

**Brockington Science Department Year 7- foundation**

Y7	<b>Module 1:</b> Cells and movement Universe Particle model	<b>Module 2:</b> Human reproduction and plant reproduction Separating mixtures Electricity	<b>Module 3:</b> Types of reaction Energy costs and energy transfer Contact forces and gravity	<b>Module 4:</b> Variation Acids and alkalis	<b>Working scientifically:</b> skills in science										
BC9															
BC8															
BC7															
BC6															
BC5	Scores 75%+ on the module 1 assessment Identify and name features of cells and describe some differences between plant and animal cells. Make observations using a microscope and record them in simple drawings. Describe the differences between tissues, organs and organ systems, giving examples of each. Explain how muscles work in pairs to create movement. Describe how some cells in an organism are specialised to carry out particular functions. Name the planets in order Know why we have day and night	Scores 75%+ on the module 2 assessment Names the common parts of the male and female reproductive system. Know the length of pregnancy and describe the changes in the foetus. State the functions of key parts of the reproductive system. Describe the role of the placenta, umbilical cord and amniotic sac. Describe the different plant tissues and how they are needed for reproduction. Using the particle model, classify materials as solid, liquid or gas Classify materials as solid, liquid or gas and recognise that materials are made of particles Name some soluble and insoluble solids; describe how pure water can be obtained from sea water	Scores 75%+ on the module 3 assessment To identify the difference between physical and chemical reactions. To know what conditions are needed for iron to rust and how rusting can be prevented To know what happens when metals and acids react Describe how the fire triangle can be used to fight fires. State the original source of our energy State the units for energy Give examples of energy stores Describe an energy transfer Describe the difference between renewable and non-renewable energy sources Identify contact and non-contact forces.	Scores 75%+ on the module 4 assessment Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors. Identify the need for animals to adapt to their environment. Identify similarities and differences between predators and prey. Give examples of adaptations of animals and plants in different environments. Recognise that inherited and environmental causes of	Identifies all key variables, all steps in a practical are sequenced in a logical order. Results are recorded in a suitable table and all units are correct. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings Students design their own scale on both axis for a bar chart or line graph. Intervals on the scale increase by equal amounts. Students have independently labelled the axis.										

	<p>Know the path of the sun through the sky during a day. Describe the phases of the moon.</p> <p>Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p> <p>Explain what happens to water molecules during changing of state</p> <p>Understand what causes gas pressure</p>	<p>Explain how temperature effects solubility.</p> <p>Define the term 'saturation'.</p> <p>Identify circuit components by their symbols.</p> <p>Represent a simple circuit with a diagram.</p> <p>Identify ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p> <p>Compare and contrast series and parallel circuits.</p> <p>Describe what electrical current is</p>	<p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p> <p>Describe what a gravitational field is.</p> <p>Explain how to reduce friction.</p> <p>Describe elasticity in terms of tension and compression.</p>	<p>variation cannot be completely separated.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p> <p>Classify solutions using indicators and pH values.</p> <p>Describe everyday uses of neutralisation</p>	<p>Repeats have been made if this was appropriate.</p>
<p><b>BC4</b></p>	<p>Scores 60%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in simple drawings.</p> <p>Describe the differences between tissues, organs and organ systems, giving examples of each.</p> <p>Explain how muscles work in pairs to create movement.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p>	<p>Scores 60%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus.</p> <p>State the functions of key parts of the reproductive system.</p> <p>Describe the role of the placenta, umbilical cord and amniotic sac.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Name some soluble and insoluble solids; describe how pure water can be obtained from sea water</p>	<p>Scores 60%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>To know what conditions are needed for iron to rust and how rusting can be prevented</p> <p>To know what happens when metals and acids react</p> <p>State the original source of our energy</p> <p>State the units for energy</p> <p>Give examples of energy stores</p> <p>Describe an energy transfer</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p>	<p>Scores 60%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Identify similarities and differences between predators and prey.</p> <p>Give examples of adaptations of animals and plants in different environments.</p>	<p>Uses the correct terms for independent and dependent variables, all steps in a practical are sequenced in a logical order. Results are recorded in a suitable table and units in at least one column are correct. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p>

	<p>Know the path of the sun through the sky during a day. Describe the phases of the moon.</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p> <p>Explain what happens to water molecules during changing of state</p>	<p>Explain how temperature effects solubility.</p> <p>Identify circuit components by their symbols.</p> <p>Represent a simple circuit with a diagram.</p> <p>Identify ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p> <p>Compare and contrast series and parallel circuits.</p>	<p>Describe what a gravitational field is.</p> <p>Explain how to reduce friction.</p>	<p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p> <p>Classify solutions using indicators and pH values.</p>	<p>Intervals on the scale increase by equal amounts. Students have independently labelled the axis.</p>
<b>BC3</b>	<p>Scores 45%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in simple drawings.</p> <p>Describe the differences between tissues, organs and organ systems, giving examples of each.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Know the path of the sun through the sky during a day.</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p>	<p>Scores 45%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus.</p> <p>State the functions of key parts of the reproductive system.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Name some soluble and insoluble solids; describe how pure water can be obtained from sea water</p> <p>Identify circuit components by their symbols.</p> <p>Represent a simple circuit with a diagram.</p> <p>Identify ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p>	<p>Scores 45%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>To know what conditions are needed for iron to rust and how rusting can be prevented</p> <p>State the original source of our energy</p> <p>State the units for energy</p> <p>Give examples of energy stores</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p> <p>Describe what a gravitational field is.</p>	<p>Scores 45%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Identify similarities and differences between predators and prey.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p>	<p>Can identify all key variables, lists all equipment in a practical confidently, can identify all the hazards in an experiment, results are in a table and units are correct and can plot a line graph and bar chart with little guidance.</p>

	State what diffusion is				
<b>BC2</b>	<p>Scores 30%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in simple drawings.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p>	<p>Scores 30%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Identify circuit components by their symbols.</p> <p>Represent a simple circuit with a diagram.</p> <p>Identify ways to be safe around electricity</p>	<p>Scores 30%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>State the original source of our energy</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p>	<p>Scores 30%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p>	<p>Can identify two or more variables, can list equipment in an experiment confidently, identifies two or more hazards in an experiment, can add units in a results table, plot points on a graph and draw bars in a bar chart.</p>
<b>BC1</b>	<p>Scores 15%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells</p> <p>Name the planets in order</p> <p>Classify materials as solid, liquid or gas and recognise that</p>	<p>Scores 15%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Identify circuit components by their symbols.</p> <p>Represent a simple circuit with a diagram.</p>	<p>Scores 15%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>State the original source of our energy</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p>	<p>Scores 15%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p>	<p>Can identify one variable to control, can list equipment in experiments, can identify one hazard during a practical, can fill in a results table and plot points on a graph.</p>

	materials are made out of particles			Name some common acids and alkalis stating some everyday uses.	
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**Brockington Science Department Year 7- higher**

Y7	<b>Module 1: Cells and movement Universe Particle model</b>	<b>Module 2: Human reproduction and plant reproduction Separating mixtures Electricity</b>	<b>Module 3: Types of reaction Energy costs and energy transfer Contact forces and gravity</b>	<b>Module 4: Variation Acids and alkalis</b>	<b>Working scientifically: skills in science</b>
<b>BC9</b>	<p>Scores 90%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe the differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in detailed drawings.</p> <p>Describe the differences between tissues, organs and organ systems, giving examples of each.</p> <p>Explain how muscles work in pairs to create movement.</p> <p>Describe how some cells in an organism are specialised to carry out particular functions.</p> <p>Explain why multi-cellular organisms need a transport system.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Know the path of the sun through the sky during a day.</p> <p>Describe the phases of the moon.</p> <p>Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun</p>	<p>Scores 90%+ on the module 2 assessment</p> <p>Names all the parts of the male and female reproductive system in detail.</p> <p>Know the length of pregnancy and describe the changes in the foetus.</p> <p>State the functions of key parts of the reproductive system.</p> <p>Describe the role of the placenta, umbilical cord and amniotic sac.</p> <p>Describe the different plant tissues and how they are needed for reproduction.</p> <p>Explain the importance of plant pollination.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Name as many soluble and insoluble solids; describe how pure water can be obtained from sea water</p> <p>Explain how temperature effects solubility.</p> <p>Define the term 'saturation'.</p> <p>Use the particle model to explain a range of phenomena</p> <p>Identify circuit components by their symbols.</p> <p>Represent circuits with a diagram.</p> <p>Identify several ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p>	<p>Scores 90%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>To describe the conditions needed for iron to rust and how rusting can be prevented</p> <p>To describe what happens when metals and acids react</p> <p>Describe how the fire triangle can be used to fight fires.</p> <p>Describe the equation for combustion.</p> <p>To write word and symbol equations for metal reactions with acids and metal carbonate reactions with acid</p> <p>State the original source of our energy</p> <p>State the units for energy</p> <p>Give examples of energy stores</p> <p>Describe an energy transfer</p> <p>Describe the difference between renewable and non-renewable energy sources</p> <p>Evaluate the advantages and disadvantages of renewable energy resources</p> <p>Evaluate the advantages and disadvantages of non-renewable energy sources</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p>	<p>Scores 90%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Identify similarities and differences between predators and prey.</p> <p>Give examples of adaptations of animals and plants in different environments.</p> <p>Recognise that inherited and environmental causes of variation cannot be completely separated.</p> <p>Explain what might happen if the environment changes and how this might affect living things.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order.</p> <p>Results are recorded in a suitable table and all units are correct.</p> <p>Student explains how each variable will be controlled and how it will affect the results if it was not controlled.</p> <p>Student explains why the data collection method they have chosen is the best for giving reproducible and precise results.</p> <p>Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings.</p> <p>Student has said to repeat each experiment at least 3 times to get valid results. If repeat are not appropriate, student has explained why.</p> <p>If repeats were recorded, a mean value has been calculated.</p> <p>Student has identified anomalous results and has</p>

