

This term in Science we will be learning about:

	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
K N O W L E D G E	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how antagonistic muscles work <input type="checkbox"/> Explain the function of a synovial joint. <input type="checkbox"/> Explain the factors that affect the rate of diffusion. <input type="checkbox"/> Explain what causes gas pressure <input type="checkbox"/> Explain what up thrust is 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain how the structure of specialised cells relates to their function. <input type="checkbox"/> Explain what happens during a change of state <input type="checkbox"/> Explain what happens to particles in diffusion <input type="checkbox"/> Explain the difference between mass and weight <input type="checkbox"/> Explain what causes friction 	<ul style="list-style-type: none"> <input type="checkbox"/> Know the functions of the nucleus, cytoplasm, cell membrane, cell wall, vacuole, chloroplasts. <input type="checkbox"/> Identify structures as cells, tissues or organs <input type="checkbox"/> Label diagrams of a skeleton and a synovial joint <input type="checkbox"/> Describe the properties of each state of matter <input type="checkbox"/> Explain what density means. 	<ul style="list-style-type: none"> <input type="checkbox"/> Recognise the organelles in animal and plant cells <input type="checkbox"/> Recall what a unicellular organism is <input type="checkbox"/> Draw particle model diagrams <input type="checkbox"/> Recall the names for changes in state <input type="checkbox"/> Give examples of common forces
S A K P I L L P S & C A T I O N	<ul style="list-style-type: none"> <input type="checkbox"/> I can use strategies which avoid experimental error and can identify potential sources of random and systematic error. <input type="checkbox"/> I can write a detailed risk assessment for my experiment. <input type="checkbox"/> I can analyse data taking full account of anomalies. <input type="checkbox"/> I can justify all aspects of the chart or graph used for displaying results,. <input type="checkbox"/> I can suggest ways of modifying the experimental procedures with reasons. 	<ul style="list-style-type: none"> <input type="checkbox"/> Use the formula $F = kx$ for elastic materials. <input type="checkbox"/> Draw and interpret a force-extension graph <input type="checkbox"/> I can explain how to monitor the control variables. <input type="checkbox"/> I can identify hazards, risks and precautions in an experiment. <input type="checkbox"/> I can identify anomalous results in my data. <input type="checkbox"/> I can justify my chosen method of chart or graph for displaying results. <input type="checkbox"/> I can confidently identify patterns in data and use these to describe and explain the relationships between variables using my scientific knowledge. <input type="checkbox"/> I can make valid comments on the quality of the collected 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe how to set up and use a light microscope <input type="checkbox"/> Draw and interpret distance-time graphs <input type="checkbox"/> Calculate density using the equation ($d = m/V$) <input type="checkbox"/> I can identify the variables in an investigation. <input type="checkbox"/> I can identify hazards in an investigation and take steps to reduce risk. <input type="checkbox"/> I can present data in a correctly labelled table. <input type="checkbox"/> I can select appropriate data for calculating a mean. <input type="checkbox"/> I can draw graphs with an accurate line of best fit. <input type="checkbox"/> I can describe the pattern in a data set and explain it using scientific knowledge. 	<ul style="list-style-type: none"> <input type="checkbox"/> Sketch force diagrams, representing forces as arrows <input type="checkbox"/> Calculate speed from distance and time ($s = d/t$) <input type="checkbox"/> I can identify some variables in an investigation. <input type="checkbox"/> I can follow instructions to reduce the risk from hazards in an investigation. <input type="checkbox"/> I can safely use a Bunsen burner. <input type="checkbox"/> I can calculate a simple mean. <input type="checkbox"/> I can present data in a table and, with guidance, produce a chart or graph. <input type="checkbox"/> I can draw simple conclusions from a data set. <input type="checkbox"/> I can suggest an improvement to an

Key Vocab: Cell, Control Variable, Dependent Variable, Friction, Gas, Gravity, Liquid, Organism, Independent Variable, Particle, Solid, Weight

