

# Subject: Science

## Year 8

### Scheme of Learning 2025-2026

**Subject leader: Mr S Brock**

Topics by term	Topic overview for Year 7					
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topics taught				PHY – Waves and Energy transfer	CHEM – Using our Earth sustainably	BIO – Our health and effects of drugs
			BIO – Variation for survival			PHY – Motion on Earth and in space

<b>Term 3</b>							
<b>Topic 2: Variation for survival</b>							
<b>What are the similarities and differences between organisms</b>	What are the key differences between organisms of the same species?	Describe variation within a species and explain why this is important.	<ol style="list-style-type: none"> <li>1. Identify differences between different species</li> <li>2. Explain the importance of diversity</li> <li>3. Evaluate the importance of variation in organisms</li> </ol>		Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	<p>Sense of enjoyment and fascination in learning about themselves, others and the world around them.</p> <p>Willingness to participate in a variety of social settings, cooperating well with others and being able to resolve conflicts effectively.</p>
	Why do organisms of the same species have differences between them?	Explain how variation occurs and why it is necessary to survival.	<ol style="list-style-type: none"> <li>1. Identify some features of organisms that are inherited and some that are determined by their environment</li> <li>2. Understand that offspring from the same parents may show considerable variation</li> <li>3. Evaluate the importance of genetic and environmental variation to the survival of the organism</li> </ol>		Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	<p>Understanding and appreciation of the wide range of cultural influences that have shaped their own heritage</p>

	How can we control the characteristics that pass on the next generation?	Describe the process where desirable characteristics can be selectively bred.	<ol style="list-style-type: none"> <li>1. Describe how selective breeding can produce organisms with desirable characteristics</li> <li>2. Explain the process of selective breeding</li> <li>3. Evaluate the importance of selective breeding, and explore the ethical issues involved</li> </ol>		Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	and those of others.
	What can organisms do to adapt to their environment and what happens if they don't?	Explain the process of evolution by looking at a range of different theories for this phenomenon.	<ol style="list-style-type: none"> <li>1. Describe how variation causes competition for resources, and drives natural selection</li> <li>2. Explain the theories of Lamarck, Wallace and Darwin</li> <li>3. Evaluate the importance of Darwin's work</li> </ol>		Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	
	How is genetic information passed on?	Describe heredity as the process by which genetic information is transmitted from one generation to the next	<ol style="list-style-type: none"> <li>1. Identify inherited features in plants and animals that vary between offspring</li> <li>2. Explain how inherited</li> </ol>		Weekly homework task depending on class, set according to homework timetable.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical	

			<p>differences arise by genetic material from both parents combining</p> <ol style="list-style-type: none"> <li>Describe how identical twins occur and analyse data about their features</li> </ol>		Termly assessment focussed on Scientific working.	resources in lesson where appropriate.	
How is information about an organism stored and passed on?	Explain a simple model of chromosomes, genes and DNA in heredity.	<ol style="list-style-type: none"> <li>Identify that the nucleus contains chromosomes which carry inherited genetic information</li> <li>Explain that chromosomes are made of genes containing DNA, and describe the structure of DNA</li> <li>Assess the work of Watson, Crick, Wilkins and Franklin on DNA structure</li> </ol>		Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.		
Why are chromosomes important?	Explain how chromosomes carry genetic material and explain how some genetic disorders arise.	<ol style="list-style-type: none"> <li>Identify that, at fertilisation, one chromosome in each pair comes from each parent</li> <li>Explain how fertilisation results in each new individual</li> </ol>		Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.		

			being genetically unique 3. Explain how some genetic disorders arise		Scientific working.		
	How can we artificially copy an organism?	Describe the process of cell and organism cloning and evaluate the ethical and moral arguments that surround this process.	1. Define cloning and describe some natural cloning processes Explain how organisms may be artificially cloned 2. Explore ethical issues around artificial cloning 3. Compare and contrast asexual and sexual reproduction		Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	