	<p>Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year</p> <p>Explain the choice of particular units for measuring distance</p> <p>Explain why the Earth can support life</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p> <p>Explain what happens to water molecules during changing of state</p> <p>Understand what causes gas pressure</p> <p>Use the particle mode to classify materials as solids, liquids or gases and explain the classification of some 'difficult materials'</p> <p>Describe examples of diffusion</p> <p>Explain expansion and contraction in terms of particles.</p>	<p>Compare and contrast series and parallel circuits.</p> <p>Describe what electrical current is</p> <p>Use an ammeter correctly to measure current in a circuit</p> <p>Define resistance</p>	<p>Describe what a gravitational field is.</p> <p>Explain how to reduce friction.</p> <p>Describe elasticity in terms of tension and compression.</p> <p>Describe the term equilibrium.</p> <p>Explain a linear relationship between two variables when drawn on a graph.</p> <p>Explain Hooke's law.</p>	<p>Classify solutions using indicators and pH values.</p> <p>Describe everyday uses of neutralisation</p> <p>Explain how a neutral solution can be obtained and relate the pH of an acid or alkali to its hazards and corrosiveness</p> <p>Write the word equations for making salts (neutralisation)</p>	<p><u>not</u> included them when calculating the mean values.</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p> <p>Intervals on the scale increase by equal amounts.</p> <p>Students have independently labelled the axis.</p>
<p><b>BC8</b></p>	<p>Scores 78%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe the differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in detailed drawings.</p>	<p>Scores 78%+ on the module 2 assessment</p> <p>Names all the parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus in detail.</p> <p>State the functions of key parts of the reproductive system.</p>	<p>Scores 78%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>To describe the conditions needed for iron to rust and how rusting can be prevented</p> <p>To describe what happens when metals and acids react</p>	<p>Scores 78%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order.</p> <p>Results are recorded in a suitable table and all units are correct.</p> <p>Student explains how each variable will be controlled and how it will affect the</p>

<p>Describe the differences between tissues, organs and organ systems, giving examples of each.</p> <p>Explain how muscles work in pairs to create movement.</p> <p>Describe how some cells in an organism are specialised to carry out particular functions.</p> <p>Explain why multi-cellular organisms need a transport system.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Know the path of the sun through the sky during a day.</p> <p>Describe the phases of the moon.</p> <p>Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun</p> <p>Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year</p> <p>Explain the choice of particular units for measuring distance</p> <p>Explain why the Earth can support life</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p>	<p>Describe the role of the placenta, umbilical cord and amniotic sac.</p> <p>Describe the different plant tissues and how they are needed for reproduction.</p> <p>Explain the importance of plant pollination.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Name as many soluble and insoluble solids; describe how pure water can be obtained from sea water</p> <p>Explain how temperature effects solubility.</p> <p>Define the term 'saturation'.</p> <p>Use the particle model to explain a range of phenomena</p> <p>Identify circuit components by their symbols.</p> <p>Represent circuits with a diagram.</p> <p>Identify several ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p> <p>Compare and contrast series and parallel circuits.</p> <p>Describe what electrical current is</p> <p>Use an ammeter correctly to measure current in a circuit</p> <p>Define resistance</p>	<p>Describe how the fire triangle can be used to fight fires.</p> <p>Describe the equation for combustion.</p> <p>To write word and symbol equations for metal reactions with acids and metal carbonate reactions with acid</p> <p>State the original source of our energy</p> <p>State the units for energy</p> <p>Give examples of energy stores</p> <p>Describe an energy transfer</p> <p>Describe the difference between renewable and non-renewable energy sources</p> <p>Evaluate the advantages and disadvantages of renewable energy resources</p> <p>Evaluate the advantages and disadvantages of non-renewable energy sources</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p> <p>Describe what a gravitational field is.</p> <p>Explain how to reduce friction.</p> <p>Describe elasticity in terms of tension and compression.</p> <p>Describe the term equilibrium.</p> <p>Explain a linear relationship between two variables when drawn on a graph.</p> <p>Explain Hooke's law.</p>	<p>Identify the need for animals to adapt to their environment.</p> <p>Identify similarities and differences between predators and prey.</p> <p>Give examples of adaptations of animals and plants in different environments.</p> <p>Recognise that inherited and environmental causes of variation cannot be completely separated.</p> <p>Explain what might happen if the environment changes and how this might affect living things.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p> <p>Classify solutions using indicators and pH values.</p> <p>Describe everyday uses of neutralisation</p> <p>Explain how a neutral solution can be obtained and relate the pH of an acid or alkali to its hazards and corrosiveness</p> <p>Write the word equations for making salts (neutralisation)</p>	<p>results if it was not controlled.</p> <p>Student explains why the data collection method they have chosen is the best for giving reproducible and precise results.</p> <p>Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings.</p> <p>Student has said to repeat each experiment at least 3 times to get valid results. If repeat are not appropriate, student has explained why.</p> <p>If repeats were recorded, a mean value has been calculated.</p> <p>Student has identified anomalous results and has <u>not</u> included them when calculating the mean values.</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p> <p>Intervals on the scale increase by equal amounts.</p> <p>Students have independently labelled the axis.</p>
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	<p>Explain what happens to water molecules during changing of state</p> <p>Understand what causes gas pressure</p> <p>Use the particle mode to classify materials as solids, liquids or gases and explain the classification of some 'difficult materials'</p> <p>Describe examples of diffusion</p> <p>Explain expansion and contraction in terms of particles.</p>				
<p><b>BC7</b></p>	<p>Scores 63%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe the differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in detailed drawings.</p> <p>Describe the differences between tissues, organs and organ systems, giving examples of each.</p> <p>Explain how muscles work in pairs to create movement.</p> <p>Describe how some cells in an organism are specialised to carry out particular functions.</p> <p>Explain why multi-cellular organisms need a transport system.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Know the path of the sun through the sky during a day.</p>	<p>Scores 63%+ on the module 2 assessment</p> <p>Names all the common parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus in detail.</p> <p>State the functions of key parts of the reproductive system.</p> <p>Describe the role of the placenta, umbilical cord and amniotic sac.</p> <p>Describe the different plant tissues and how they are needed for reproduction.</p> <p>Explain the importance of plant pollination.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Name as many soluble and insoluble solids; describe how pure water can be obtained from sea water</p> <p>Explain how temperature effects solubility.</p> <p>Define the term 'saturation'.</p>	<p>Scores 63%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>To describe the conditions needed for iron to rust and how rusting can be prevented</p> <p>To describe what happens when metals and acids react</p> <p>Describe how the fire triangle can be used to fight fires.</p> <p>Describe the equation for combustion.</p> <p>To write word and symbol equations for metal reactions with acids and metal carbonate reactions with acid</p> <p>State the original source of our energy</p> <p>State the units for energy</p> <p>Give examples of energy stores</p> <p>Describe an energy transfer</p> <p>Describe the difference between renewable and non-renewable energy sources</p> <p>Evaluate the advantages and disadvantages of renewable energy resources</p>	<p>Scores 63%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Identify similarities and differences between predators and prey.</p> <p>Give examples of adaptations of animals and plants in different environments.</p> <p>Recognise that inherited and environmental causes of variation cannot be completely separated.</p> <p>Explain what might happen if the environment changes and how this might affect living things.</p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order.</p> <p>Results are recorded in a suitable table and all units are correct.</p> <p>Student explains how each variable will be controlled and how it will affect the results if it was not controlled.</p> <p>Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings.</p> <p>Student has said to repeat each experiment at least 3 times to get valid results. If repeat are not appropriate, student has explained why.</p> <p>If repeats were recorded, a mean value has been calculated.</p>

	<p>Describe the phases of the moon.</p> <p>Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun</p> <p>Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year</p> <p>Explain the choice of particular units for measuring distance</p> <p>Explain why the Earth can support life</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p> <p>Explain what happens to water molecules during changing of state</p> <p>Understand what causes gas pressure</p> <p>Use the particle mode to classify materials as solids, liquids or gases and explain the classification of some 'difficult materials'</p> <p>Describe examples of diffusion</p> <p>Explain expansion and contraction in terms of particles.</p>	<p>Use the particle model to explain a range of phenomena</p> <p>Identify circuit components by their symbols.</p> <p>Represent circuits with a diagram.</p> <p>Identify several ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p> <p>Compare and contrast series and parallel circuits.</p> <p>Describe what electrical current is</p> <p>Use an ammeter correctly to measure current in a circuit</p> <p>Define resistance</p>	<p>Evaluate the advantages and disadvantages of non-renewable energy sources</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p> <p>Describe what a gravitational field is.</p> <p>Explain how to reduce friction.</p> <p>Describe elasticity in terms of tension and compression.</p> <p>Describe the term equilibrium.</p> <p>Explain a linear relationship between two variables when drawn on a graph.</p> <p>Explain Hooke's law.</p>	<p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p> <p>Classify solutions using indicators and pH values.</p> <p>Describe everyday uses of neutralisation</p> <p>Explain how a neutral solution can be obtained and relate the pH of an acid or alkali to its hazards and corrosiveness</p> <p>Write the word equations for making salts (neutralisation)</p>	<p>Student has identified anomalous results and has <u>not</u> included them when calculating the mean values.</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p> <p>Intervals on the scale increase by equal amounts.</p> <p>Students have independently labelled the axis.</p>
<b>BC6</b>	Scores 57%+ on the module 1 assessment	Scores 57%+ on the module 2 assessment	Scores 57%+ on the module 3 assessment	Scores 57%+ on the module 4 assessment	Identifies all key variables, all steps in a practical are sequenced in a logical order.

