

TBS Curriculum Map

Year: 11

Subject: Combined science

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | |
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| Theme/Topic | C10 Chemical analysis C11 The Earth's atmosphere C12 Earth's resources B12 Reproduction B13 Variation and evolution B14 Genetics and evolution C10 Organic reactions C11 Polymers C12 Chemical analysis C13 The Earth's atmosphere C14 The Earth's resources C15 Using our resources B12 Homeostasis in action B13 Reproduction B14 Variation and evolution | B15 Adaptation and interdependence B16 Organising an ecosystem B17 Biodiversity and ecosystems B15 Genetics and evolution B16 Adaptations, interdependence and competition. B17 Organising an ecosystem B18 Biodiversity and ecosystems. | P10 Forces and motion P11 Wave properties P12 Electromagnetic waves P13 Electromagnetism. P11 Forces and pressure P12 Wave properties P13 Electromagnetic waves P14 Light P15 Electromagnetism P16 Space | Revision | Revision | | |
| Skills | WS2.2 Plan experiments or device procedures. WS3.1 Present observations and other data using appropriate methods. WS2.3 Apply a knowledge of a range of techniques, instruments, apparatus and materials. MS1c Use ratios, fractions and %. MS1d Make estimates of results. AT8 Use appropriate qualitative reagents and techniques. | WS2.6 Making and recording observations MS2c Interpret frequency diagrams, bar charts, histograms. MS4a Translate graphical to numerical WS1.2 Use models. MS2b Principles of sampling. MS2f Understand mean, median, mode MS4c Plot 2 variables MS1c Ratios, fractions, % | MS1d Make estimates MS3b Change the subject of an equation MS3c Substitute numerical values into algebraic equations MS4a Translate info between graphical and numerical form. MS4b Use $y=mx+c$ MS4c Plot 2 variables. MS4d Determine the slope and intercept of a linear line. | | | | |

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| | <p> WS3.6 Presenting reasoned explanations MS4a Translate between graphical and numerical. WS1.3 Appreciate the power and limitations of science. WS3.5 Interpret observations and other data. WS3.6 Presenting reasoned explanations WS1.6 Importance of peer review. WS1.5 Evaluating risk in practical science. WS1.4 Explain everyday and technological applications of science. WS3.2 Translate data from one form to another. MS2c Construct frequency diagrams, bar charts and histograms. MS4a Translate information from graphical to numerical. MS2h Make order of magnitude calculations WS1.3 Appreciate the power and limitations of science. WS4.5 Interconvert units. MS1a Use expressions in decimal form. MS1c Use ratios, fractions and %. </p> | <p> WS1.4 Explaining everyday and technological applications of science WS1.5 Evaluating risk WS1.6 Peer review WS1.3 Appreciating the power and limitations of science. WS1.2 Use models. MS2c Frequency tables, bar charts, histograms </p> | <p> MS4f Understand the area of a curve and the x axis. WS3.3 WS3.5 Interpret observations and other data. AT1 Use of appropriate apparatus to make and record a range of measurements accurately. AT2 Use of appropriate apparatus to measure and observe effects of forces. MS3a Use symbols <>etc WS4.2 Recognise the importance of scientific quantities. WS1.2 Use models. WS3.3 Mathematical and statistical analysis WS3.7 Evaluate data in terms of accuracy, precision and repeatability. WS1.5 Evaluate risk. WS2.2 Plan experiments and devise procedures. MS1a Use expressions in decimal form MS1c Use ratios, fractions and %. MS1d Make estimates </p> | | | |
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| | <p>MS2a Use appropriate number of sig figs.</p> <p>WS1.1 Using scientific theories and explanations to develop hypotheses</p> <p>WS1.2 Use models</p> <p>AT5 Making and recording appropriate observations during chemical reactions.</p> <p>WS4.1 Use scientific vocab, terminology and definitions.</p> <p>MS5b Visualise and represent 2D and 3D forms.</p> <p>AT2 Use safe and appropriate heating devices and techniques.</p> <p>AT6 Safe use and handling of solids, liquids and gases.</p> <p>WS2.2 Plan experiments or device procedures.</p> | | <p>MS2c Interpret frequency tables, bar charts and histograms.</p> <p>MS2d</p> <p>MS2f Understand mean, median and mode.</p> <p>MS2h Make order of magnitude calculations.</p> <p>AT3 Use of appropriate apparatus and techniques for measuring motion.</p> <p>MS3d Solve algebraic equations.</p> <p>AT4 Making observations of waves in fluids and solids to identify the suitability of apparatus to measure speed, frequency and wavelength.</p> <p>WS2.4 Carry out experiments appropriately, accurately and safely.</p> <p>WS2.6 Make and record observations.</p> <p>WS2.7 Evaluate methods and make improvements.</p> <p>WS3.1 Represent observations and other data appropriately.</p> <p>WS3.5 Interpret observations and other data.</p> | | | |
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| | | | <p>MS1c Use ratios, fractions and %.</p> <p>MS3b Change the subject of an equation.</p> <p>MS3c Substitute numerical values into algebraic equations.</p> <p>MS5a Use angular measures in degrees.</p> <p>MS5c Calculate areas of triangles, rectangles, SA and volume.</p> <p>WS1.2 Use models</p> <p>WS1.4 Explain everyday and technological applications of science.</p> <p>WS1.1 Understand methods and theories develop over time.</p> <p>AT8</p> <p>WS1.3 Appreciate power and limitations of science.</p> | | | |
| <p>Knowledge</p> | <ul style="list-style-type: none"> • Explain how to test for common gases • Explain how paper chromatography is carried out. • Outline how the Earth's atmosphere continually changes over time. • Explain how human influence may have led to changes in the Earth's atmosphere and climate. • Describe and explain the different methods for extracting copper. | <ul style="list-style-type: none"> • Understand how abiotic and biotic factors interact in an ecosystem. • Explain why animals and plants compete for certain resources. • Explain the processes that add carbon to the atmosphere and remove carbon from the atmosphere • Explain ways that human activity decreases biodiversity. | <ul style="list-style-type: none"> • Explain the effect of force and mass on acceleration in unfamiliar situations. <p>Explain factors affecting stopping distance</p> <ul style="list-style-type: none"> • Recall and use the equations for wave speed and period. • Explain the behaviour of waves at boundaries. • Recall the electromagnetic spectrum, some of their uses and | | | |