**Term 4**

<b>Topic: Waves and energy transfer</b>							
<b>How do waves transfer energy?</b>	What can we tell about a wave?		Describe the movement of waves in water ☑ Understand reflection of waves ☑ Understand superposition of waves		Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Sense of enjoyment and fascination in learning about themselves, others and the world around them.  Willingness to participate in a variety of social settings,
	What do we mean by the frequency of a wave?				Weekly homework task depending on	Knowledge organiser, Collins textbook,	

					class, set according to homework timetable. Termly assessment focussed on Scientific working.	Standardised lesson presentation. Practical resources in lesson where appropriate.	cooperating well with others and being able to resolve conflicts effectively.
	How do different materials behave when light shines on them?				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Understanding and appreciation of the wide range of cultural influences that have shaped their own heritage and those of others.
	How can we change rays of light?				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	

	What can we do with the energy transferred by light?				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	
	What happens when white light splits up?				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	
	How does energy transfer from one store to another?				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	

	How can thermal energy move between objects				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	
	How do we use fuels and food in energy transfers?				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Sense of enjoyment and fascination in learning about themselves, others and the world around them.  Willingness to participate in a variety of social settings, cooperating well with others and being able to resolve
	How can we measure the speed of energy transfer?				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	

					Scientific working.		conflicts effectively.
	How is the cost of fuels in the home calculated?				Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Understanding and appreciation of the wide range of cultural influences that have shaped their own heritage and those of others.

**Term 5**

**Topic 1: Getting the energy your body needs**

					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Sense of enjoyment and fascination in learning about themselves, others and the world around them.
					Weekly homework task depending on class, set according to homework	Knowledge organiser, Collins textbook, Standardised lesson presentation.	Willingness to participate in a variety of social settings, cooperating well with others and

					timetable. Termly assessment focussed on Scientific working.	Practical resources in lesson where appropriate.	being able to resolve conflicts effectively.  Understanding and appreciation of the wide range of cultural influences that have shaped their own heritage and those of others.
					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	
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					Weekly homework task depending on class, set according to	Knowledge organiser, Collins textbook, Standardised lesson

					homework timetable. Termly assessment focussed on Scientific working.	presentation. Practical resources in lesson where appropriate.	
<b>Topic 2: Explaining physical changes</b>							
					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Sense of enjoyment and fascination in learning about themselves, others and the world around them.
					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Willingness to participate in a variety of social settings, cooperating well with others and being able to resolve conflicts effectively.
					Weekly homework task depending on class, set according to homework	Knowledge organiser, Collins textbook, Standardised lesson	Understanding and appreciation of the wide range of cultural

					timetable. Termly assessment focussed on Scientific working.	presentation. Practical resources in lesson where appropriate.	influences that have shaped their own heritage and those of others.
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<b>Term 6</b>							
	<b>Topic 1: Exploring contact and non-contact forces</b>						
					Weekly homework task depending on class, set according to homework timetable. Termly	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in	Sense of enjoyment and fascination in learning about themselves, others and

					assessment focussed on Scientific working.	lesson where appropriate.	the world around them.
					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Willingness to participate in a variety of social settings, cooperating well with others and being able to resolve conflicts effectively.
					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Understanding and appreciation of the wide range of cultural influences that have shaped their own heritage and those of others.
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					focussed on Scientific working.	lesson where appropriate.
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					Scientific working.			
					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.		
<b>Topic 2: Explaining chemical change</b>								
					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on Scientific working.	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	ense of enjoyment and fascination in learning about themselves, others and the world around them.	
					Weekly homework task depending on class, set according to homework timetable. Termly assessment focussed on	Knowledge organiser, Collins textbook, Standardised lesson presentation. Practical resources in lesson where appropriate.	Willingness to participate in a variety of social settings, cooperating well with others and being able to resolve	

					Scientific working.		conflicts effectively.
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