<p>Identify and name features of cells and describe some differences between plant and animal cells.          Make observations using a microscope and record them in simple drawings.          Describe the differences between tissues, organs and organ systems, giving examples of each.          Explain how muscles work in pairs to create movement.          Describe how some cells in an organism are specialised to carry out particular functions.          Explain why multi-cellular organisms need a transport system.          Name the planets in order          Know why we have day and night          Know the path of the sun through the sky during a day.          Describe the phases of the moon.          Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun          Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year          Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p>	<p>Names all the common parts of the male and female reproductive system. Know the length of pregnancy and describe the changes in the foetus in detail.          State the functions of key parts of the reproductive system.          Describe the role of the placenta, umbilical cord and amniotic sac.          Describe the different plant tissues and how they are needed for reproduction.          Explain the importance of plant pollination.          Using the particle model, classify materials as solid, liquid or gas          Classify materials as solid, liquid or gas and recognise that materials are made of particles          Name some soluble and insoluble solids; describe how pure water can be obtained from sea water          Explain how temperature effects solubility.          Define the term 'saturation'.          Use the particle model to explain a range of phenomena          Identify circuit components by their symbols.          Represent a simple circuit with a diagram.          Identify ways to be safe around electricity          Investigate and fix some faulty circuits.          Compare and contrast series and parallel circuits.          Describe what electrical current is          Use an ammeter correctly to measure current in a circuit          Define resistance</p>	<p>To identify the difference between physical and chemical reactions.          To know what conditions are needed for iron to rust and how rusting can be prevented          To know what happens when metals and acids react          Describe how the fire triangle can be used to fight fires.          Describe the equation for combustion.          State the original source of our energy          State the units for energy          Give examples of energy stores          Describe an energy transfer          Describe the difference between renewable and non-renewable energy sources          Evaluate the advantages and disadvantages of renewable energy resources          Identify contact and non-contact forces.          Describe the relationship between weight, mass and gravity.          Describe and give examples of friction.          Describe what a gravitational field is.          Explain how to reduce friction.          Describe elasticity in terms of tension and compression.          Describe the term equilibrium.</p>	<p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.          Identify the need for animals to adapt to their environment.          Identify similarities and differences between predators and prey.          Give examples of adaptations of animals and plants in different environments.          Recognise that inherited and environmental causes of variation cannot be completely separated.          . Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis          Describe how to deal with hazards.          Classify solutions using indicators and pH values.          Describe everyday uses of neutralisation          Explain how a neutral solution can be obtained and relate the pH of an acid or alkali to its hazards and corrosiveness</p>	<p>Results are recorded in a suitable table and all units are correct. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings.          Student has said to repeat each experiment at least 3 times to get valid results. If repeat are not appropriate, student has explained why.          If repeats were recorded, a mean value has been calculated.          Students design their own scale on both axis for a bar chart or line graph.          Intervals on the scale increase by equal amounts.          Students have independently labelled the axis.</p>
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	<p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p> <p>Explain what happens to water molecules during changing of state</p> <p>Understand what causes gas pressure</p> <p>Use the particle mode to classify materials as solids, liquids or gases and explain the classification of some 'difficult materials'</p>				
<b>BC5</b>	<p>Scores 42%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in simple drawings.</p> <p>Describe the differences between tissues, organs and organ systems, giving examples of each.</p> <p>Explain how muscles work in pairs to create movement.</p> <p>Describe how some cells in an organism are specialised to carry out particular functions.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Know the path of the sun through the sky during a day.</p> <p>Describe the phases of the moon.</p>	<p>Scores 42%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus.</p> <p>State the functions of key parts of the reproductive system.</p> <p>Describe the role of the placenta, umbilical cord and amniotic sac.</p> <p>Describe the different plant tissues and how they are needed for reproduction.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Name some soluble and insoluble solids; describe how pure water can be obtained from sea water</p> <p>Explain how temperature effects solubility.</p> <p>Define the term 'saturation'.</p> <p>Identify circuit components by their symbols.</p>	<p>Scores 42%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>To know what conditions are needed for iron to rust and how rusting can be prevented</p> <p>To know what happens when metals and acids react</p> <p>Describe how the fire triangle can be used to fight fires.</p> <p>State the original source of our energy</p> <p>State the units for energy</p> <p>Give examples of energy stores</p> <p>Describe an energy transfer</p> <p>Describe the difference between renewable and non-renewable energy sources</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p> <p>Describe what a gravitational field is.</p> <p>Explain how to reduce friction.</p>	<p>Scores 42%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Identify similarities and differences between predators and prey.</p> <p>Give examples of adaptations of animals and plants in different environments.</p> <p>Recognise that inherited and environmental causes of variation cannot be completely separated.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe</p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order.</p> <p>Results are recorded in a suitable table and all units are correct. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p> <p>Intervals on the scale increase by equal amounts.</p> <p>Students have independently labelled the axis.</p> <p>Repeats have been made if this was appropriate.</p>

	<p>Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p> <p>Explain what happens to water molecules during changing of state</p> <p>Understand what causes gas pressure</p>	<p>Represent a simple circuit with a diagram.</p> <p>Identify ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p> <p>Compare and contrast series and parallel circuits.</p> <p>Describe what electrical current is</p>	<p>Describe elasticity in terms of tension and compression.</p>	<p>some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p> <p>Classify solutions using indicators and pH values.</p> <p>Describe everyday uses of neutralisation</p>	
<p><b>BC4</b></p>	<p>Scores 33%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in simple drawings.</p> <p>Describe the differences between tissues, organs and organ systems, giving examples of each.</p> <p>Explain how muscles work in pairs to create movement.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Know the path of the sun through the sky during a day.</p> <p>Describe the phases of the moon.</p>	<p>Scores 33%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus.</p> <p>State the functions of key parts of the reproductive system.</p> <p>Describe the role of the placenta, umbilical cord and amniotic sac.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Name some soluble and insoluble solids; describe how pure water can be obtained from sea water</p> <p>Explain how temperature effects solubility.</p> <p>Identify circuit components by their symbols.</p>	<p>Scores 33%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>To know what conditions are needed for iron to rust and how rusting can be prevented</p> <p>To know what happens when metals and acids react</p> <p>State the original source of our energy</p> <p>State the units for energy</p> <p>Give examples of energy stores</p> <p>Describe an energy transfer</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p> <p>Describe what a gravitational field is.</p> <p>Explain how to reduce friction.</p>	<p>Scores 33%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Identify similarities and differences between predators and prey.</p> <p>Give examples of adaptations of animals and plants in different environments.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe</p>	<p>Uses the correct terms for independent and dependent variables, all steps in a practical are sequenced in a logical order. Results are recorded in a suitable table and units in at least one column are correct. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p> <p>Intervals on the scale increase by equal amounts.</p> <p>Students have independently labelled the axis.</p>

	<p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p> <p>Explain what happens to water molecules during changing of state</p>	<p>Represent a simple circuit with a diagram.</p> <p>Identify ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p> <p>Compare and contrast series and parallel circuits.</p>		<p>some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p> <p>Classify solutions using indicators and pH values.</p>	
<b>BC3</b>	<p>Scores 25%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in simple drawings.</p> <p>Describe the differences between tissues, organs and organ systems, giving examples of each.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Know the path of the sun through the sky during a day.</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p> <p>State what diffusion is</p>	<p>Scores 25%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus.</p> <p>State the functions of key parts of the reproductive system.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Name some soluble and insoluble solids; describe how pure water can be obtained from sea water</p> <p>Identify circuit components by their symbols.</p> <p>Represent a simple circuit with a diagram.</p> <p>Identify ways to be safe around electricity</p> <p>Investigate and fix some faulty circuits.</p>	<p>Scores 25%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>To know what conditions are needed for iron to rust and how rusting can be prevented</p> <p>State the original source of our energy</p> <p>State the units for energy</p> <p>Give examples of energy stores</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p> <p>Describe what a gravitational field is.</p>	<p>Scores 25%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Identify similarities and differences between predators and prey.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p> <p>Describe how to deal with hazards.</p>	<p>Can identify all key variables, lists all equipment in a practical confidently, can identify all the hazards in an experiment, results are in a table and units are correct and can plot a line graph and bar chart with little guidance.</p>

