



International Curriculum Guide

English, Mathematics & Science
from KS2 to KS4



Primary

Pages 3-7



Secondary

Pages 8-16

Primary Courses

Content Library

Select from thousands of resources to support your planning across KS2. All of our resources are created by CENTURY's experienced teachers and align to the English national curriculum from KS2 to KS4. You can also customise existing courses or upload your own content.



The collage features several educational resource cards:

- Finding change:** A card with an elephant icon and a 'REMEMBER' sign. It explains that change is the money you get back when you pay more than something costs. It includes a question: 'Annie paid with a £10 note for a...' and an answer: '£6 and 20p'. It also shows a diagram of a number line with a play button icon.
- The four seasons can symbolise different stages of life:** A card with four quadrants: Spring (childhood), Summer (adulthood), Autumn (old age), and Winter (death). Each quadrant includes a small illustration and a brief description.
- Earth and Sun:** A card with a central diagram of the Sun and Earth. It includes text: 'The planet we live on is called Earth.', 'Like all the other planets, the Earth orbits the Sun. It takes a whole year (12 months) for the Earth to move around the Sun once.', 'The path the Earth takes when orbiting the Sun is its orbit.', and 'Key Words: Sun, Planet, Earth, Orbit'.
- What is pollination?:** A card with a diagram of a flower showing the anther and stigma. It includes text: 'Pollen has to be carried from one plant to another for sexual reproduction in plants.', 'Pollination is the carrying of pollen from the anther of one flower to the stigma of another. Pollen can be carried by insects or the wind.', and 'Key words: Sexual reproduction, Pollen'.
- Electrical circuit:** A card with a diagram of a simple electrical circuit. It includes a question: 'Which of the following would not be a source of zero error during this practical?' and a list of options: 'The crocodile clips being placed at 0.03 instead of 0.0 or against the ruler as it was too difficult.', 'The ammeter showing a reading of 0.02 A when the power supply is not turned on.', 'The voltmeter showing a reading of 0.01 V when not connected to the circuit.', and 'The wire overheats and smokes.'

Primary English

Primary Reading - Years 5 & 6

Designed to help students prepare for the KS2 Reading Assessment. Includes topics on understanding vocabulary, language, inferring, summarising and identifying details as well as seventeen practice tests.

75 Nuggets



Primary SPaG - Year 3

90 Nuggets



Primary SPaG - Year 4

95 Nuggets



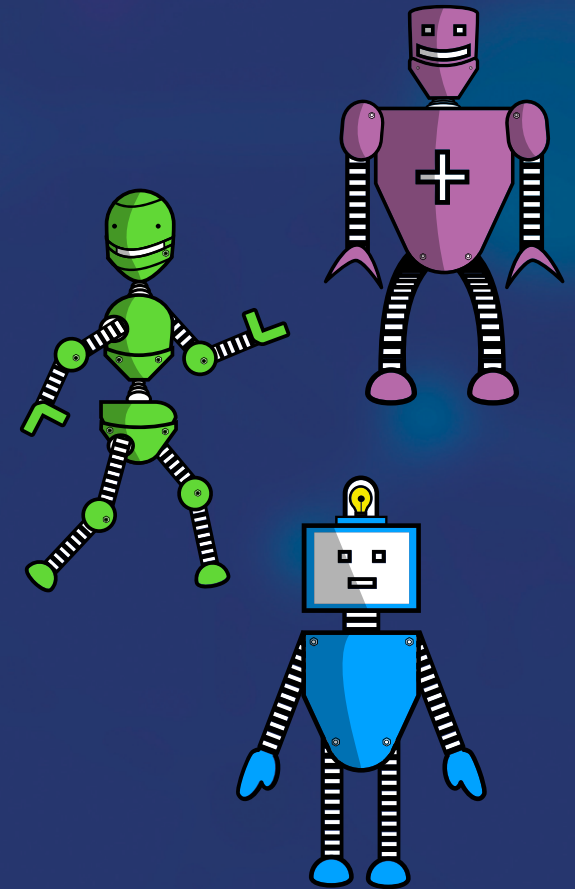
Primary SPaG - Year 5

135 Nuggets



Primary SPaG - Year 6

145 Nuggets



Match these words from the sentence below to their correct word class.

