

Course Mapping Guide

Science - Cambridge IGCSE

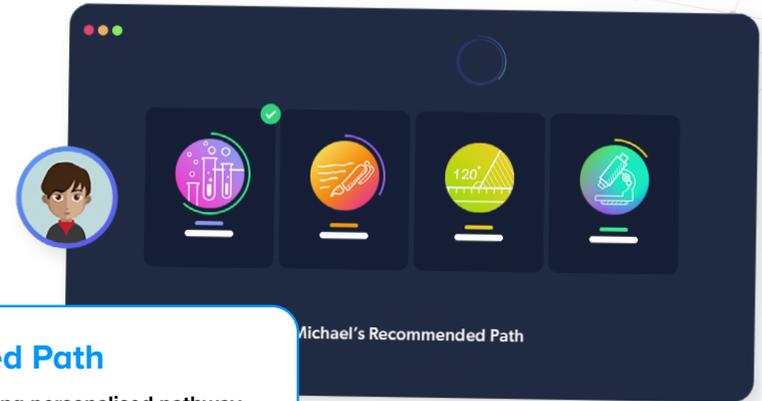
About CENTURY

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 and science 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 using CENTURY over a certain period of time to increase their motivation and engagement.

Automated Marking

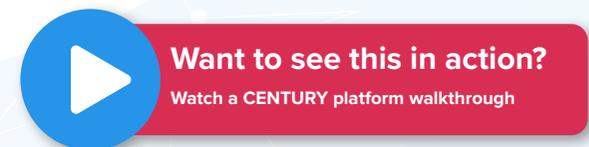
Teachers can view data in real time, to help you quickly identify which learners require additional support or further stretch.

Teacher Dashboard

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

Learner Dashboard & Guardian Portal

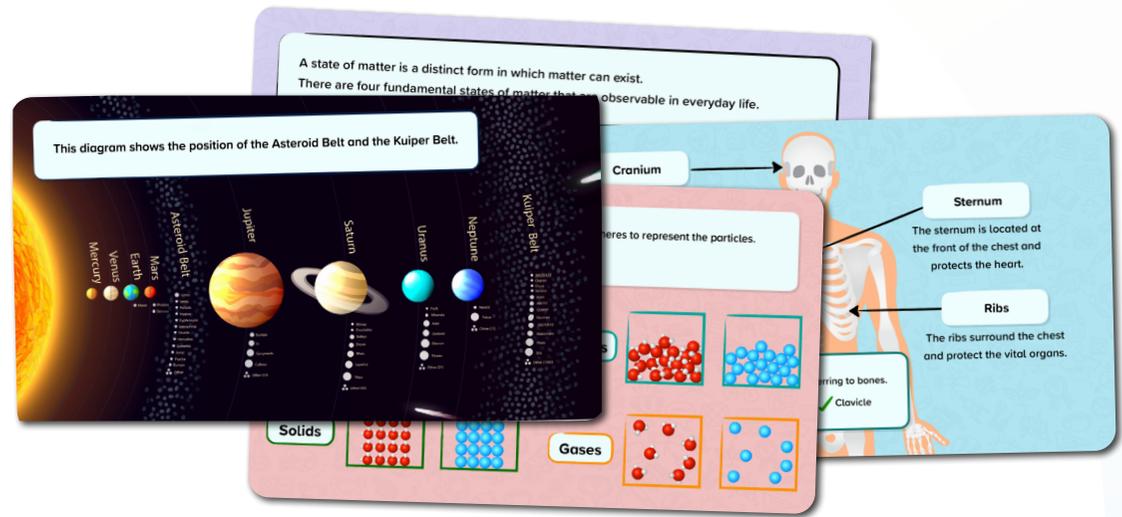
Learners can identify their strengths and areas for improvement. Parents and guardians can monitor their learner's progress, completed work, and see work set.



Science Courses

KS3

This map show how our KS3 Biology, Chemistry and Physics courses are aligned to the Cambridge scheme. You can edit each of these courses to match your KS3 schemes of work.



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

IGCSE Cambridge

These courses are mapped to the IGCSE Cambridge scheme.



Science Biology IGCSE (Core)



Science Biology IGCSE (Extended)

The diagram below shows glands that make up the endocrine system.

A B C D

Which letter shows the pancreas?

Organ
A group of tissues working together to perform a function.

Stomach

Muscular Tissue
Contracts to churn the food.

Epithelial Tissue
Lines the surfaces.

Nervous Tissue
Gathers information and controls the organ.

Connective Tissue
Supports and strengthens. Blood also nourishes the other tissues.

Red Marrow

Yellow Marrow

Adult Stem Cell

Platelet (Thrombocyte)
Red Blood Cell (Erythrocyte)
White Blood Cell (Leucocyte)

Bone marrow is a source of adult stem cells.
Red marrow contains adult stem cells that can become blood cells. It produces millions of blood cells every day.
Yellow bone marrow contains adult stem cells that can become fat, cartilage and bone.

In reality, the feeding relationships are much more complex than single food chains. We can show this complexity in a **food web**.

Question

When investigating the effect of different types of antiseptic on the growth of bacteria, one paper disc is dipped in distilled water and placed on the agar plate, along with discs that have been dipped in the antiseptics.