<b>BC2</b>	<p>Scores 18%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells.</p> <p>Make observations using a microscope and record them in simple drawings.</p> <p>Name the planets in order</p> <p>Know why we have day and night</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p> <p>Describe how solids, liquids and gases change from one state to another.</p>	<p>Scores 18%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Know the length of pregnancy and describe the changes in the foetus.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p>Identify circuit components by their symbols.</p> <p>Represent a simple circuit with a diagram.</p> <p>Identify ways to be safe around electricity</p>	<p>Scores 18%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>State the original source of our energy</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p> <p>Describe and give examples of friction.</p>	<p>Scores 18%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Identify the need for animals to adapt to their environment.</p> <p>Name some common acids and alkalis stating some everyday uses. Describe some hazards of acids and alkalis</p>	<p>Can identify two or more variables, can list equipment in an experiment confidently, identifies two or more hazards in an experiment, can add units in a results table, plot points on a graph and draw bars in a bar chart with some guidance.</p>
<b>BC1</b>	<p>Scores 8%+ on the module 1 assessment</p> <p>Identify and name features of cells and describe some differences between plant and animal cells</p> <p>Name the planets in order</p> <p>Classify materials as solid, liquid or gas and recognise that materials are made out of particles</p>	<p>Scores 8%+ on the module 2 assessment</p> <p>Names the common parts of the male and female reproductive system.</p> <p>Using the particle model, classify materials as solid, liquid or gas</p> <p>Identify circuit components by their symbols.</p> <p>Represent a simple circuit with a diagram.</p>	<p>Scores 8%+ on the module 3 assessment</p> <p>To identify the difference between physical and chemical reactions.</p> <p>State the original source of our energy</p> <p>Identify contact and non-contact forces.</p> <p>Describe the relationship between weight, mass and gravity.</p>	<p>Scores 8%+ on the module 4 assessment</p> <p>Identify similarities and differences in organisms of the same species and attribute these to environmental or inherited factors.</p> <p>Name some common acids and alkalis stating some everyday uses.</p>	<p>Can identify one variable to control, can list equipment in experiments, can identify one hazard during a practical, can fill in a results table and plot points on a graph with guidance.</p>

**Brockington Science Department Year 8- foundation**

Y8	<b>Module 1: Digestion Elements and the periodic table Mathematical skills</b>	<b>Module 2: Breathing and respiration Earth's structure Magnetism and electromagnetism</b>	<b>Module 3: Heating and cooling Earth climate Light</b>	<b>Module 4: Sound Interdependence Speed</b>	<b>Working scientifically: skills in science</b>
BC9					
BC8					
BC7					
BC6					
BC5	<p>Scores 75%+ on the module 1 assessment</p> <p>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</p> <p>Use a model to describe how large molecules are broken down during digestion.</p> <p>Describe the role of blood in transporting products of digestion around the body.</p> <p>Name some groups of nutrients and identify some examples of foods in which they are found.</p> <p>Describe a balanced diet</p> <p>State what the periodic table is</p>	<p>Scores 75%+ on the module 2 assessment</p> <p>Describe the effect of exercise on heart rate and breathing rate.</p> <p>Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply.</p> <p>Identify similarities in aerobic respiration in plants and animals.</p> <p>Recognise the differences in anaerobic respiration in animals and yeast.</p> <p>Describe the difference between inhaled and exhaled air.</p> <p>State the gases in the Earth's atmosphere</p> <p>State what resources we use from the Earth</p> <p>Describe stages in the carbon cycle.</p> <p>Explain the ways in which humans effect the environment</p>	<p>Scores 75%+ on the module 3 assessment</p> <p>Compare the terms heat and temperature</p> <p>Define evaporation and condensation</p> <p>Define Expansion and Contraction in materials</p> <p>Describe applications of expansion of solids, liquids and gases.</p> <p>Describe a practical you can do to demonstrate what the best conducting material is</p> <p>Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling.</p> <p>The three rock layers inside Earth are the crust, the mantle, and the core.</p>	<p>Scores 75%+ on the module 4 assessment</p> <p>Relate changes in pitch and loudness of making sounds to changes in vibrations</p> <p>Explain how sound travels in longitudinal waves</p> <p>Explain that sound waves cause our eardrums to vibrate and this enables us to hear</p> <p>Recognise that sound cannot travel through a vacuum</p> <p><b>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</b></p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order. Results are recorded in a suitable table and all units are correct. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p> <p>Intervals on the scale increase by equal amounts.</p> <p>Students have independently labelled the axis.</p>

	<p>Know the similarities of elements in the same group Write down symbols on the periodic table Distinguish between elements, compounds and mixtures Balance chemical equations State what mean, median, mode and range mean Round different values to the nearest 10, 100 and 1000. Can round numbers to more than one decimal place. Identify when to draw bar charts or line graphs</p>	<p><b>Describe global warming and greenhouse effect.</b> <b>Explain how we extract metals</b> Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram. Identify objects that will affect a compass needle. Explain how a simple electromagnet can be made. Test how the number of coils affects strength of an electromagnet</p>	<p>Explain weathering as the wearing down of rock by physical, chemical or biological processes. Explain minerals as chemicals that rocks are made from. Explain erosion as weathering of rock and its movement by water, ice or wind (transportation). Explain why a rock has a particular property based on how it was formed. Identify the causes of weathering and erosion and describe how they occur. Construct a labelled diagram to identify the processes of the rock cycle. State what is transferred in a wave Identify whether objects are transparent, translucent or opaque Describe how light travels Be able to explain what reflection is State the law of reflection. Describe a relationship between the angle of refraction and the angle of incidence</p>	<p>Describe the effect on removing an organism from a food web <b>Recognise that the abundance and distribution of organisms is different in different habitats</b> Collect data to estimate the population of target species on the school field Use the formula: speed = distance (m)/time (s) or distance-time graphs, to calculate speed. Show what constant speed looks like on a distance-time graph. Categorise scenarios into acceleration and deceleration Illustrate a journey with changing speed on a distance-time graph, and label changes in motion.</p>	<p>Repeats have been made if this was appropriate.</p>
<p><b>BC4</b></p>	<p>Scores 60%+ on the module 1 assessment Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body. Use a model to describe how large molecules are broken down during digestion.</p>	<p>Scores 60%+ on the module 2 assessment Describe the effect of exercise on heart rate and breathing rate. Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply. Identify similarities in aerobic respiration in plants and animals. Recognise the differences in anaerobic respiration in animals and yeast. State the gases in the Earth's atmosphere</p>	<p>Scores 60%+ on the module 3 assessment Compare the terms heat and temperature Define evaporation and condensation Define Expansion and Contraction in materials Describe applications of expansion of solids, liquids and gases. Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years</p>	<p>Scores 60%+ on the module 4 assessment Relate changes in pitch and loudness of making sounds to changes in vibrations Explain how sound travels in longitudinal waves Explain that sound waves cause our eardrums to vibrate and this enables us to hear <b>Identify and name organisms found in a</b></p>	<p>Uses the correct terms for independent and dependent variables, all steps in a practical are sequenced in a logical order. Results are recorded in a suitable table and units in at least one column are correct. Student has constructed the table independently. No support has been given with regards to working out number of</p>

	<p>Describe the role of blood in transporting products of digestion around the body. Name some groups of nutrients and identify some examples of foods in which they are found.</p> <p>State what the periodic table is Know the similarities of elements in the same group Write down symbols on the periodic table Distinguish between elements, compounds and mixtures <b>State what mean, median, mode and range mean</b> <b>Round different values to the nearest 10, 100 and 1000.</b> <b>Can round numbers to more than one decimal place.</b></p>	<p>State what resources we use from the Earth Describe stages in the carbon cycle. Explain the ways in which humans effect the environment Describe global warming and greenhouse effect.</p> <p>Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram. Identify objects that will affect a compass needle. Explain how a simple electromagnet can be made.</p>	<p>through weathering and erosion, heat and pressure, and melting and cooling. The three rock layers inside Earth are the crust, the mantle, and the core. Explain weathering as the wearing down of rock by physical, chemical or biological processes.</p> <p>Explain minerals as chemicals that rocks are made from. Explain erosion as weathering of rock and its movement by water, ice or wind (transportation). Explain why a rock has a particular property based on how it was formed. Identify the causes of weathering and erosion and describe how they occur. State what is transferred in a wave Identify whether objects are transparent, translucent or opaque Describe how light travels Be able to explain what reflection is State the law of reflection.</p>	<p><b>particular habitat and describe how they are adapted to the environmental conditions</b> <b>Describe the effect on removing an organism from a food web</b> <b>Recognise that the abundance and distribution of organisms is different in different habitats</b> <b>Use the formula: speed = distance (m)/time (s) or distance-time graphs, to calculate speed.</b> <b>Show what constant speed looks like on a distance-time graph.</b> <b>Categorise scenarios into acceleration and deceleration</b></p>	<p>rows or columns or labelling headings Students design their own scale on both axis for a bar chart or line graph. Intervals on the scale increase by equal amounts. Students have independently labelled the axis.</p>
<p><b>BC3</b></p>	<p>Scores 45%+ on the module 1 assessment <b>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</b> <b>Use a model to describe how large molecules are broken down during digestion.</b> <b>Describe the role of blood in transporting products of digestion around the body.</b> <b>State what the periodic table is</b></p>	<p>Scores 45%+ on the module 2 assessment <b>Describe the effect of exercise on heart rate and breathing rate.</b> <b>Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply.</b> <b>Identify similarities in aerobic respiration in plants and animals.</b> <b>State the gases in the Earth's atmosphere</b> <b>State what resources we use from the Earth</b> <b>Describe stages in the carbon cycle.</b> <b>Explain the ways in which humans effect the environment</b></p>	<p>Scores 45%+ on the module 3 assessment <b>Compare the terms heat and temperature</b> <b>Define evaporation and condensation</b> <b>Define Expansion and Contraction in materials</b> Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling. The three rock layers inside Earth are the crust, the mantle, and the core.</p>	<p>Scores 45%+ on the module 4 assessment Relate changes in pitch and loudness of making sounds to changes in vibrations Explain how sound travels in longitudinal waves <b>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</b> <b>Describe the effect on removing an organism from a food web</b></p>	<p>Can identify all key variables, lists all equipment in a practical confidently, can identify all the hazards in an experiment, results are in a table and units are correct and can plot a line graph and bar chart with little guidance.</p>