A curious penguin slipped on the ice.

slipped

old boot

Adjectives

An **adjective** adds meaning to a **noun**.
The **adjective** tells you more about the **noun**.

Adjectives can appear before or after the **noun** in a sentence.
Adjectives can compare different **nouns**.

The **furry monster** is **kinder** than the **one-eyed monster**.

Adverb Conjunction Pronoun

Our SPaG courses cover the grammar and punctuation statutory requirements of the English national curriculum with associated spellings from the word lists. The courses also contain punctuation and grammar prerequisites from KS1 to support learning.

Primary Mathematics



Primary Mathematics -

Year 3 – 105 Nuggets

Year 4 – 150 Nuggets

Year 5 – 190 Nuggets

Year 6 – 260 Nuggets

Covers the English national curriculum for each specific year group in KS2. Student data moves with the student through the courses.



Primary Mathematics - Multiplication Tables

Designed to develop fluency and recall of multiplication tables. Includes each of the times tables, mixed tables tests and practice tests of increasing difficulty.

55 Nuggets



Primary Mathematics - Arithmetic

This course is designed for students to practise fluency and recall in number skills. Designed to help students prepare for the SATs arithmetic paper with practice papers.

70 Nuggets

REMEMBER Finding change

Change is the money you get back when you pay more than something costs.

Question

Annie paid with a £10 note for a hat that cost £3 and 80p. What was her change?

Answer

£6 and 20p

1. Count up to the nearest pound
2. Count up to the amount paid.
3. Add your pounds and pence together to find the change.

34 55% of 2,400 =

55% = 55/100 = 11/20

50% = 2400 ÷ 2 = 1200

5% = 50% ÷ 10 = 1200 ÷ 10 = 120

1200 + 120 = 1320

55% of 2,400 = 1320

REMEMBER Counting in multiples of 6

Count on 6 by adding 6 each time.

Each time you add 6 you will arrive at the next multiple.

The following pie chart displays how 30 children travel to school.

1/3 of the children walk. 1/3 of the children take the bus. The rest travel by car.

How many children travel by car?

___ children

I DON'T KNOW

SUBMIT ANSWER

Primary Science



Primary Science - Year 3

50 Nuggets



Primary Science - Year 4

50 Nuggets



Primary Science - Year 5+

60 Nuggets



Primary Science - Year 6

70 Nuggets

Each course is aligned to the English national curriculum for each specific year group.

+ versions of a course include reproduction.

Primary Science - KS2+

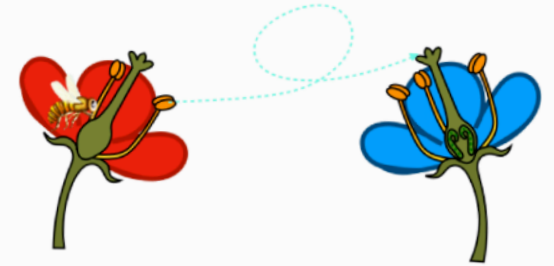
A course that includes all of the science content in KS2 according to the English national curriculum.

Covers topics on the following: plants, animals including humans, living things and their habitats, evolution and inheritance, rocks, states of matter, properties and changes of materials, light, forces and magnets, sound, electricity, space, working scientifically and maths skills for scientists.

125 Nuggets



Which of the following statements describes pollination?



- The carrying of pollen from the **carpel** of one flower to the **anther** of another.
- The carrying of pollen from the **petal** of one flower to the **petal** of another.
- The carrying of pollen from the **sepal** of one flower to the **stamen** of another.
- The carrying of pollen from the **anther** of one flower to the **stigma** of another.

Incorrect

Petals do not produce pollen.

Water

Minerals

Dead Plants

Dead Animals

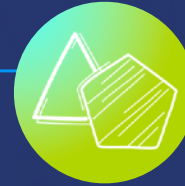
Soil contains water and minerals needed to help plants grow.
Soil contains the remains of dead plants and animals.