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K N O W L E D G E	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the function of umbilical cord and placenta <input type="checkbox"/> Explain how alcohol and cigarettes can affect an unborn child in the womb <input type="checkbox"/> Explain how different separating techniques work such as filtration and distillation <input type="checkbox"/> Explain how to make an electromagnet stronger. <input type="checkbox"/> Explain how resistance affects the current <input type="checkbox"/> Explain how static electricity is produced 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the differences between DNA, genes and chromosomes <input type="checkbox"/> Describe the processes of puberty, birth and the menstrual cycle <input type="checkbox"/> Explain what happens when a substance dissolves <input type="checkbox"/> Describe what solubility means <input type="checkbox"/> Describe what a pure substance is <input type="checkbox"/> Describe what happens to current and voltage in series and parallel circuits 	<ul style="list-style-type: none"> <input type="checkbox"/> State whether variation is due to genetic, environmental or a mixture of both factors <input type="checkbox"/> State the function of key parts of the male and female reproductive system <input type="checkbox"/> Define the terms fertilisation & gestation and describe the steps involved <input type="checkbox"/> Describe what happens in dissolving <input type="checkbox"/> Define the terms current, voltage and resistance <input type="checkbox"/> Describe the structure of an electromagnet. 	<ul style="list-style-type: none"> <input type="checkbox"/> State changes that occur during puberty <input type="checkbox"/> Recall that genes are made of DNA <input type="checkbox"/> Identify key parts of the reproductive system <input type="checkbox"/> Label a diagram of a foetus in the womb <input type="checkbox"/> Define physical and chemical changes <input type="checkbox"/> Recall the basic circuit symbols <input type="checkbox"/> Identify series and parallel circuits <input type="checkbox"/> Recall that opposite poles attract and like poles repel
S K I L L S & C A T I O N		<ul style="list-style-type: none"> <input type="checkbox"/> Carry out a chromatography separation on coloured inks <input type="checkbox"/> Calculate resistance using the Ohm's Law equation 	<ul style="list-style-type: none"> <input type="checkbox"/> Use ammeters and voltmeters to measure current and voltage <input type="checkbox"/> Carry out a simple distillation 	<ul style="list-style-type: none"> <input type="checkbox"/> Carry out a simple filtration and evaporation safely <input type="checkbox"/> Use iron filings and a bar magnet to show a magnetic field

Key Vocab: Compound, Current, Element, Fertilisation, Menstruation, Mixture, Species & Voltage

This term in Science we will be learning about

	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
K N O W L E D G E	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the adaptations of leaves for photosynthesis <input type="checkbox"/> Explain why all life on Earth depends on plants <input type="checkbox"/> Define the conservation of mass <input type="checkbox"/> Explain how the ear works <input type="checkbox"/> Explain why refraction happens <input type="checkbox"/> Compare transverse and longitudinal waves 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain the impact of exercise, asthma and smoking on the lungs <input type="checkbox"/> Describe how plants get water and minerals <input type="checkbox"/> Describe the arrangement of the elements in the Periodic table <input type="checkbox"/> Describe a sound wave in terms of frequency & amplitude <input type="checkbox"/> Explain why objects look different colours in different light 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the mechanism of breathing <input type="checkbox"/> Summarise the photosynthesis reaction <input type="checkbox"/> Define elements and describe their properties <input type="checkbox"/> Use the particle model to describe elements and compounds <input type="checkbox"/> Explain why objects appear coloured 	<ul style="list-style-type: none"> <input type="checkbox"/> Identify structures in the human gas exchange system <input type="checkbox"/> Know the structure of an atom <input type="checkbox"/> Describe the properties of metals and non-metals <input type="checkbox"/> Know the signs of a chemical reaction. <input type="checkbox"/> Name the parts of the ear <input type="checkbox"/> State the definition of the terms: absorb, opaque, reflect, translucent & transparent
S A K P I L L P S & C A T I O N	<ul style="list-style-type: none"> <input type="checkbox"/> Write and interpret chemical formula <input type="checkbox"/> I can use strategies which avoid experimental error and can identify potential sources of random and systematic error. <input type="checkbox"/> I can write a detailed risk assessment for my experiment. <input type="checkbox"/> I can analyse data taking full account of anomalies. <input type="checkbox"/> I can justify all aspects of the chart or graph used for displaying results,. <input type="checkbox"/> I can suggest ways of modifying the experimental procedures with reasons. 	<ul style="list-style-type: none"> <input type="checkbox"/> Name compounds and interpret their composition <input type="checkbox"/> Draw a ray diagram to show refraction <input type="checkbox"/> I can explain how to monitor the control variables. <input type="checkbox"/> I can identify hazards, risks and precautions in an experiment. <input type="checkbox"/> I can identify anomalous results in my data. <input type="checkbox"/> I can justify my chosen method of chart or graph for displaying results. <input type="checkbox"/> I can confidently identify patterns in data and use these to describe and explain the relationships between variables using my scientific knowledge. 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe how to measure lung volume. <input type="checkbox"/> Write equations for simple reactions <input type="checkbox"/> Draw a ray diagram to show reflection in a plane mirror <input type="checkbox"/> I can identify the variables in an investigation. <input type="checkbox"/> I can identify hazards in an investigation and take steps to reduce risk. <input type="checkbox"/> I can present data in a correctly labelled table. <input type="checkbox"/> I can select appropriate data for calculating a mean. <input type="checkbox"/> I can draw graphs with an accurate line of best fit. <input type="checkbox"/> I can describe the pattern in a 	<ul style="list-style-type: none"> <input type="checkbox"/> Identify elements using a Periodic Table <input type="checkbox"/> I can identify some variables in an investigation. <input type="checkbox"/> I can follow instructions to reduce the risk from hazards in an investigation. <input type="checkbox"/> I can safely use a Bunsen burner. <input type="checkbox"/> I can calculate a simple mean. <input type="checkbox"/> I can present data in a table and, with guidance, produce a chart or graph. <input type="checkbox"/> I can draw simple conclusions from a data set. <input type="checkbox"/> I can suggest an improvement to an