	<p>Know the similarities of elements in the same group Write down symbols on the periodic table <b>State what mean, median, mode and range mean</b> Round different values to the nearest 10, 100 and 1000.</p>	<p>Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram. Identify objects that will affect a compass needle.</p>	<p>Explain weathering as the wearing down of rock by physical, chemical or biological processes. Explain minerals as chemicals that rocks are made from. Explain erosion as weathering of rock and its movement by water, ice or wind (transportation). Explain why a rock has a particular property based on how it was formed. State what is transferred in a wave Identify whether objects are transparent, translucent or opaque Describe how light travels Be able to explain what reflection is</p>	<p>Use the formula: <math>\text{speed} = \frac{\text{distance (m)}}{\text{time (s)}}</math> or distance-time graphs, to calculate speed. Show what constant speed looks like on a distance-time graph.</p>	
<p><b>BC2</b></p>	<p>Scores 30%+ on the module 1 assessment Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body. Use a model to describe how large molecules are broken down during digestion. State what the periodic table is Know the similarities of elements in the same group <b>State what mean, median, mode and range mean</b></p>	<p>Scores 30%+ on the module 2 assessment Describe the effect of exercise on heart rate and breathing rate. Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply. State the gases in the Earth's atmosphere State what resources we use from the Earth Describe stages in the carbon cycle. Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram.</p>	<p>Scores 30%+ on the module 3 assessment <b>Compare the terms heat and temperature</b> <b>Define evaporation and condensation</b> Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling. The three rock layers inside Earth are the crust, the mantle, and the core. Explain weathering as the wearing down of rock by physical, chemical or biological processes. Explain minerals as chemicals that rocks are made from. Explain erosion as weathering of rock and its movement by water, ice or wind (transportation). State what is transferred in a wave Identify whether objects are transparent, translucent or opaque</p>	<p>Scores 30%+ on the module 4 assessment Relate changes in pitch and loudness of making sounds to changes in vibrations <b>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</b> Use the formula: <math>\text{speed} = \frac{\text{distance (m)}}{\text{time (s)}}</math> or distance-time graphs, to calculate speed.</p>	<p>Can identify two or more variables, can list equipment in an experiment confidently, identifies two or more hazards in an experiment, can add units in a results table, plot points on a graph and draw bars in a bar chart with some guidance.</p>

			Describe how light travels		
<b>BC1</b>	<p>Scores 15%+ on the module 1 assessment</p> <p>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</p> <p>State what the periodic table is</p> <p>State what mean, median, mode and range mean</p>	<p>Scores 15%+ on the module 2 assessment</p> <p>Describe the effect of exercise on heart rate and breathing rate.</p> <p>State what resources we use from the Earth</p> <p>Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching.</p> <p>Identify magnetic materials and recognise that the push and pull of the magnets is a force.</p> <p>Show the magnetic field around a magnet using iron filings and represent this as a diagram.</p>	<p>Scores 15%+ on the module 3 assessment</p> <p>Compare the terms heat and temperature</p> <p>Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling. The three rock layers inside Earth are the crust, the mantle, and the core. Explain weathering as the wearing down of rock by physical, chemical or biological processes.</p> <p>Explain minerals as chemicals that rocks are made from.</p> <p>State what is transferred in a wave</p> <p>Identify whether objects are transparent, translucent or opaque</p> <p>Describe how light travels</p>	<p>Scores 15%+ on the module 4 assessment</p> <p>Relate changes in pitch and loudness of making sounds to changes in vibrations</p> <p>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</p> <p>Use the formula: <math>\text{speed} = \frac{\text{distance (m)}}{\text{time (s)}}</math> or distance-time graphs, to calculate speed.</p>	<p>Can identify one variable to control, can list equipment in experiments, can identify one hazard during a practical, can fill in a results table and plot points on a graph with guidance.</p>



**Brockington Science Department Year 8- higher**

<b>Y8</b>	<b>Module 1: Digestion Elements and the periodic table Mathematical skills</b>	<b>Module 2: Breathing and respiration Earth's structure Magnetism and electromagnetism</b>	<b>Module 3: Heating and cooling Earth climate Light</b>	<b>Module 4: Sound Interdependence Speed</b>	<b>Working scientifically: skills in science</b>
<b>BC9</b>	<p>Scores 90%+ on the module 1 assessment</p> <p>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</p> <p>Use a model to describe how large molecules are broken down during digestion.</p> <p>Describe the role of blood in transporting products of digestion around the body.</p> <p>Name some groups of nutrients and identify some examples of foods in which they are found.</p> <p>Describe a balanced diet</p> <p>Recognise that blood transports products of digestion around the body.</p> <p>Explain why some nutrients have to be broken down before they can be used by the body and why some foods cannot be digested by humans.</p> <p>State what the periodic table is</p> <p>Know the similarities of elements in the same group</p> <p>Write down symbols on the periodic table</p>	<p>Scores 90%+ on the module 2 assessment</p> <p>Describe the effect of exercise on heart rate and breathing rate.</p> <p>Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply.</p> <p>Identify similarities in aerobic respiration in plants and animals.</p> <p>Recognise the differences in anaerobic respiration in animals and yeast.</p> <p>Describe the difference between inhaled and exhaled air.</p> <p>Represent the process of aerobic respiration as a word and/symbol equation and identify similarities with the burning of fuels.</p> <p>Describe the features of the alveoli and explain how damaged alveoli result in less gas exchange.</p> <p><b>State the gases in the Earth's atmosphere</b></p> <p><b>State what resources we use from the Earth</b></p> <p><b>Describe stages in the carbon cycle.</b></p> <p><b>Explain the ways in which humans effect the environment</b></p> <p><b>Describe global warming and greenhouse effect.</b></p> <p><b>Explain how we extract metals</b></p> <p><b>Evaluate the methods used for extracting metals</b></p>	<p>Scores 90%+ on the module 3 assessment</p> <p><b>Compare the terms heat and temperature</b></p> <p><b>Define evaporation and condensation</b></p> <p><b>Define Expansion and Contraction in materials</b></p> <p><b>Describe applications of expansion of solids, liquids and gases.</b></p> <p><b>Describe a practical you can do to demonstrate what the best conducting material is</b></p> <p><b>Describe how a vacuum flask works</b></p> <p>Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling.</p> <p>The three rock layers inside Earth are the crust, the mantle, and the core.</p> <p>Explain weathering as the wearing down of rock by physical, chemical or biological processes.</p> <p>Explain minerals as chemicals that rocks are made from.</p> <p>Explain erosion as weathering of rock and its movement by water, ice or wind (transportation).</p> <p>Explain why a rock has a particular property based on how it was formed.</p> <p>Identify the causes of weathering and erosion and describe how they occur.</p>	<p>Scores 90%+ on the module 4 assessment</p> <p>Relate changes in pitch and loudness of making sounds to changes in vibrations</p> <p>Explain how sound travels in longitudinal waves</p> <p>Explain that sound waves cause our eardrums to vibrate and this enables us to hear</p> <p>Recognise that sound cannot travel through a vacuum</p> <p>Suggest the effect of particular ear problems on a person's hearing</p> <p>Use the particle theory to explain how sound travels through or is absorbed by different</p> <p><b>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</b></p> <p><b>Describe the effect on removing an organism from a food web</b></p> <p><b>Recognise that the abundance and distribution</b></p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order.</p> <p>Results are recorded in a suitable table and all units are correct.</p> <p>Student explains how each variable will be controlled and how it will affect the results if it was not controlled.</p> <p>Student explains why the data collection method they have chosen is the best for giving reproducible and precise results.</p> <p>Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings.</p> <p>Student has said to repeat each experiment at least 3 times to get valid results. If repeat are not appropriate, student has explained why.</p> <p>If repeats were recorded, a mean value has been calculated.</p> <p>Student has identified anomalous results and has</p>