Key Words

Soil
Minerals

What is soil made from?

11+



11+ Verbal & Non-Verbal Reasoning

This course is suitable for children preparing for 11+, common entrance exams, and CAT4 assessments. They can be used more generally as puzzles and critical thinking for any students who may benefit from an extra challenge outside of the curriculum.

Verbal Reasonings: 30 Nuggets

Non-Verbal Reasoning: 25 Nuggets

AVU
HBU
QNP
ANM

ABU QBU QBM ANP ANU
A B C D E

Give your answer as A, B, C, D, or E.

A

Incorrect

In the third and fourth images both codes contain the letter U. They also both have the same internal shape, but in different positions. In the first two images you see any other shared letters between different images.

Answer

In these three pairs of words, find the word that completes the last pair of words in the same way as the other two pairs.

(depart pod) (excuse cue) (charge [?])

A ace B arc C hog D rag E age

Explanation

The correct answer is arc.

In the first two pairs, the third, fourth and first letter of the first word, in that order, spell the second word in the pair. If you apply the same pattern to the third pair, you get the letters a+r+c.

The image is made of 3 blocks. A cuboid, an 'L' shaped block and a 'T' shaped block. The cuboid has dimensions 2 x 1 x 1.

A has 4 blocks, but the image only has 3 blocks.

B has a cuboid which has a height of 3. The cuboid in the image has a height of 2.

C has an 'L' shaped block that has one part longer than the other. They are the same size in the image.

D is the building blocks of the image.

E has a cuboid that has dimensions 2 x 2 x 1. So it's too wide.

The answer is D

In these two groups of words, the three words in the second group go together in the same way as the words in the first group.

(huge [glut] belt) (calf [?] chef)

Which is the missing word from the second group?

leak

leaf

half

heal

cief

Incorrect

If you are stuck, look for the pattern in the first set of words and then use this to help you to find the pattern in the second set.

(huge [glut] belt) (calf [???) chef)

Next question >



11+ Mathematics

This course helps students to prepare for their senior school entrance tests. Students have access to videos and practice questions as well as full mock assessments.

265 Nuggets



11+ English GL

This course helps students to prepare for their senior school entrance tests. It is particularly adapted to the requirements of the GL assessment. Students have access to videos and practice questions on a range of topics.

70 Nuggets

Secondary Courses

Content Library

Select from thousands of resources to support your planning across KS3 & KS4. All of our resources are created by CENTURY's experienced teachers and align to the English national curriculum from KS2 to KS4. You can also customise existing courses or upload your own content.



The collage features several educational cards:

- Earth:** A card with a globe and text: "The planet we live on is called Earth." and "Like all the other planets, the Earth orbits the Sun. It takes a whole year (12 months) for the Earth to move around the Sun once."
- What is pollination?:** A green card with a play button icon and text: "Pollen has to be carried from one plant to another for sexual reproduction in plants." and "Pollination is the carrying of pollen from the anther of one flower to the stigma of another. Pollen can be carried by insects or the wind." It includes a diagram of a flower with labels for Anther and Stigma.
- Resistance:** A card with a circuit diagram and text: "A student was using the following equipment to investigate the resistance of a length of wire." and "Which of the following would not be a source of zero error during this practical?" with four multiple-choice options.
- Finding change:** A yellow card with a play button icon and a diagram showing a transaction. Text: "Change is the money you get back when you pay more than something costs." and "Annie paid with a £10 note for a hat that cost £3 and 80p. What was her change?" The answer is £6 and 20p.
- Seasons:** A light blue card with text: "The four seasons can symbolize different stages of life:" and four icons with descriptions: Spring (childhood), Summer (adulthood), Autumn (old age), and Winter (death).

KS3 English



English Language - KS3 Reading

Contains over 30 fiction and non-fiction texts, followed by reading questions which assess skills such as comprehension, inference, and identifying and analysing language & structure devices.

40 Nuggets

"as though he were a cat that had just spotted its next mouse"
what is the effect of this simile?