Key Vocab: Compound, Control Variable, Dependent Variable, Element, Independent Variable, Mixture, Photosynthesis, Refraction, Respiration, Ultrasound

This term in Science we will be learning about

	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
K N O W L E D G E	<ul style="list-style-type: none"> <input type="checkbox"/> Explain the role of bacteria in the digestive system <input type="checkbox"/> Explain the difference between incomplete and complete combustion. <input type="checkbox"/> Explain what a light year is <input type="checkbox"/> Explain solar and lunar eclipses 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the consequences of a poor diet such as obesity <input type="checkbox"/> Explain why different people have different energy requirements <input type="checkbox"/> Describe the role of enzymes in the digestive system <input type="checkbox"/> Describe what is happening in a displacement reaction <input type="checkbox"/> Recall that metal oxides are basic and non-metal oxides are acidic <input type="checkbox"/> Explain why the shape of the Moon appears to change <input type="checkbox"/> Describe the Big Bang theory 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the role of the different food groups in the human body <input type="checkbox"/> Explain the function of the main parts of our digestive system <input type="checkbox"/> Describe the effects of drugs and alcohol <input type="checkbox"/> Recall the order of the reactivity series. <input type="checkbox"/> Recall definitions of oxidation, reduction, combustion, thermal decomposition, exothermic and endothermic <input type="checkbox"/> Describe the differences between stars and planets <input type="checkbox"/> Explain how Earth has days, nights, seasons and years 	<ul style="list-style-type: none"> <input type="checkbox"/> Recall the food groups in a balanced diet <input type="checkbox"/> Label the main parts of the digestive system <input type="checkbox"/> Give examples of metals and non-metals <input type="checkbox"/> Recall the properties of metals and non-metals <input type="checkbox"/> Define physical and chemical changes <input type="checkbox"/> Describe the structure of our solar system
S A K I L L P L S & C A T I O N	<ul style="list-style-type: none"> <input type="checkbox"/> Use the reactivity series to predict the place of non-metals in the series <input type="checkbox"/> Draw and interpret simple energy level diagrams 	<ul style="list-style-type: none"> <input type="checkbox"/> Carry out the food tests for starch, sugar, protein and fats <input type="checkbox"/> Write a word equation to show a displacement reaction 	<ul style="list-style-type: none"> <input type="checkbox"/> Recall and apply the equation for weight 	