	<p>Distinguish between elements, compounds and mixtures Balance chemical equations Explain why we balance equations. Explain mass changes that occur in chemical reactions <b>State what mean, median, mode and range mean</b> <b>Round different values to the nearest 10, 100 and 1000.</b> <b>Can round numbers to more than one decimal place.</b> <b>Identify when to draw bar charts or line graphs</b> <b>Interpret comparative bar charts</b> <b>Write numbers in standard form and use these in various problems</b></p>	<p><b>Explain problems associated with global warming</b> Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram. Identify objects that will affect a compass needle. Explain how a simple electromagnet can be made. Test how the number of coils affects strength of an electromagnet Plot a graph of number of coils against paper clips picked up. Be able to describe the 'motor effect' and how to make a simple motor.</p>	<p>Construct a labelled diagram to identify the processes of the rock cycle. Identify circumstances that indicate fast processes of change on Earth and those that indicate slower processes. Predict planetary conditions from descriptions of rocks on other planets. State what is transferred in a wave Identify whether objects are transparent, translucent or opaque Describe how light travels Be able to explain what reflection is State the law of reflection. Describe a relationship between the angle of refraction and the angle of incidence Identify the colours of the spectrum that are visible during dispersion. Be able to identify some common uses for lenses</p>	<p>of organisms is different in different habitats <b>Collect data to estimate the population of target species on the school field</b> <b>Explain how pyramids of biomass represent feeding relationships in a habitat</b> <b>Explain how bioaccumulation of chemicals can occur in food chains</b> <b>Use the formula: speed = distance (m)/time (s) or distance-time graphs, to calculate speed.</b> <b>Show what constant speed looks like on a distance-time graph.</b> <b>Categorise scenarios into acceleration and deceleration</b> <b>Illustrate a journey with changing speed on a distance-time graph, and label changes in motion.</b> <b>Suggest how the motion of two objects moving at different speeds in the same direction would appear to the other</b> <b>Predict changes in an object's speed when the forces on it change.</b></p>	<p><u>not</u> included them when calculating the mean values. Students design their own scale on both axis for a bar chart or line graph. Intervals on the scale increase by equal amounts. Students have independently labelled the axis.</p>
<b>BC8</b>	<p>Scores 78%+ on the module 1 assessment <b>Name nutrients, fibre and water as part of a balanced</b></p>	<p>Scores 78%+ on the module 2 assessment <b>Describe the effect of exercise on heart rate and breathing rate.</b></p>	<p>Scores 78%+ on the module 3 assessment <b>Compare the terms heat and temperature</b></p>	<p>Scores 78%+ on the module 4 assessment</p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order. Results are recorded in a</p>

	<p>diet, identifying examples of food in which they are found and describe the role of each in the body. Use a model to describe how large molecules are broken down during digestion. Describe the role of blood in transporting products of digestion around the body. Name some groups of nutrients and identify some examples of foods in which they are found. Describe a balanced diet Recognise that blood transports products of digestion around the body. Explain why some nutrients have to be broken down before they can be used by the body and why some foods cannot be digested by humans. State what the periodic table is Know the similarities of elements in the same group Write down symbols on the periodic table Distinguish between elements, compounds and mixtures Balance chemical equations Explain why we balance equations. Explain mass changes that occur in chemical reactions <b>State what mean, median, mode and range mean</b> <b>Round different values to the nearest 10, 100 and 1000.</b></p>	<p>Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply. Identify similarities in aerobic respiration in plants and animals. Recognise the differences in anaerobic respiration in animals and yeast. Describe the difference between inhaled and exhaled air. Represent the process of aerobic respiration as a word and/symbol equation and identify similarities with the burning of fuels. Describe the features of the alveoli and explain how damaged alveoli result in less gas exchange. State the gases in the Earth's atmosphere State what resources we use from the Earth Describe stages in the carbon cycle. Explain the ways in which humans effect the environment Describe global warming and greenhouse effect. Explain how we extract metals Evaluate the methods used for extracting metals Explain problems associated with global warming Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram.</p>	<p>Define evaporation and condensation Define Expansion and Contraction in materials Describe applications of expansion of solids, liquids and gases. Describe a practical you can do to demonstrate what the best conducting material is Describe how a vacuum flask works Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling. The three rock layers inside Earth are the crust, the mantle, and the core. Explain weathering as the wearing down of rock by physical, chemical or biological processes. Explain minerals as chemicals that rocks are made from. Explain erosion as weathering of rock and its movement by water, ice or wind (transportation). Explain why a rock has a particular property based on how it was formed. Identify the causes of weathering and erosion and describe how they occur. Construct a labelled diagram to identify the processes of the rock cycle. Identify circumstances that indicate fast processes of change on Earth and those that indicate slower processes. Predict planetary conditions from descriptions of rocks on other planets. State what is transferred in a wave Identify whether objects are transparent, translucent or opaque Describe how light travels Be able to explain what reflection is</p>	<p>Relate changes in pitch and loudness of making sounds to changes in vibrations Explain how sound travels in longitudinal waves Explain that sound waves cause our eardrums to vibrate and this enables us to hear Recognise that sound cannot travel through a vacuum Suggest the effect of particular ear problems on a person's hearing Use the particle theory to explain how sound travels through or is absorbed by different <b>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</b> <b>Describe the effect on removing an organism from a food web</b> <b>Recognise that the abundance and distribution of organisms is different in different habitats</b> <b>Collect data to estimate the population of target species on the school field</b> <b>Explain how pyramids of biomass represent feeding relationships in a habitat</b> <b>Explain how bioaccumulation of</b></p>	<p>suitable table and all units are correct. Student explains how each variable will be controlled and how it will affect the results if it was not controlled. Student explains why the data collection method they have chosen is the best for giving reproducible and precise results. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings. Student has said to repeat each experiment at least 3 times to get valid results. If repeat are not appropriate, student has explained why. If repeats were recorded, a mean value has been calculated. Student has identified anomalous results and has <u>not</u> included them when calculating the mean values. Students design their own scale on both axis for a bar chart or line graph. Intervals on the scale increase by equal amounts. Students have independently labelled the axis.</p>
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	<p>Can round numbers to more than one decimal place. Identify when to draw bar charts or line graphs Interpret comparative bar charts Write numbers in standard form and use these in various problems</p>	<p>Identify objects that will affect a compass needle. Explain how a simple electromagnet can be made. Test how the number of coils affects strength of an electromagnet Plot a graph of number of coils against paper clips picked up. Be able to describe the 'motor effect' and how to make a simple motor.</p>	<p>State the law of reflection. Describe a relationship between the angle of refraction and the angle of incidence Identify the colours of the spectrum that are visible during dispersion. Be able to identify some common uses for lenses</p>	<p>chemicals can occur in food chains Use the formula: <math>\text{speed} = \frac{\text{distance (m)}}{\text{time (s)}}</math> or distance-time graphs, to calculate speed. Show what constant speed looks like on a distance-time graph. Categorise scenarios into acceleration and deceleration Illustrate a journey with changing speed on a distance-time graph, and label changes in motion. Suggest how the motion of two objects moving at different speeds in the same direction would appear to the other Predict changes in an object's speed when the forces on it change.</p>	
<p><b>BC7</b></p>	<p>Scores 63%+ on the module 1 assessment Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body. Use a model to describe how large molecules are broken down during digestion. Describe the role of blood in transporting products of digestion around the body.</p>	<p>Scores 63%+ on the module 2 assessment Describe the effect of exercise on heart rate and breathing rate. Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply. Identify similarities in aerobic respiration in plants and animals. Recognise the differences in anaerobic respiration in animals and yeast. Describe the difference between inhaled and exhaled air.</p>	<p>Scores 63%+ on the module 3 assessment Compare the terms heat and temperature Define evaporation and condensation Define Expansion and Contraction in materials Describe applications of expansion of solids, liquids and gases. Describe a practical you can do to demonstrate what the best conducting material is Describe how a vacuum flask works</p>	<p>Scores 63%+ on the module 4 assessment Relate changes in pitch and loudness of making sounds to changes in vibrations Explain how sound travels in longitudinal waves Explain that sound waves cause our eardrums to vibrate and this enables us to hear Recognise that sound cannot travel through a vacuum</p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order. Results are recorded in a suitable table and all units are correct. Student explains how each variable will be controlled and how it will affect the results if it was not controlled. Student has constructed the table independently. No support has been given with</p>