- The author uses a simile "as though he were a cat that had just spotted its next mouse" to show that the narrator is just like a mouse in the boss's eyes.
- The author uses a simile "as though he were a cat that had just spotted its next mouse" to show that the boss loves to pick up on any mistakes they make, and pounce on them (like a cat).
- The simile, comparing the narrator to a cat, suggests that the narrator is very quick and agile, like a cat.
- The simile, comparing the boss to a cat and the narrator to a mouse, suggests the boss is like a predator, and the narrator is his prey, suggesting that he is threatening and intimidating.

Incorrect
Actually, the boss is the cat and views the narrator as a mouse, not the other way around. Why might they be compared to a mouse? How might they feel? How does the boss view them?

correct answer

NEXT QUESTION >



English - Secondary Language

The Secondary Language course is aimed at KS3 students, laying the groundwork for skills needed at iGCSE. Covers a wide variety of language and structural techniques for both fiction and non-fiction extracts and various skills such as inference, analysis & evaluation.

115 Nuggets

Direct speech
"I am going to a party tonight," she said.

Speech tags (like "she said") tell us that someone said something.

In direct speech, you need to add a speech tag.

Indirect speech
She said that she was going to a party that night.

You also use speech tags in indirect speech.

You need to add in a determiner like "that" after the speech tag.



English - Secondary SPaG

This course provides students with an opportunity to revise spelling, punctuation and grammar. Designed to be used by students independently, with the teacher setting nuggets as appropriate.

85 Nuggets

Take a look at the image below.

Select the phrase below that correctly describes what is highlighted in the picture.

- The trucks wheels
- The trucks' wheels
- The truck's wheel's
- The truck's wheels

Incorrect
In this case "trucks" should be possessive, so there should be an apostrophe after the 's'.

correct answer

NEXT QUESTION >

iGCSE English Language

Our range of iGCSE courses cover a wide variety of language and structural techniques for both fiction and non-fiction extracts. The courses includes nuggets on purpose, audience and form as well as nuggets that address exam- specific questions and offer exam practice.



English Language - iGCSE (Cambridge)

125 Nuggets – Cambridge: 0500

English Language - iGCSE (Edexcel B)

125 Nuggets – Edexcel: 4EB1

Think about
Are these facts or opinions?

- “ ” Zebros sleep standing up.
- “ ” Zebros are the most beautiful creatures on the planet.
- “ ” Zebros should be better protected.
- “ ” A zebro has unique stripes.
- “ ” Zebros should not be kept in zoos.



English - GCSE SPaG

A comprehensive course covering spelling, punctuation and grammar for both KS3 and KS4. Aligned to the English national curriculum for GCSE and suitable for teaching all exam boards.

60 Nuggets

Answer
Time: 15:25
Date: Saturday 13th June
Location: Watworth Street
Crime: Broken Bicycle

The language is clear, impersonal, formal and objective. It is not necessary to use figurative or creative language.

At 3pm on Saturday 13th June, the victim was sitting with a friend around a table outside 'Rocky's Bakery' on Watworth Street, approximately 6 metres away from the bicycle rack where they had both stored their bicycles. The pair were sitting in sight of the road. The victim, along with his friend and a witness who saw the pair enter, claim that both of their bicycles were **securely** locked to the rack.

At **approximately** 2:25pm, the witness claims that the two teenagers – one female and one male – **approached** the **victim's** table and pushed and pulled the bike until the lock broke. The victim and their friend were **shocked** the **girls** **swearing** **drives** at the time. The teenagers left with the bike and were no longer in sight by the time that the victim returned outside and phoned the police.

The **witnesses** were unable to give a detailed description of the **perpetrators** as they were both facing away from the witness. However, the female was roughly 155cm and wearing a long blue jumper. The male was roughly 180cm and wearing a black hooded jumper.

3 Oxford Comma (Serial Comma)

The Oxford Comma (or 'serial comma') is the final comma in the list before the 'and'. It is controversial, but there are times in which it does clarify the meaning of a sentence.

