



Our Curriculum Aims:

- Developing scientific curiosity and highlighting the societal importance of science.
- Development of core scientific and analytical skills as well as scientific literacy.
- Ensuring a firm knowledge and skills base for the transition to Key Stage Four (GCSE).

For each topic studied in Year 7-8, **Topic Descriptor Sheets** detail the knowledge and skills needed to progress in that particular topic.

Topic Descriptor Sheets can be found in pupils' books at the beginning of each new topic, and they are also available electronically on O-365 STU Science.

Key Stage Three Curriculum Overview

Year 7

| | Name of topic | Key Content of the Topic | Assessment points |
|-------------|-------------------------------|---|--|
| HT 1 | Unit 1: Science Skills | <ul style="list-style-type: none"> • Working safely in the laboratory • Making observations and recording measurements • Scientific diagram drawing • Designing valid scientific investigations (a fair test) • Presenting data and drawing conclusions • Considering errors in an investigation | End of Topic Test Y7 Science Exam |
| HT 2 | Unit 2: Cells & Living things | <ul style="list-style-type: none"> • Living or not? You decide! What defines a living thing? • Classification & using keys • Vertebrates and Invertebrates • Fungi, plants, bacteria and protocista • Introduction to microscopy, using a microscope to view cells • Plant and animal cells, specialised cells and their functions • How cells become tissues, organs, organ systems and organisms | End of Topic Test Y7 Science Exam |
| HT 3 | Unit 3: Energy & Electricity | <ul style="list-style-type: none"> • Different energy forms & energy transfers • Energy from foods • Sources of energy, renewable & non-renewable • The laws of charge • Electrical circuits, conductors and insulators • What is current? • What is voltage? • Electrical safety • Electroplating objects | End of Topic Test Y7 Science Exam |
| HT 4 | Unit 4: Particles | <ul style="list-style-type: none"> • Properties of materials • The Particle Model – a Scientific Theory • Changes of state • Air pressure & expansion of gases • Expansion of solids • Calculating density of regular and irregular solids | End of Topic Test Y7 Science Exam |
| HT 5 | Unit 5: Solutions | <ul style="list-style-type: none"> • Soluble or insoluble substances, and factors affecting solubility • Coloured solutions • What is meant by a pure substance? • Measuring melting and boiling points • Do all substances follow the solid-liquid-gas pattern on heating? • Separating mixtures using different practical techniques | End of Topic Test Y7 Science Exam |

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| HT 6 | Unit 6: Reproduction & Adaptations | <ul style="list-style-type: none"> Sexual & asexual reproductions Maturation (puberty) in humans Male and female reproductive systems Fertilisation, development of the embryo, birth and parental care Flowering plants – pollination & fertilisation Methods of seed dispersal Investigating germination Considering habitats, and seasonal variations How organisms are adapted to their environment Investigating behaviour in woodlice | End of Topic Test <i>Due to timing, this topic is not assessed as part of the Y7 Science Exam</i> |
| All HTs | Investigative Work | Throughout Year 7, your son will carry out multiple investigations to help him apply his scientific knowledge and gain confidence with interpreting and analysing data. These are important skills needed at GCSE. | Feedback following investigation tasks. |

Each unit varies slightly in length depending on the content covered and skills being developed. Units are typically taught in the order shown above. However, there may be some variation if a class has more than one teacher. The Y7 Science Exam will take place in June.

