



GCSE Science Exam Revision Resources

For 2021/22



OAK
NATIONAL
ACADEMY

INTRODUCTION

This revision resource is a collection of all of the KS4 Science units available on Oak National Academy. Oak's structured lessons and teacher-led explanations make it perfect for revision for exams, mocks and assessments.

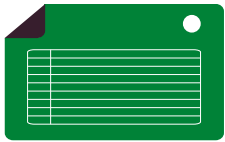
Each unit is made up of lessons which contain:



teacher-led videos



quizzes



worksheets



slides

There are two ways to access the lessons depending on how they are being used:

Teacher Hub

This is our dedicated area for teachers to adapt, edit and download and share resources. You can pick and choose different elements of lessons to use with pupils and review each lesson's content, objectives and activities to use as you wish.

Classroom

The Classroom is where pupils can view and complete lessons. Each lesson is self-contained and can be completed independently. In this guide we've provided a link to the first lesson in each unit - giving easy access to use the lessons for independent study. Alternatively, teachers can pinpoint and share links to specific lessons for pupils to revise.

TOP TIPS TO MAKE SURE YOU CAN PERFORM AT THE TOP OF YOUR GAME



There's no denying that revision can feel tiring and daunting, especially when it comes to revising for exams and assessments. Revision is a really important part of learning, and it's just as important and helpful to not only think about what you're studying, but how you're doing it. To help you get your focus sharp and your brain in gear, we've got some top tips to make sure you can perform at the top of your game.



Quiz yourself

Use practice questions or make flashcards. Practice testing has been shown to lead to greater knowledge retention over time.



Little and often

Spread out your learning by revising regularly but in small chunks. This will reduce overload and maximise memory.



Mix it up

Rather than learning about a topic in a block, alternate topics for study. This has been shown to be highly effective in boosting long term memory. It also matches the format of a test which flips from one topic to another.



Talk to yourself

Students who study without listening to music perform better in exams than those who listen to music. No need for complete silence though – reading aloud when studying has been shown to improve remembering.



Teach someone else

This helps you to stay focussed, structure your knowledge and identify essential information. It's fun too!



Look after yourself

Get some sleep, eat breakfast and go for walks. Students who do stay alert for longer and perform better on tests than those who don't. What an easy way to boost your performance!

SCIENCE KEY UNITS



We've selected a few key units we think are particularly useful — these cover key topics which are likely to be included by all exam boards. These are a great place to start, but you can also use our unit quizzes to establish where particular support is most needed.

Each unit of work features a unit quiz. These are designed to identify any areas your pupils may be finding more challenging within a topic.

Unit quizzes can help to give an overview of understanding and pinpoint individual revision needs. Pupils can use the results to self-direct to lessons or share their unit quiz results with you, offering a formative tool to support whole class planning or setting targeted revision plans and interventions.

BIOLOGY

Cell biology

This unit covers key content that underpins many different aspects of biology. Knowledge and understanding of cell biology is a prerequisite for studying organisation, and infection and response.

[Teacher Hub ▶](#)[Classroom lesson 1 ▶](#)[Unit quiz ▶](#)

Bioenergetics

This unit covers content related to photosynthesis and respiration. Knowledge and understanding of energy systems in organisms enables students to apply their knowledge to a range of applications such as digestion and energy in food chains.

[Teacher Hub ▶](#)[Classroom lesson 1 ▶](#)[Unit quiz ▶](#)

CHEMISTRY

Atomic structure and periodic table

This unit covers key content that underpins many different aspects of chemistry. Knowledge and understanding of the structure of the atom and the arrangement of elements in the periodic table is vital for understanding of bonding and structure and quantitative chemistry.

[Teacher Hub ▶](#)[Classroom lesson 1 ▶](#)[Unit quiz ▶](#)

Energy changes

This unit covers content related to the energy of reactions. This unit links knowledge from chemical changes and rates of reaction which will enable students to use this knowledge in questions that link different areas of the specification.

