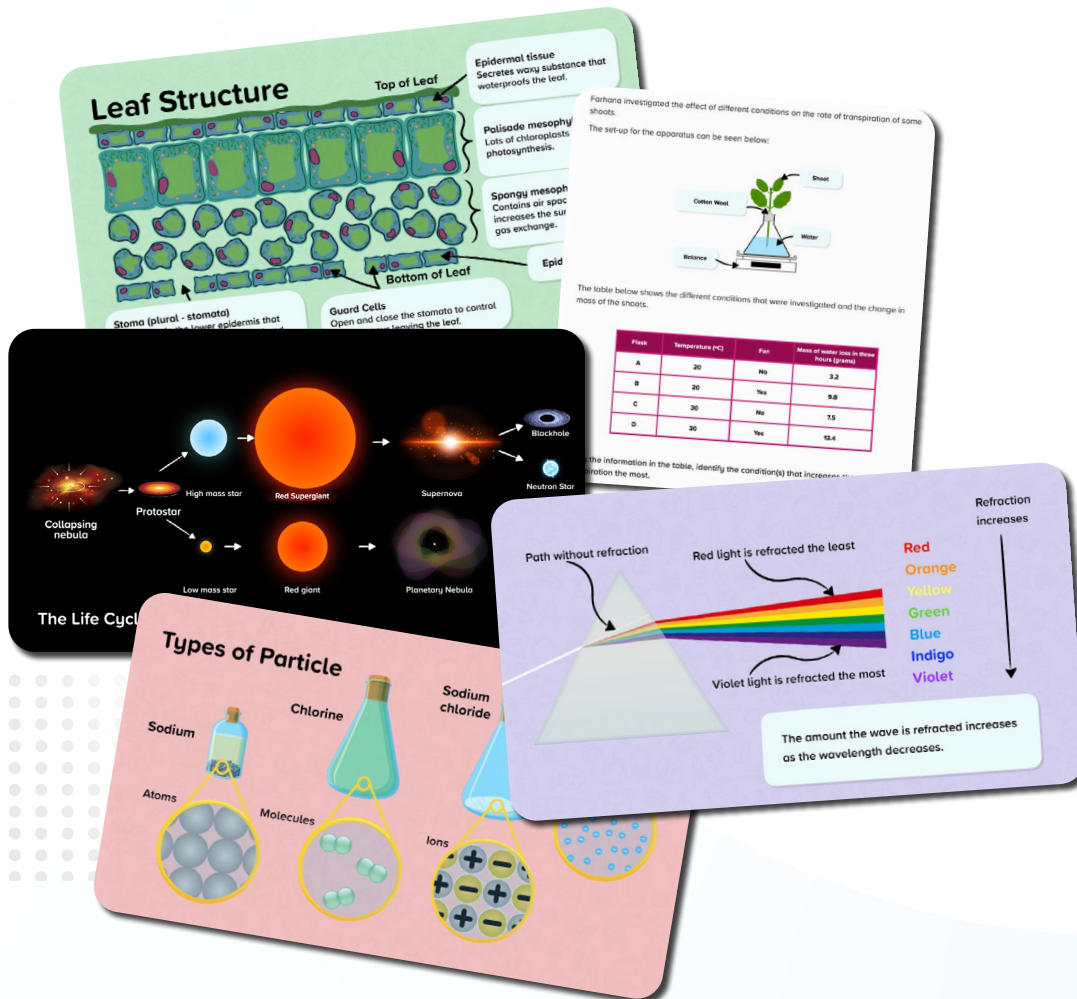
Prepare for A-Level: Biology



Prepare for A-Level: Chemistry

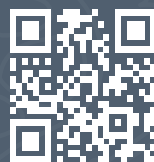


Prepare for A-Level: Physics



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Questions?
Email support@century.tech



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