

Year 7 Science (Autumn)

'We aim to empower and impassion students to engage with the world around them in an informed and evaluative way'

Biology

What will I study?

Animal cells

In this topic, students will learn about how all animals are made of cells, linking to the skeletal system and how we move. They will also learn about the different parts of the cell and how they work to keep us alive.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Written task
- Cumulative assessment

Chemistry

What will I study?

Particles

Students will study matter and how the particle arrangement of matter forms solid, liquid and gaseous substances. They will also learn about atoms, elements and compounds, and the principle of conservation of mass.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Physics

What will I study?

Forces and Space

Students will learn about the basic forces that we encounter in everyday life. They will go on to describe the link between some of those forces and our understanding of space.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Quality of Education: Curriculum is planned and sequenced so that new knowledge and skills build on what has been taught before and leads towards a clearly defined end points.

Vision: The Science department has a vision to provide a broad curriculum that covers the knowledge, specialist practical skills and scientific literacy that will empower and impassion pupils to engage responsibly with the community and the world around them with in an informed and evaluative way.

Within Science: We provide a challenging curriculum that ensures that students experience Science in a practical way, through experiments, and using demonstrations/ models.

Year 7 Science (Spring)

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Biology

What will I study?

Organ Systems (Breathing and Reproduction)

In this topic, students will learn about how our breathing system gets the oxygen we need into our body. We will also learn about the process of human reproduction and the specialised organ systems and cells involved.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Chemistry

What will I study?

Types of reaction and physical change

Students will continue their study of matter, looking at the physical changes between the different states of matter. They will go on to look at chemical reactions and how they rearrange atoms to make new compounds.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Physics

What will I study?

The Cycles (The Rock and Water Cycle)

Students will learn about the rock cycle and it's importance in the development of the planet earth. They will also be learning about how water is cycled through the environment to help keep the planet healthy.

How will I be assessed?

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Year 7 Science (Summer)

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Biology

What will I study?

Health and Disease

In this topic, students will learn about the different factors that can affect our health. They will look at infection and lifestyle choices, delving into how those choices can affect unborn children too.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Chemistry

What will I study?

Purity

In this topic, students will be exploring what it means to have a pure substance. They will be developing their understanding of how to separate mixtures in the hopes of making pure substances by scientific means.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Written task
- Cumulative assessment

Physics

What will I study?

The Space Race

Students will learn about the role people and technology has played in sending people and objects to space. They will look at the famous scientists that have helped it all be possible.

How will I be assessed?

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Year 8 Science (Autumn)

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Biology

What will I study?

Digestion and nutrition

In this topic, students will learn about the components of a balanced diet. They will look at conditions that can be developed as a result of malnutrition, such as scurvy.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Chemistry

What will I study?

Climate Science

Students will study the composition of the Earth's atmosphere. They will consider the human impact on the atmosphere and how this links to choices made by companies and how we dispose of waste.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Written task
- Cumulative assessment

Physics

What will I study?

Energy transfer

Students will look at the transfer of thermal energy through conduction in solids and convection in liquids and gases.

How will I be assessed?

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- End of topic reviews
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Year 8 Science (Spring)

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Biology

What will I study?

Human respiration

Students will learn how our cells use sugar from digestion, and oxygen from respiration to release energy needed by our cells.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Chemistry

What will I study?

Materials

Students will investigate the properties of different materials, including the ability to act as a thermal conductor or thermal insulator.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Written task
- Cumulative assessment

Physics

What will I study?

Technology in energy production

In this topic, students will study the use of fossil fuels for energy production. They will also evaluate newer renewable methods of energy production.

How will I be assessed?

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- End of topic reviews
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Biology

What will I study?

Structure of plants and leaves

In this topic, students will learn in detail about the ways leaves are designed to help a plant photosynthesise, including the role of stomata on the bottom of the leaf.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Written task
- Cumulative assessment

Chemistry

What will I study?

Acids and alkalis

In this topic, students will learn what acids and alkalis are, and how we classify things as scientists. They will look at reactions that occur between acids and alkalis to make neutral substances.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Physics

What will I study?

Waves

Students will learn about energy transfer through waves such as ultrasound. They will apply knowledge of ultrasound to real life examples such as echolocation and SONAR.

How will I be assessed?

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Year 9 Science (Autumn)

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Biology

What will I study?

Defence against disease

In this topic, students will learn about our natural defences against bacteria and viruses. They will also learn how medical advances have allowed us to improve our immune response to save lives.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Chemistry

What will I study?

Rates of chemical and biological processes

Students will study what happens during a reaction in terms of particles and factors that can change the rate of reaction. They will apply this to unicellular organisms and catalytic converters in cars.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Written task
- Cumulative assessment

Physics

What will I study?

Power and electricity

Students will study how we use of electricity to power our appliances, and how to calculate energy costs of different appliance as found on fuel bills.

How will I be assessed?

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Year 9 Science (Spring)

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Biology

What will I study?

Cells and genetics

Students will learn about the human genome, cell production and stem cells. They will consider the ethical and religious perspectives on using stem cells to treat genetic conditions to .

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Biology

What will I study?

Digestive system and enzymes

Students will apply their knowledge of biological catalysts to digestive processes. They will examine the optimum conditions for three enzymes in the digestive system and learn how to practically study these.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Written task
- Cumulative assessment

Physics

What will I study?

Forces and pressure

Students will learn how the forces acting between air or water particles and the objects they interact with create phenomena such as atmospheric pressure, upthrust in water and terminal velocity. They will also look at how we use streamlining to improve terminal velocity.

How will I be assessed?

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Year 9 Science (Summer)

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Biology

What will I study?

The heart and circulatory system

In this topic, students will learn about the structure of the heart and how this links to respiration. They will investigate and explain the effects of exercise on heart rate.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Written task
- Cumulative assessment

Biology

What will I study?

Photosynthesis

Students will build on their knowledge of plant cells and tissues to explain the factors that effect rate of photosynthesis such as light levels and air temperature.

How will I be assessed?

- Low stakes recall quizzing
- End of topic reviews
- Cumulative assessment

Biology

What will I study?

Communicable and non-communicable diseases

Students will learn more about diseases caused by microbes. They will also learn about diseases such as cancer and diabetes, considering the risk factors for these and analysing data trends on these conditions.

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