	<p>Name some groups of nutrients and identify some examples of foods in which they are found. Describe a balanced diet Recognise that blood transports products of digestion around the body. Explain why some nutrients have to be broken down before they can be used by the body and why some foods cannot be digested by humans. State what the periodic table is Know the similarities of elements in the same group Write down symbols on the periodic table Distinguish between elements, compounds and mixtures Balance chemical equations Explain why we balance equations. Explain mass changes that occur in chemical reactions <b>State what mean, median, mode and range mean</b> <b>Round different values to the nearest 10, 100 and 1000.</b> Can round numbers to more than one decimal place. Identify when to draw bar charts or line graphs Interpret comparative bar charts Write numbers in standard form and use these in various problems</p>	<p>Represent the process of aerobic respiration as a word and/symbol equation and identify similarities with the burning of fuels. Describe the features of the alveoli and explain how damaged alveoli result in less gas exchange. State the gases in the Earth's atmosphere State what resources we use from the Earth Describe stages in the carbon cycle. Explain the ways in which humans effect the environment Describe global warming and greenhouse effect. Explain how we extract metals Evaluate the methods used for extracting metals Explain problems associated with global warming Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram. Identify objects that will affect a compass needle. Explain how a simple electromagnet can be made. Test how the number of coils affects strength of an electromagnet Plot a graph of number of coils against paper clips picked up.</p>	<p>Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling. The three rock layers inside Earth are the crust, the mantle, and the core. Explain weathering as the wearing down of rock by physical, chemical or biological processes. Explain minerals as chemicals that rocks are made from. Explain erosion as weathering of rock and its movement by water, ice or wind (transportation). Explain why a rock has a particular property based on how it was formed. Identify the causes of weathering and erosion and describe how they occur. Construct a labelled diagram to identify the processes of the rock cycle. Identify circumstances that indicate fast processes of change on Earth and those that indicate slower processes. Predict planetary conditions from descriptions of rocks on other planets. State what is transferred in a wave Identify whether objects are transparent, translucent or opaque Describe how light travels Be able to explain what reflection is State the law of reflection. Describe a relationship between the angle of refraction and the angle of incidence Identify the colours of the spectrum that are visible during dispersion. Be able to identify some common uses for lenses</p>	<p>Suggest the effect of particular ear problems on a person's hearing Use the particle theory to explain how sound travels through or is absorbed by different <b>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</b> <b>Describe the effect on removing an organism from a food web</b> <b>Recognise that the abundance and distribution of organisms is different in different habitats</b> <b>Collect data to estimate the population of target species on the school field</b> <b>Explain how pyramids of biomass represent feeding relationships in a habitat</b> <b>Explain how bioaccumulation of chemicals can occur in food chains</b> Use the formula: <math>\text{speed} = \frac{\text{distance (m)}}{\text{time (s)}}</math> or distance-time graphs, to calculate speed. Show what constant speed looks like on a distance-time graph. Categorise scenarios into acceleration and deceleration</p>	<p>regards to working out number of rows or columns or labelling headings. Student has said to repeat each experiment at least 3 times to get valid results. If repeat are not appropriate, student has explained why. If repeats were recorded, a mean value has been calculated. Student has identified anomalous results and has <u>not</u> included them when calculating the mean values. Students design their own scale on both axis for a bar chart or line graph. Intervals on the scale increase by equal amounts. Students have independently labelled the axis.</p>
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		Be able to describe the 'motor effect' and how to make a simple motor.		Illustrate a journey with changing speed on a distance-time graph, and label changes in motion. Suggest how the motion of two objects moving at different speeds in the same direction would appear to the other Predict changes in an object's speed when the forces on it change.	
<b>BC6</b>	<p>Scores 57%+ on the module 1 assessment</p> <p>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</p> <p>Use a model to describe how large molecules are broken down during digestion.</p> <p>Describe the role of blood in transporting products of digestion around the body.</p> <p>Name some groups of nutrients and identify some examples of foods in which they are found.</p> <p>Describe a balanced diet</p> <p>Recognise that blood transports products of digestion around the body.</p> <p>State what the periodic table is</p> <p>Know the similarities of elements in the same group</p>	<p>Scores 57%+ on the module 2 assessment</p> <p>Describe the effect of exercise on heart rate and breathing rate.</p> <p>Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply.</p> <p>Identify similarities in aerobic respiration in plants and animals.</p> <p>Recognise the differences in anaerobic respiration in animals and yeast.</p> <p>Describe the difference between inhaled and exhaled air.</p> <p>Represent the process of aerobic respiration as a word and/symbol equation and identify similarities with the burning of fuels.</p> <p>State the gases in the Earth's atmosphere</p> <p>State what resources we use from the Earth</p> <p>Describe stages in the carbon cycle.</p> <p>Explain the ways in which humans effect the environment</p> <p>Describe global warming and greenhouse effect.</p>	<p>Scores 57%+ on the module 3 assessment</p> <p>Compare the terms heat and temperature</p> <p>Define evaporation and condensation</p> <p>Define Expansion and Contraction in materials</p> <p>Describe applications of expansion of solids, liquids and gases.</p> <p>Describe a practical you can do to demonstrate what the best conducting material is</p> <p>Describe how a vacuum flask works</p> <p>Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling.</p> <p>The three rock layers inside Earth are the crust, the mantle, and the core.</p> <p>Explain weathering as the wearing down of rock by physical, chemical or biological processes.</p> <p>Explain minerals as chemicals that rocks are made from.</p>	<p>Scores 57%+ on the module 4 assessment</p> <p>Relate changes in pitch and loudness of making sounds to changes in vibrations</p> <p>Explain how sound travels in longitudinal waves</p> <p>Explain that sound waves cause our eardrums to vibrate and this enables us to hear</p> <p>Recognise that sound cannot travel through a vacuum</p> <p>Suggest the effect of particular ear problems on a person's hearing</p> <p>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</p> <p>Describe the effect on removing an organism from a food web</p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order.</p> <p>Results are recorded in a suitable table and all units are correct. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings.</p> <p>Student has said to repeat each experiment at least 3 times to get valid results. If repeat are not appropriate, student has explained why.</p> <p>If repeats were recorded, a mean value has been calculated.</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p> <p>Intervals on the scale increase by equal amounts.</p>

	<p>Write down symbols on the periodic table Distinguish between elements, compounds and mixtures Balance chemical equations Explain why we balance equations. State what mean, median, mode and range mean Round different values to the nearest 10, 100 and 1000. Can round numbers to more than one decimal place. Identify when to draw bar charts or line graphs Interpret comparative bar charts</p>	<p><b>Explain how we extract metals</b> <b>Evaluate the methods used for extracting metals</b> Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram. Identify objects that will affect a compass needle. Explain how a simple electromagnet can be made. Test how the number of coils affects strength of an electromagnet Plot a graph of number of coils against paper clips picked up.</p>	<p>Explain erosion as weathering of rock and its movement by water, ice or wind (transportation). Explain why a rock has a particular property based on how it was formed. Identify the causes of weathering and erosion and describe how they occur. Construct a labelled diagram to identify the processes of the rock cycle. Identify circumstances that indicate fast processes of change on Earth and those that indicate slower processes. State what is transferred in a wave Identify whether objects are transparent, translucent or opaque Describe how light travels Be able to explain what reflection is State the law of reflection. Describe a relationship between the angle of refraction and the angle of incidence Identify the colours of the spectrum that are visible during dispersion.</p>	<p>Recognise that the abundance and distribution of organisms is different in different habitats Collect data to estimate the population of target species on the school field Explain how pyramids of biomass represent feeding relationships in a habitat Use the formula: speed = distance (m)/time (s) or distance-time graphs, to calculate speed. Show what constant speed looks like on a distance-time graph. Categorise scenarios into acceleration and deceleration Illustrate a journey with changing speed on a distance-time graph, and label changes in motion. Suggest how the motion of two objects moving at different speeds in the same direction would appear to the other</p>	<p>Students have independently labelled the axis.</p>
<p><b>BC5</b></p>	<p>Scores 42%+ on the module 1 assessment Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</p>	<p>Scores 42%+ on the module 2 assessment Describe the effect of exercise on heart rate and breathing rate. Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply.</p>	<p>Scores 42%+ on the module 3 assessment Compare the terms heat and temperature Define evaporation and condensation Define Expansion and Contraction in materials</p>	<p>Scores 42%+ on the module 4 assessment Relate changes in pitch and loudness of making sounds to changes in vibrations Explain how sound travels in longitudinal waves</p>	<p>Identifies all key variables, all steps in a practical are sequenced in a logical order. Results are recorded in a suitable table and all units are correct. Student has constructed the table independently. No support</p>