The placement of the Oxford Comma in these sentences clarifies the meaning of the sentences.

My favourite sandwiches are tuna, chicken, cheese, and ham and egg.

My favourite sandwiches are tuna, chicken, cheese and ham, and egg.

In general a comma before the 'and' is not necessary unless it clarifies the meaning of the list.

Choose the correct definition of a symbol or symbolism.

- A symbol is when two contrasting ideas are placed next to or near each other for contrast.
- A symbol is an idea that repeats throughout a text.
- A symbol is a play on words intended to be humorous.
- A symbol is an object or a word that represents an idea.

Incorrect
No, this is the definition of a pun.

NEXT QUESTION >

Where should the colon go?

Their new teacher had several great traits fairness, intelligence and friendliness.

A B C D

B

Incorrect
Remember, the colon goes before the lists starts.

correct answer

NEXT QUESTION >

GCSE English Literature – Texts



English Literature - A Christmas Carol

40 Nuggets



English Literature - An Inspector Calls

35 Nuggets



English Literature - Jekyll & Hyde

35 Nuggets



English Literature - Macbeth

65 Nuggets



English Literature - Romeo & Juliet

80 Nuggets

Our literature courses cover a selection of GCSE texts, focusing on plot, themes, context, key events, characters, language, structure and form. Suitable for all exam boards.

These courses could also be used for KS3 students reading these texts.

2 Ambitious

Lady Macbeth is ruthlessly ambitious and begins to plan Duncan's murder as soon as she reads Macbeth's letter. However, she worries that Macbeth is too kind to kill Duncan.

AO2

It is surprising that Lady Macbeth says that Macbeth is "too" kind - suggesting she sees kindness as a negative quality. She dislikes his kindness or goodness which highlights that she is evil.

"Yet do I fear thy nature
It is too full o' the milk of
human kindness
To catch the nearest way."
Lady Macbeth: Act 1, Scene 5

___ met, my lady and my wife! (4,1)

Type the missing word from the quotation.

Fate theme
Life & Death theme

SUBMIT ANSWER

2 The Inspector's Method

Inspector Goole claims he likes to work with "one person and one line of inquiry at a time." Arthur remarks that this is "sensible", but it soon becomes clear that he has ulterior motives.

By separating the family, the Inspector ensures that they can never stage a coup against him. He operates using a **divide and conquer** method, starting with the head of the household.

The Inspector also determines the **structure** of the entire play through his method of questioning and which characters he allows to exit stage. He chooses to build up the **tension** within the family, concluding with Eric's interrogation, to ensure they are as **affected** by Eva/Daisy's suicide as possible.

Romeo has an image of Romeo dead in a tomb.

O God, I have an ill-divining soul!
Methinks I see thee, now thou art so low,
As one dead in the bottom of a tomb: (3,1)

Romeo has a dream in which Juliet finds him dead and she brings him back to life with a kiss.

I'm dead...
s in my lips,
or. (5,1)

Glossary

For doting, not for loving, ___
mine. (2,3)

Type the missing word from this quotation.

pupil

Correct

NEXT QUESTION >

GCSE English Literature – Poetry



Unseen Poetry

Covers the key skills needed to explore, analyse and compare unseen poetry. Poems were specifically commissioned and created for this course to ensure that they are truly unseen.

Suitable for all exam boards.

25 Nuggets



Love & Relationships

Covers the 'Love & Relationships' cluster of poems for AQA GCSE English Literature.

The course provides an opportunity for students to explore the form, structure, language, themes and relevant context for each poem.

AQA: 8702 – QAN: 601/4447/6

50 Nuggets



Power & Conflict

These courses cover the AQA and Edexcel 'Power & Conflict' poetry anthologies.

The courses explore the form, structure, language, themes and relevant context for each poem.

AQA: 8702 – QAN: 601/4447/6

50 Nuggets

Unseen Poetry Nugget: In this poem, the narrator comes to realise that nature is far more powerful than man. "[...] the grim shape Towered up between me and the stars"

Language analysis: The narrator describes the mountain as "towering" up to emphasise its power. The mountain **dominates** the scene and is an **imposing presence**. The reference to the mountain as being amongst the "stars" might also reflect the **divine or heavenly power of nature**.