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| | <ul style="list-style-type: none"> • Explain some causes of extinction. • Explain how antibiotic resistance in bacteria is a growing issue. • Explain the advantages and disadvantages of asexual and sexual reproduction. • Explain what occurs during the process of meiosis. • Compare the mechanisms involved in natural selection and selective breeding. • Explain the mechanisms involved in genetic engineering • Compare the mechanisms involved in natural selection and selective breeding. • Explain the mechanisms involved in genetic engineering. • Describe the reactions and products of alkenes, alcohols, carboxylic acids. • Compare addition and condensation polymerisation. • Evaluate the different analytical techniques. • Outline how the Earth's atmosphere continually changes over time. • Describe and explain the different methods for extracting copper. | <ul style="list-style-type: none"> • Explain different theories of evolution. • Explain some causes of extinction. • Understand how abiotic and biotic factors interact in an ecosystem. • Explain the processes that add carbon to the atmosphere and remove carbon from the atmosphere. • Explain ways that human activity decreases biodiversity and ways they can maintain biodiversity.. • | <p>dangers, and calculate their frequencies and wavelengths.</p> <p>Compare the ways that we image the body with how we treat the body in terms of electromagnetic radiation</p> <ul style="list-style-type: none"> • Explain what factors affect the magnetic field pattern near a wire, and the strength of a solenoid. <p>Explain how motors, generators, loudspeakers and microphones work.</p> <ul style="list-style-type: none"> • Explain how and why atmosphere changes with height. • Explain the behaviour of waves at boundaries. • Recall the electromagnetic spectrum, some of their uses and dangers, and calculate their frequencies and wavelengths. • Explain how and why light is reflected and refracted in a variety of contexts. • Explain how motors, generators, loudspeakers and microphones work. • Explain the link between the force of gravity, the speed of an object in orbit, and | | | |
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| | <ul style="list-style-type: none"> • Explain why the Haber process is economically important. • . • Describe the substances present in the blood entering and leaving the kidney, the kidney filtrate, and the urine. • Explain the body's response to high and low water concentration in the blood. • Compare the advantages and disadvantages of dialysis and kidney transplants. • Explain the advantages and disadvantages of asexual and sexual reproduction. • Compare the mechanisms involved in natural selection and selective breeding. • Explain the mechanisms involved in genetic engineering • | | <ul style="list-style-type: none"> • the radius of the orbit. • Evaluate models of the Big Bang in terms of the evidence for the Big Bang | | | |
| Cultural Capital | | | | | | |
| Curriculum overlap | | | | | | |