	<p>Use a model to describe how large molecules are broken down during digestion. Describe the role of blood in transporting products of digestion around the body. Name some groups of nutrients and identify some examples of foods in which they are found. Describe a balanced diet State what the periodic table is Know the similarities of elements in the same group Write down symbols on the periodic table Distinguish between elements, compounds and mixtures Balance chemical equations State what mean, median, mode and range mean Round different values to the nearest 10, 100 and 1000. Can round numbers to more than one decimal place. Identify when to draw bar charts or line graphs</p>	<p>Identify similarities in aerobic respiration in plants and animals. Recognise the differences in anaerobic respiration in animals and yeast. Describe the difference between inhaled and exhaled air. State the gases in the Earth's atmosphere State what resources we use from the Earth Describe stages in the carbon cycle. Explain the ways in which humans effect the environment Describe global warming and greenhouse effect. Explain how we extract metals Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching. Identify magnetic materials and recognise that the push and pull of the magnets is a force. Show the magnetic field around a magnet using iron filings and represent this as a diagram. Identify objects that will affect a compass needle. Explain how a simple electromagnet can be made. Test how the number of coils affects strength of an electromagnet</p>	<p>Describe applications of expansion of solids, liquids and gases. Describe a practical you can do to demonstrate what the best conducting material is Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling. The three rock layers inside Earth are the crust, the mantle, and the core. Explain weathering as the wearing down of rock by physical, chemical or biological processes. Explain minerals as chemicals that rocks are made from. Explain erosion as weathering of rock and its movement by water, ice or wind (transportation). Explain why a rock has a particular property based on how it was formed. Identify the causes of weathering and erosion and describe how they occur. Construct a labelled diagram to identify the processes of the rock cycle. State what is transferred in a wave Identify whether objects are transparent, translucent or opaque Describe how light travels Be able to explain what reflection is State the law of reflection. Describe a relationship between the angle of refraction and the angle of incidence</p>	<p>Explain that sound waves cause our eardrums to vibrate and this enables us to hear Recognise that sound cannot travel through a vacuum Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions Describe the effect on removing an organism from a food web Recognise that the abundance and distribution of organisms is different in different habitats Collect data to estimate the population of target species on the school field Use the formula: speed = distance (m)/time (s) or distance-time graphs, to calculate speed. Show what constant speed looks like on a distance-time graph. Categorise scenarios into acceleration and deceleration Illustrate a journey with changing speed on a distance-time graph, and label changes in motion.</p>	<p>has been given with regards to working out number of rows or columns or labelling headings Students design their own scale on both axis for a bar chart or line graph. Intervals on the scale increase by equal amounts. Students have independently labelled the axis. Repeats have been made if this was appropriate.</p>
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<p><b>BC4</b></p>	<p>Scores 33%+ on the module 1 assessment</p> <p>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</p> <p>Use a model to describe how large molecules are broken down during digestion.</p> <p>Describe the role of blood in transporting products of digestion around the body.</p> <p>Name some groups of nutrients and identify some examples of foods in which they are found.</p> <p>State what the periodic table is</p> <p>Know the similarities of elements in the same group</p> <p>Write down symbols on the periodic table</p> <p>Distinguish between elements, compounds and mixtures</p> <p>State what mean, median, mode and range mean</p> <p>Round different values to the nearest 10, 100 and 1000.</p> <p>Can round numbers to more than one decimal place.</p>	<p>Scores 33%+ on the module 2 assessment</p> <p>Describe the effect of exercise on heart rate and breathing rate.</p> <p>Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply.</p> <p>Identify similarities in aerobic respiration in plants and animals.</p> <p>Recognise the differences in anaerobic respiration in animals and yeast.</p> <p>State the gases in the Earth's atmosphere</p> <p>State what resources we use from the Earth</p> <p>Describe stages in the carbon cycle.</p> <p>Explain the ways in which humans effect the environment</p> <p>Describe global warming and greenhouse effect.</p> <p>Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching.</p> <p>Identify magnetic materials and recognise that the push and pull of the magnets is a force.</p> <p>Show the magnetic field around a magnet using iron filings and represent this as a diagram.</p> <p>Identify objects that will affect a compass needle.</p> <p>Explain how a simple electromagnet can be made.</p>	<p>Scores 33%+ on the module 3 assessment</p> <p>Compare the terms heat and temperature</p> <p>Define evaporation and condensation</p> <p>Define Expansion and Contraction in materials</p> <p>Describe applications of expansion of solids, liquids and gases.</p> <p>Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling.</p> <p>The three rock layers inside Earth are the crust, the mantle, and the core.</p> <p>Explain weathering as the wearing down of rock by physical, chemical or biological processes.</p> <p>Explain minerals as chemicals that rocks are made from.</p> <p>Explain erosion as weathering of rock and its movement by water, ice or wind (transportation).</p> <p>Explain why a rock has a particular property based on how it was formed.</p> <p>Identify the causes of weathering and erosion and describe how they occur.</p> <p>State what is transferred in a wave</p> <p>Identify whether objects are transparent, translucent or opaque</p> <p>Describe how light travels</p> <p>Be able to explain what reflection is</p> <p>State the law of reflection.</p>	<p>Scores 33%+ on the module 4 assessment</p> <p>Relate changes in pitch and loudness of making sounds to changes in vibrations</p> <p>Explain how sound travels in longitudinal waves</p> <p>Explain that sound waves cause our eardrums to vibrate and this enables us to hear</p> <p>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</p> <p>Describe the effect on removing an organism from a food web</p> <p>Recognise that the abundance and distribution of organisms is different in different habitats</p> <p>Use the formula: <math>speed = \frac{distance (m)}{time (s)}</math> or distance-time graphs, to calculate speed.</p> <p>Show what constant speed looks like on a distance-time graph.</p> <p>Categorise scenarios into acceleration and deceleration</p>	<p>Uses the correct terms for independent and dependent variables, all steps in a practical are sequenced in a logical order. Results are recorded in a suitable table and units in at least one column are correct. Student has constructed the table independently. No support has been given with regards to working out number of rows or columns or labelling headings</p> <p>Students design their own scale on both axis for a bar chart or line graph.</p> <p>Intervals on the scale increase by equal amounts.</p> <p>Students have independently labelled the axis.</p>
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<p><b>BC3</b></p>	<p>Scores 25%+ on the module 1 assessment  <b>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</b>          Use a model to describe how large molecules are broken down during digestion.          Describe the role of blood in transporting products of digestion around the body.          State what the periodic table is          Know the similarities of elements in the same group          Write down symbols on the periodic table          State what mean, median, mode and range mean          Round different values to the nearest 10, 100 and 1000.</p>	<p>Scores 25%+ on the module 2 assessment  <b>Describe the effect of exercise on heart rate and breathing rate.</b>  <b>Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply.</b>          Identify similarities in aerobic respiration in plants and animals.          State the gases in the Earth's atmosphere          State what resources we use from the Earth          Describe stages in the carbon cycle.  <b>Explain the ways in which humans effect the environment</b>          Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching.          Identify magnetic materials and recognise that the push and pull of the magnets is a force.          Show the magnetic field around a magnet using iron filings and represent this as a diagram.          Identify objects that will affect a compass needle.</p>	<p>Scores 25%+ on the module 3 assessment  <b>Compare the terms heat and temperature</b>  <b>Define evaporation and condensation</b>  <b>Define Expansion and Contraction in materials</b>          Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling.          The three rock layers inside Earth are the crust, the mantle, and the core.          Explain weathering as the wearing down of rock by physical, chemical or biological processes.          Explain minerals as chemicals that rocks are made from.          Explain erosion as weathering of rock and its movement by water, ice or wind (transportation).          Explain why a rock has a particular property based on how it was formed.          State what is transferred in a wave          Identify whether objects are transparent, translucent or opaque          Describe how light travels          Be able to explain what reflection is</p>	<p>Scores 25%+ on the module 4 assessment          Relate changes in pitch and loudness of making sounds to changes in vibrations          Explain how sound travels in longitudinal waves  <b>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</b>  <b>Describe the effect on removing an organism from a food web</b>          Use the formula: <math>speed = \frac{distance (m)}{time (s)}</math> or distance-time graphs, to calculate speed.  <b>Show what constant speed looks like on a distance-time graph.</b></p>	<p>Can identify all key variables, lists all equipment in a practical confidently, can identify all the hazards in an experiment, results are in a table and units are correct and can plot a line graph and bar chart with little guidance.</p>
<p><b>BC2</b></p>	<p>Scores 18%+ on the module 1 assessment  <b>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</b></p>	<p>Scores 18%+ on the module 2 assessment  <b>Describe the effect of exercise on heart rate and breathing rate.</b>  <b>Describe aerobic respiration as a reaction with oxygen and describe effects of inadequate oxygen supply.</b>          State the gases in the Earth's atmosphere</p>	<p>Scores 18%+ on the module 3 assessment  <b>Compare the terms heat and temperature</b>  <b>Define evaporation and condensation</b>          Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years</p>	<p>Scores 18%+ on the module 4 assessment          Relate changes in pitch and loudness of making sounds to changes in vibrations  <b>Identify and name organisms found in a particular habitat and describe how they are</b></p>	<p>Can identify two or more variables, can list equipment in an experiment confidently, identifies two or more hazards in an experiment, can add units in a results table, plot points on a graph and draw bars in</p>

	<p>Use a model to describe how large molecules are broken down during digestion.</p> <p>State what the periodic table is</p> <p>Know the similarities of elements in the same group</p> <p><b>State what mean, median, mode and range mean</b></p>	<p><b>State what resources we use from the Earth</b></p> <p><b>Describe stages in the carbon cycle.</b></p> <p>Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching.</p> <p>Identify magnetic materials and recognise that the push and pull of the magnets is a force.</p> <p>Show the magnetic field around a magnet using iron filings and represent this as a diagram.</p>	<p>through weathering and erosion, heat and pressure, and melting and cooling.</p> <p>The three rock layers inside Earth are the crust, the mantle, and the core.</p> <p>Explain weathering as the wearing down of rock by physical, chemical or biological processes.</p> <p>Explain minerals as chemicals that rocks are made from.</p> <p>Explain erosion as weathering of rock and its movement by water, ice or wind (transportation).</p> <p>State what is transferred in a wave</p> <p>Identify whether objects are transparent, translucent or opaque</p> <p>Describe how light travels</p>	<p>adapted to the environmental conditions</p> <p><b>Use the formula: speed = distance (m)/time (s) or distance-time graphs, to calculate speed.</b></p>	<p>a bar chart with some guidance.</p>
<p><b>BC1</b></p>	<p>Scores 8%+ on the module 1 assessment</p> <p><b>Name nutrients, fibre and water as part of a balanced diet, identifying examples of food in which they are found and describe the role of each in the body.</b></p> <p>State what the periodic table is</p> <p><b>State what mean, median, mode and range mean</b></p>	<p>Scores 8%+ on the module 2 assessment</p> <p><b>Describe the effect of exercise on heart rate and breathing rate.</b></p> <p><b>State what resources we use from the Earth</b></p> <p>Know examples of magnetic and non-magnetic materials and realise that magnets can push or pull without touching.</p> <p>Identify magnetic materials and recognise that the push and pull of the magnets is a force.</p> <p>Show the magnetic field around a magnet using iron filings and represent this as a diagram.</p>	<p>Scores 8%+ on the module 3 assessment</p> <p><b>Compare the terms heat and temperature</b></p> <p>Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling.</p> <p>The three rock layers inside Earth are the crust, the mantle, and the core.</p> <p>Explain weathering as the wearing down of rock by physical, chemical or biological processes.</p> <p>Explain minerals as chemicals that rocks are made from.</p> <p>State what is transferred in a wave</p> <p>Identify whether objects are transparent, translucent or opaque</p> <p>Describe how light travels</p>	<p>Scores 8%+ on the module 4 assessment</p> <p>Relate changes in pitch and loudness of making sounds to changes in vibrations</p> <p><b>Identify and name organisms found in a particular habitat and describe how they are adapted to the environmental conditions</b></p> <p><b>Use the formula: speed = distance (m)/time (s) or distance-time graphs, to calculate speed.</b></p>	<p>Can identify one variable to control, can list equipment in experiments, can identify one hazard during a practical, can fill in a results table and plot points on a graph with guidance.</p>