Context: Wordsworth belonged to the Romantic movement. Romantics believed that **presence could be seen and felt in nature**.

Vocabulary: An **imposing presence** = an impressive, awe-inspiring presence.

Love & Relationships Nugget: In this poem, the narrator comes to realise that nature is far more powerful than man. "One summer evening (led by her) I found A little boat tied to a willow tree"

Language analysis: We are told the narrator is "led by her" and, in this context, "her" refers to nature. Nature is shown to be a **powerful force** which leads the narrator to steal the boat. Nature is personified as an **alluring, enticing** woman that seems to have an **unspoken power over the narrator**.

Vocabulary: Alluring = powerfully and mysteriously attractive. To entice = to attract, to tempt

Power & Conflict Nugget: The Prelude is an **autobiographical** poem that explores a key moment in the young Wordsworth's life. In this poem, he recounts a time when, as a young man, he took a boat out on a lake and encountered the awesome and terrifying power of nature for the first time. In many ways, this poem is a coming-of-age story about how the young Wordsworth came to realise his own foolish pride. By the end of the poem, he is wiser and has a better understanding of his place in the world.

Vocabulary: **Autobiographical** = a piece about the writer's own life

Question: Which is the best example of writing about context?

Wordsworth was born in 1770 and died in 1850. He wrote 'The Prelude' around 1798. For most of his life, he lived in the Lake District, a beautiful region of North West England.

When Wordsworth encounters the "huge peak, black and huge", he is filled with terror. This experience reflects the Romantic belief that strong fear and terror could be inspired by the hidden powers within nature.

Wordsworth wrote 'The Prelude' around 1798; for most of his life, he lived in the North West of England. The poem 'The Prelude' explores the conflict between man and nature. In many ways, the whole poem is a metaphor for how man attempts and fails to conquer nature.

In 'The Prelude', the narrator comes to realise that nature is far more powerful than man. The narrator comes face to face with the awesome and terrifying power of nature. The mountain seems to come alive, "uprearing its head".

Correct answer: Wordsworth wrote 'The Prelude' around 1798; for most of his life, he lived in the North West of England. The poem 'The Prelude' explores the conflict between man and nature. In many ways, the whole poem is a metaphor for how man attempts and fails to conquer nature.

[VIEW RESULTS >](#)

iGCSE Mathematics



Mathematics - IGCSE Edexcel - Foundation Edexcel - Higher

Suitable for any student expected to sit either the Foundation or Higher IGCSE Edexcel paper. Designed to allow transfer between courses if necessary.

655 (F) 975 (H) Nuggets – Edexcel: 4MA1

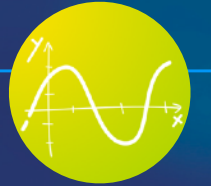


Mathematics - IGCSE Cambridge - Core Cambridge - Extended

Suitable for any students sitting the Core or Extended IGCSE Cambridge papers.

Core: 655 Nuggets – Cambridge: 0580

Extended: 985 Nuggets – Cambridge: 0980



Mathematics - Bridge to A-Level

Suitable for students who are working at a level 7-9 and need to be challenged. Covers key basic content of A-Level maths course at GCSE level. Includes some content beyond the GCSE syllabus (e.g. differentiation).

445 Nuggets

Which of the following Venn diagrams represents the statement below?
 $(R \cup Q) \subset P$

A **B**

C **D**

Differentiating Functions: Turning Points 1

Remember
The stationary point of a curve is where the gradient is zero.
The stationary point can be found by solving $\frac{dy}{dx} = 0$.
A stationary point where the curve changes direction is called a turning point.