Year 8

| | Name of topic | Key Content of the Topic | Assessment points |
|------------------------|----------------------|--|--|
| HT 1 & HT 2 | Forces & Motion | <ul style="list-style-type: none"> Examples of forces, and how force is measured Measuring and calculating Speed Friction: friend or foe? Investigating friction Balanced and unbalanced forces Terminal velocity Moments | End of Topic Test Y8 Science Exam |
| | Elements & Compounds | <ul style="list-style-type: none"> Elements & the Development of the Periodic Table How elements combine to form compounds Naming compounds, formulae and notation Metals vs. non-metals Revisiting Particle Theory & changes of state (from Y7) | End of Topic Test Y8 Science Exam |
| | Food & Digestion | <ul style="list-style-type: none"> Why do we need to eat, exploring food labels and a balanced diet and understanding the effects of an unbalanced diet Testing food samples for carbohydrates, protein and fat Teeth The role of the Digestive System Digestive enzymes and absorption | End of Topic Test Y8 Science Exam |
| HT 3 & HT 4 | Light & Sound | <ul style="list-style-type: none"> Properties of light Investigating reflection, scattering, refraction and dispersal of white light into a range of colours Effect of colored filters on white light, how do objects appear in different coloured light Properties of sound Sound and hearing, the human ear | End of Topic Test Y8 Science Exam |
| | Minerals & Rocks | <ul style="list-style-type: none"> Minerals and their composition, The importance of economic ore minerals and the uses of the metals that they yield Investigation to identify mineral using tests Rock types and their classification Rock Cycle Earth's Structure & Composition | End of Topic Test Y8 Science Exam |
| | Muscles & Bones | <ul style="list-style-type: none"> The skeleton, structure & functions Bones, strength, length and structure Types of joints Muscles Investigating muscle endurance | End of Topic Test Y8 Science Exam |

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|--------------------------------|---------------------|--|--|
| HT 5 & HT 6 | Heat Transfer | <ul style="list-style-type: none"> • Heat & Temperature • Conduction in solids, good and poor conductors • Convection • Radiation • Investigating heat loss • Energy efficient homes • Revisiting evaporation (from Y7) | End of Topic Test Y8 Science Exam |
| | Metals & Extraction | <ul style="list-style-type: none"> • Extracting iron and copper from their oxides • Reactivity of Group I and Group II metals • Deriving the Reactivity Series of Metals • Displacement Reactions | End of Topic Test Y8 Science Exam |
| | Environment | <ul style="list-style-type: none"> • Collecting data on habitats and living organisms • The importance of sampling • Food chains & food webs • Interdependence – how populations depend on each other • Predator-Prey relationships • Representing data in pyramids of number and pyramids of biomass • The effect of toxins and bioaccumulation in food chains | End of Topic Test <i>Due to timing, this topic is not assessed as part of the Y8 Science Exam</i> |
| All HTs | Investigative Work | Throughout Year 8, your son will carry out multiple investigations to help him apply his scientific knowledge and gain confidence with interpreting and analysing data. These are important skills needed at GCSE. | Feedback following investigation tasks. |

Each unit varies slightly in length depending on the content covered and skills being developed. Units are typically taught in the order shown above. However, there may be some variation if a class has more than one teacher. The Y8 Science Exam will take place in June.

What can parents do to support their sons?

- Look at your son's Science exercise book(s) on a regular basis, talk to him about his work, confidence and progress in each topic. Encourage him to be pro-active and act on feedback from his teacher(s). The Topic Descriptor Sheets are useful quick-check guides to the teaching content being covered, and skills your son is developing.
- Encourage him to be organised with independent study tasks or revision for assessments, and please encourage him to take pride in his presentation. If he is asked to research a topic, then he must list the sources of information that he has used at the end of the piece of work.
- Take opportunities to relate what your son has learnt in his Science lessons to the world around him. For example, you could discuss topical aspects of Science which are in the news, watch relevant documentaries together and visit museums.
- If you have any questions or concerns about your son's work or overall progress, please do not hesitate to contact his Science teacher(s) or Mrs Hill (Head of KS3 Science).

Recommended Revision Guide

The **CGP KS3 Science Higher Level Complete Revision & Practice** book is available, through ParentPay. This book is highly recommended and excellent value for money. It is a revision guide with an excellent set of notes, and practice questions with answers in the back. **N.B.** There is some content in this book that AGSB pupils do not cover in Years 7 and 8, but your son can still broaden his knowledge by looking at those sections which will be covered in detail at KS4 as part of his GCSE Science subjects.

Additional Support Available for KS3 Students

All pupils can access practice exam questions and additional revision materials are also available in topic folders on O-365 STU Science. In addition, there is a weekly "drop-in" session to support pupils on a one-to-one basis. Pupils can receive help with a current topic, on-going revision or help to catch-up following absence.

From Year 9 Onwards

Pupils are taught separate Science subjects; Biology, Chemistry and Physics, by a subject specialist and also have the option to take Geology at GCSE. Please see these departments' individual Curriculum Guides for further details.