[Teacher Hub ▶](#)[Classroom lesson 1 ▶](#)[Unit quiz ▶](#)

PHYSICS

Particle model of matter

This unit covers key content that underpins many different aspects of physics. Knowledge and understanding of the particle model enables students to apply their knowledge to a range of applications such as waves and space.

[Teacher Hub ▶](#)[Classroom lesson 1 ▶](#)[Unit quiz ▶](#)

Energy

This unit covers content related to energy systems and transfers. The arithmetic and numerical computation skills covered in this unit are cross curricular across all three science specialisms.

[Teacher Hub ▶](#)[Classroom lesson 1 ▶](#)[Unit quiz ▶](#)

ALL BIOLOGY UNITS

Cell biology

Teacher Hub ▶

Classroom lesson 1 ▶

Organisation

Teacher Hub ▶

Classroom lesson 1 ▶

Infection and response

Teacher Hub ▶

Classroom lesson 1 ▶

Bioenergetics

Teacher Hub ▶

Classroom lesson 1 ▶

Ecology

Teacher Hub ▶

Classroom lesson 1 ▶

Homeostasis and response

Teacher Hub ▶

Classroom lesson 1 ▶

Inheritance, variation and evolution

Teacher Hub ▶

Classroom lesson 1 ▶



ALL CHEMISTRY UNITS

[Atomic structure and periodic table](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[Bonding, structure and the properties of Matter](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[Quantitative Chemistry](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[Chemical changes](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[Energy changes](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[The rate and extent of chemical change](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[Organic Chemistry](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[Chemical analysis](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[Chemistry of the atmosphere](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

[Using Resources](#)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)



ALL PHYSICS UNITS

Particle Model of Matter

Teacher Hub ▶

Classroom lesson 1 ▶

Energy

Teacher Hub ▶

Classroom lesson 1 ▶

Electricity

Teacher Hub ▶

Classroom lesson 1 ▶

Atomic Structure

Teacher Hub ▶

Classroom lesson 1 ▶

Magnetism

Teacher Hub ▶

Classroom lesson 1 ▶

Forces

Teacher Hub ▶

Classroom lesson 1 ▶

Waves

Teacher Hub ▶

Classroom lesson 1 ▶

Space

Teacher Hub ▶

Classroom lesson 1 ▶



ALL COMBINED SCIENCE UNITS

Cell biology (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Atomic structure and periodic table (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Particle Model of Matter (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Organisation (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Bonding, structure and the properties of Matter (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Energy (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Infection and response (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Quantitative Chemistry (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Electricity (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Bioenergetics (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Chemical changes (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Atomic Structure (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Ecology (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Energy changes (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Magnetism (HT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Cell biology (FT)

[Teacher Hub ▶](#)

[Classroom lesson 1 ▶](#)

Atomic structure and periodic table (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Particle Model of Matter (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Organisation (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Bonding, structure and the properties of Matter (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Energy (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Infection and response (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Quantitative Chemistry (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Electricity (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Bioenergetics (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Chemical changes (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Atomic Structure (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Ecology (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Energy changes (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Magnetism (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Homeostasis and response (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

The rate and extent of chemical change (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Forces (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Inheritance, variation and evolution (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Organic Chemistry (HF)

Teacher Hub ▶

Classroom lesson 1 ▶

Waves (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Chemical analysis (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Chemistry of the atmosphere (HF)

Teacher Hub ▶

Classroom lesson 1 ▶

Using Resources (FT)

Teacher Hub ▶

Classroom lesson 1 ▶

Homeostasis and response (HT)

Teacher Hub ▶

Classroom lesson 1 ▶

The rate and extent of chemical change (HT)

Teacher Hub ▶

Classroom lesson 1 ▶

Forces (HT)

Teacher Hub ▶

Classroom lesson 1 ▶

Inheritance, variation and evolution (HT)

Teacher Hub ▶

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Organic Chemistry (HT)

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Classroom lesson 1 ▶

Using Resources (HT)

Teacher Hub ▶

Classroom lesson 1 ▶