Paper discs dipped in different antiseptics

Paper disc dipped in distilled water

We call the disc dipped in distilled water a control. This is different to a control variable.
Match the answers to the sentence starters to explain what a control is and why it is needed.

Food Web: Grass and Tree are eaten by Rabbit and Mouse. Mouse is eaten by Owl. Rabbit is eaten by Fox. Tree is eaten by Aphid. Aphid is eaten by Ladybird. Ladybird is eaten by Red Kite. Caterpillar is eaten by Red Kite.

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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	
Mass of Mixture (sample)	24 g	÷	
Percentage (%)	75%		

Answer 75%

... acid (HNO₃) and potassium

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.



Science Chemistry IGCSE (Core)



Science Chemistry IGCSE (Extended)

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Science Physics IGCSE (Core)



Science Physics IGCSE (Extended)

Method

4. Remove the plumb line and shape, then reattach it from the second hole. Attach the plumb line from the second suspension point. Use the plumb line as a guide to make two additional holes.

Plumb Line

A ball bearing is dropped in a measuring cylinder containing water. As it travels through the water it experiences drag due to the water.

The ball bearing accelerates due to gravity and eventually reaches a constant speed.

Identify the graph above that correctly describes the motion of the ball bearing.

More energy stored by each particle

Plasmas

Gases

Liquids

Ionisation, Deionisation, Vaporisation (Boiling or Evaporation), Condensation, Sublimation, Deposition, Melting

The region around a magnet where a non-contact force acts on a magnet or a magnetic material is called the magnetic field or magnetic flux.

The direction of the magnetic field at any point is given by the direction of the force that would act on another north pole placed at that point.

The direction of a magnetic field line is from the north seeking pole of a magnet to the south seeking pole of the magnet.

A student was asked the following question:



A baseball pitcher can accelerate a baseball up to speeds of 40.7 m/s. The mass of a baseball is 0.145 kg and the acceleration of the baseball is 126 000 m/s². Calculate the resultant force exerted on the baseball.

They carried out their calculation using the following steps:

$m = 0.145 \text{ kg}$
 $a = 126\,000 \text{ m/s}^2$
 $F = m \times a$
 $F = 0.145 \times 126\,000$
 $F = 18270 \text{ N}$

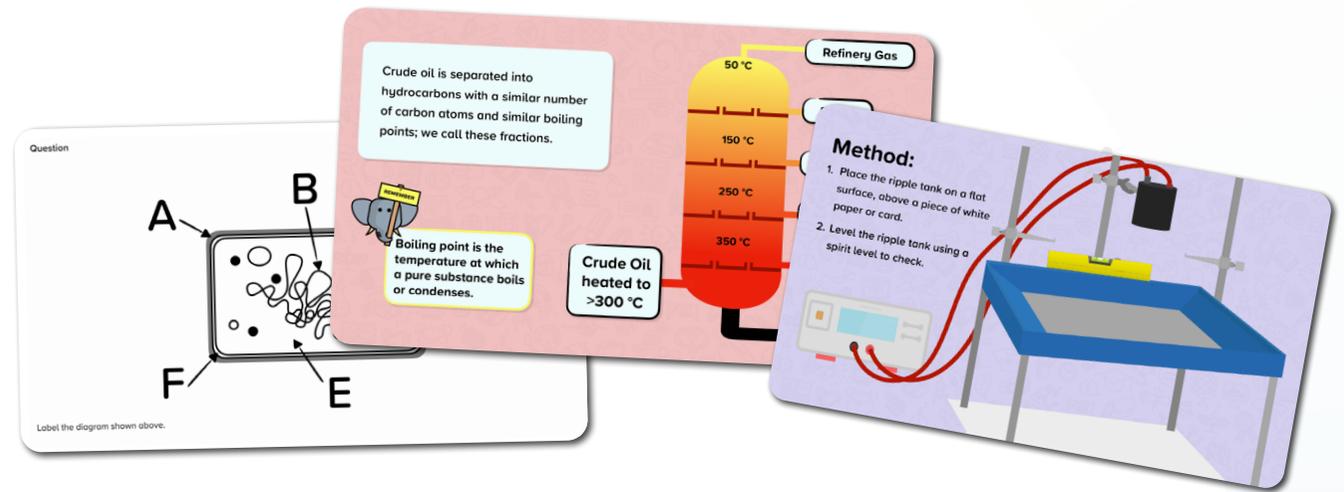
Has this been answered correctly?

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Science Courses

IGCSE Cambridge

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



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



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



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



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



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

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How are alkali metals stored to prevent them reacting with air and water?

- Stored in the dark.
- Stored in at low temperatures.
- Stored in water.
- Stored in oil.

I DON'T KNOW SUBMIT ANSWER

The Digestive System Organs

Mouth, Liver, Gall Bladder, Large Intestine (Colon and Rectum), Oesophagus, Stomach, Pancreas, Small Intestine

Tanzina tested a selection of digestive enzymes for their activity in different pH conditions. Her results are shown below.

Which enzyme A, B or C, is the most likely to be ordinarily found in the mouth?

I DON'T KNOW SUBMIT ANSWER



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



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



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



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



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



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

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Questions?
Email support@century.tech