Quadratic functions, the turning point can be classified based on the sign of the quadratic term:

positive sign
the turning point is the minimum point
 $y = x^2$

negative sign
the turning point is the maximum point
 $y = -x^2$

Work out the length of AB on the following diagram:

$AE \times BE = CE \times DE$
 $6 \times (x+6) = 12 \times 9$
 $6(x+6) = 108$
 $x+6 = 18$
 $x = 12$

AE = 6cm
CE = 12cm
DE = 9cm

A florist sells bouquets of flowers, she has to buy the flowers so that she can sell them. It costs her £6 to buy the flowers for a small bouquet (x), and it costs her £9 to buy the flowers for a large bouquet (y). She has £126 to spend on flowers. She needs to sell at least half as many large bouquets as small bouquets. She must sell a minimum of 3 small bouquets.

She sells large bouquets for £50 and small bouquets for £40. She wants to make at least £520 revenue.

Which vertex on the region will give the maximum profit?

KS3 Science



Biology - KS3

Topics covered: fundamental life processes, movement, nutrition & digestion, circulation, gas exchange, health, plants, species relationships & interdependencies, genetics and evolution.

Aligned to the English national curriculum.

95 Nuggets

At each level of a food chain, some energy is lost. This is because organisms use energy to stay warm, move and reproduce.

Only about **10% of the energy** available at one level is transferred to the next!



Thistle



Moth



Damselfly



Spotted Flycatcher



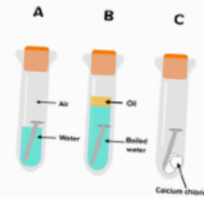
Chemistry - KS3

Topics covered: matter, the periodic table, electronic structure & bonding, separating mixtures, chemical reactions, equations & relative formula mass, acids & bases, the reactivity series, rates of reaction, earth science, materials and organic compounds.

Aligned to the English national curriculum.

115 Nuggets

Rocky is investigating the conditions required for an iron nail to rust. He sets up three conditions, seen below in the diagram.



Give the letter of the condition A, B or C, that would produce an iron nail with rust?

A

Correct

Water and oxygen are the reactants needed for rusting to occur.

[NEXT QUESTION >](#)

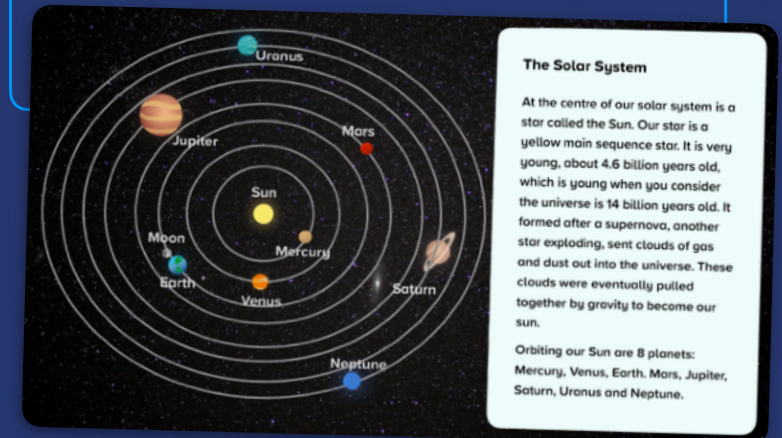


Physics - KS3

Topics covered: motion, forces, gravity, fluids, pressure, work, heat, electricity, static electricity, electronics, magnetism, sound, light, waves, energy, energy resources and space physics.

Aligned to the English national curriculum.

190 Nuggets



The Solar System

At the centre of our solar system is a star called the Sun. Our star is a yellow main sequence star. It is very young, about 4.6 billion years old, which is young when you consider the universe is 14 billion years old. It formed after a supernova, another star exploding, sent clouds of gas and dust out into the universe. These clouds were eventually pulled together by gravity to become our sun.

Orbiting our Sun are 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

GCSE Separate Sciences



Biology - GCSE - Higher

Chemistry - GCSE - Higher

Physics - GCSE - Higher

These courses are mapped to the English national curriculum and are suitable for higher tier GCSE students. They can be adapted to make them exam board-specific.

295 Nuggets – Suitable for all exam boards.



Biology - IGCSE (Edexcel)

Chemistry - IGCSE (Edexcel)

Physics - IGCSE (Edexcel)

Alternative versions of our GCSE courses rearranged in the format of the Edexcel IGCSE with some supplementary nuggets covering the additional content.

