

Science Year 8 Curriculum overview

The below is intended to provide parents and pupils with a simple overview of Year 8 Science. Should you have any additional questions please do not hesitate to contact Mrs Middleton. We strongly encourage parents to look through their child's books and talk with them about their studies. In addition to the knowledge quizzes at the end of each year students will sit 4 larger assessments throughout the year after completing a biology, chemistry and physics unit.

Learning Focus	Assessments
Unit 1: Scientific investigations	
<p><u>Learning enquiries:</u> 1) How do you plan an investigation? 2) What are variables? 3) How do you display data appropriately? 4) How do you draw graphs? 5) How do you draw conclusions from data? 6) How do you evaluate investigations and suggest improvements?</p> <p><u>Key skills:</u> Displaying data: Drawing a results table and appropriate graph</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 2: Organisms 3 - digestion	
<p><u>Learning enquiries:</u> 1) What nutrients are needed for a balanced diet? 2) How do you carry out food tests 3) What organs are in the digestive system? 4) What are enzymes? 5) What factors affect enzyme activity? 6) How are enzymes useful in industry?</p> <p><u>Key skills:</u> Following a scientific method and analysing results: Using results to draw conclusions on nutrients in food</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 3: Matter 3 - Separation techniques	
<p><u>Learning enquiries:</u> 1) What are mixtures? 2) What is a pure substance? 3) How can we use filtration and crystallisation? 4) What is distillation? 5) How does chromatography work?</p> <p><u>Key skills:</u> Method writing: Use scientific knowledge to write a method that can be followed</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 4: Waves 2 - Light	
<p><u>Learning enquiries:</u> 1)How does light travels? 2)What are transparent, translucent and opaque? 3)What happens when light is reflected from regular and irregular surfaces? 4) What is refraction? 5) What is coloured light? 6) How do we see?</p> <p><u>Key skills:</u> Maths skill: Using a protractor to measure angles refraction investigation</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 5: Organisms 4 – Body systems	
<p><u>Learning enquiries:</u> 1) What is the gas exchange system and how is it adapted? 2) How do we breathe? 3) What is blood like? 4) What is the structure of the heart?</p> <p><u>Key skills:</u> Scientific communication: Journey of the blood around the body</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>

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Unit 6: Reactions 3 - metals	
<p>Learning enquiries: 1) What are the properties of metals? 2) How do metals react with acids? 3) How do metals react with oxygen? 4) How do metals react with water? 5) What are displacement reactions? 6) What is the reactivity series?</p> <p>Key skills:</p> <p>Analysis & Conclusion: Displacement reactions</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 7: Forces 2 – contact forces and pressure	
<p>Learning enquiries: 1) What is air resistance? 2) What is friction? 3) What factors affect friction? 4) How do forces deform objects? 5) What happens when you stretch a spring? 6) What is pressure? 7) How do liquids and gases exert pressure?</p> <p>Key skills:</p> <p>Graph skills: Hooke's law investigation</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 8: Ecosystems 2 – plant reproduction	
<p>Learning enquiries: 1) What's inside a flower? 2) How does pollination happen? 3) How do plants make seeds? 4) How are seeds dispersed?</p> <p>Key skills:</p> <p>Method writing – Investigating wing shape for seed dispersal</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 9: Earth 1 – Earth structure	
<p>Learning enquiries: 1) What is Earth like? 2) What are sedimentary, igneous and metamorphic rocks? 3) What is the rock cycle?</p> <p>Key skills:</p> <p>Evaluating models – choc rock cycle</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 10: Electromagnets 2 – charge and resistance	
<p>Learning enquiries:</p> <p>1). What is static? 2) What is charge? 3) What is resistance? 4) What factors affect resistance?</p> <p>Key skills:</p> <p>Graph skills: Investigating resistance</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 11: Genes 3 - evolution	
<p>Learning enquiries: 1). Who was Charles Darwin? 2) What is natural selection? 3) What do fossils tell us about evolution? 4) What causes extinction? 5) How can we preserve biodiversity?</p> <p>Key skills:</p> <p>Literacy – explaining natural selection using key words</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 12: Matter 4 - Heating and cooling	

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<p><u>Learning enquiries:</u> 1) What is the difference between heat and temperature? 2) How is heat transferred by conduction convection and radiation? 3) How can we reduce transfer of heat? 4) What happens what substances are heated and cooled?</p> <p><u>Key skills:</u> Writing a scientific method and analysing results – investigating the best insulation</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>
Unit 13: Energy 2 - Power	
<p><u>Learning enquiries:</u> 1). What is work? 2) What is power? 3) How are electricity bills calculated? 4) How is energy dissipated? 5) What is efficiency?</p> <p><u>Key skills:</u> Conclusion: work done investigation</p>	<p>Interim Assessment: Pupils will receive feedback on their skills assessment with how to improve</p> <p>Final Assessment: Knowledge test to assess key component knowledge from the unit</p>