325 Nuggets – Aligned to the IGCSE Edexcel 4BI1, 4CH1, 4PH1, 4HB1 and 4SD0 specifications.

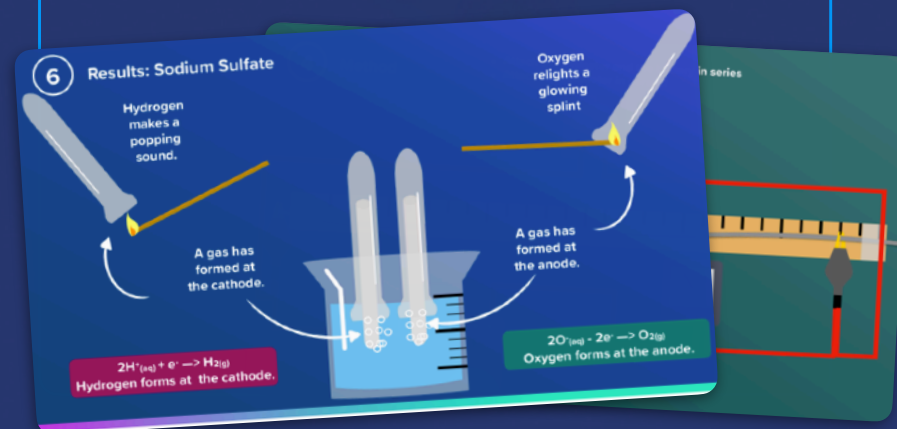


Practicals - Science GCSE

This course contains the required practicals for AQA, Edexcel and OCR. Also includes nuggets on working scientifically and on relevant mathematics for scientists.

Students can practise their skills by exploring other investigations not specifically required for their exam. It can be adapted for your students or left unmodified.

100 Nuggets – Suitable for all exam boards.



GCSE Combined Science*

Combined Science GCSE: AQA Trilogy (F) - Biology

Combined Science GCSE: AQA Trilogy (F) - Chemistry

Combined Science GCSE: AQA Trilogy (F) - Physics

GCSE Science nuggets designed to cover one topic or skill, which makes identifying gaps and targeting interventions even more precise than with previous courses. The required practicals are also included where they come in the specification.

For each topic, there are two sets of **topic review diagnostics** and there will be two sets of **paper review diagnostics** that can be used as assessment points or to help you plan revision sessions as the exams draw near.

*These courses are currently on rolling release.

All the content in the foundation courses will be included in the higher tier courses when they are available. This means students' data will be maintained if you decide to switch your students to these courses at a later date. Similarly, the combined sciences nuggets will be included in future new separate science courses.

450 Nuggets (will be \approx 1000 when finished) – AQA: 8464 – QAN: 601/8758/X

Delocalised electrons

Metals are good conductors of electricity. The delocalised, negatively charged, electrons in the metal can move and form a current.

Electrical current is the flow of charge.

Gill Filament, **Lamellae**, **Capillaries**, **Countercurrent exchange**, **Blood movement**, **Gas exchange**, **Water movement**

The water passes between the gill filaments.

Question

This diagram shows a circuit that controls a motor. There are two bulbs used to indicate the direction the motor is operating. Complete the configuration table to produce a user guide. The first row has already been completed.

| Switch 1 | Switch 2 | Bulb on | Motor Direction |
|----------|----------|---------|-----------------|
| Down | Up | B | Forwards |
| Up | Up | | |
| Down | Down | | |
| Up | Down | | |

Answer

When the switches are in the same direction the battery is not connected in the series circuit. Therefore, neither the bulbs nor motor will work.

We are told the configuration for forward movement, so the last option must be backwards movement.

| Switch 1 | Switch 2 | Bulb on | Motor Direction |
|----------|----------|---------|-----------------|
| Down | Up | B | Forwards |
| Up | Up | Neither | Not working |
| Down | Down | Neither | Not working |
| Up | Down | A | Backwards |

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