Key Vocab: Catalyst, Digestion, Enzyme, Orbit, Reactivity, Satellite

This term in Science (Teacher 1) we will be learning about

	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
K N O W L E D G E	<ul style="list-style-type: none"> <input type="checkbox"/> I can confidently use a range of complex scientific vocabulary. <input type="checkbox"/> I can explain in detail what is meant by the terms accuracy, precision & reliability. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can use a range of scientific vocabulary. <input type="checkbox"/> I can define the terms reproducibility and repeatability. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can use correct scientific vocabulary. <input type="checkbox"/> I can define the terms accuracy, precision & reliability. <input type="checkbox"/> I know what you need to include in a risk assessment. <input type="checkbox"/> I know at least 3 different methods I can use to revise. <input type="checkbox"/> I know what it means to interrogate sources of information. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can use some scientific key terms. <input type="checkbox"/> I can state a range of possible Science career choices. <input type="checkbox"/> I can define the terms independent and dependent variable
S A K P I L L P S & C A T I O N	<ul style="list-style-type: none"> <input type="checkbox"/> I can plan an investigation which considers repeatability, reproducibility and reliability. <input type="checkbox"/> I can write a detailed risk assessment for my experiment. <input type="checkbox"/> I can analyse data using complex statistical analysis and taking full account of anomalies. <input type="checkbox"/> I can justify all aspects of the chart or graph used for displaying results,. <input type="checkbox"/> I can suggest ways of modifying the experimental procedures with reasons and suggest strategies that will take the investigation further. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can explain how to monitor the control variables. <input type="checkbox"/> I can identify hazards, risks and precautions in an experiment. <input type="checkbox"/> I can identify anomalous results in my data. <input type="checkbox"/> I can justify my chosen method of chart or graph for displaying results. <input type="checkbox"/> I can confidently identify patterns in data and use these to describe and explain the relationships between variables using my scientific knowledge. <input type="checkbox"/> I can explain limitations in my data and make valid comments on the quality of the collected data. <input type="checkbox"/> I can interrogate sources of information. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can identify the variables in an investigation. <input type="checkbox"/> I can identify hazards in an investigation and take steps to reduce risk. <input type="checkbox"/> I can present data in a table with correctly labelled headings with units. <input type="checkbox"/> I can draw graphs with an accurate line of best fit. <input type="checkbox"/> I can describe the pattern in a data set and explain it using scientific knowledge. <input type="checkbox"/> I can evaluate the effectiveness of a method and give practical ideas on how to improve the method. <input type="checkbox"/> I can demonstrate a range of revision strategies. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can identify some variables in an investigation. <input type="checkbox"/> I can follow instructions to reduce the risk from hazards in an investigation. <input type="checkbox"/> I can present data in a table and, with guidance, produce a chart or graph. <input type="checkbox"/> I can draw simple conclusions from a data set. <input type="checkbox"/> I can suggest an improvement to an investigation.

Key Vocab: Control Variable, Dependent Variable, Independent Variable

This term in Science (Teacher 2) we will be learning about

	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
K N O W L E D G E	<ul style="list-style-type: none"> <input type="checkbox"/> I can confidently use a range of complex scientific vocabulary. <input type="checkbox"/> I can define the terms random and systematic error <input type="checkbox"/> I can justify choosing specific equipment in terms of resolution.. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can use a range of scientific vocabulary. <input type="checkbox"/> I can define the terms limitation and validity <input type="checkbox"/> I can describe the function of a range of science equipment. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can use correct scientific vocabulary. <input type="checkbox"/> I can identify scientific equipment. <input type="checkbox"/> I know at least 3 different methods I can use to revise. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can use some scientific key terms. <input type="checkbox"/> I can describe what it means by a fair test. <input type="checkbox"/> I can identify some scientific equipment.
S A K P I L L P S & C A T I O N	<ul style="list-style-type: none"> <input type="checkbox"/> I can write a detailed method for a scientific investigation that includes reducing errors and controlling variables. <input type="checkbox"/> I can critically evaluate the validity of scientific claims. <input type="checkbox"/> I can identify and explain random and systematic errors. <input type="checkbox"/> I can analyse data using complex statistical analysis and taking full account of anomalies. <input type="checkbox"/> I can suggest ways of modifying the experimental procedures with reasons and suggest strategies that will take the investigation further. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can write a detailed method for a scientific investigation that carefully considers variables. <input type="checkbox"/> I can recognise and critique scientific claims. <input type="checkbox"/> I can identify anomalous results and errors in my data. <input type="checkbox"/> I can justify my chosen method of chart or graph for displaying results. <input type="checkbox"/> I can confidently identify patterns in data and use these to describe and explain the relationships between variables using my scientific knowledge. <input type="checkbox"/> I can explain limitations in my data and make valid comments on the quality of the collected data. <input type="checkbox"/> I can apply complex maths skills in science. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can write a basic method for a scientific investigation. <input type="checkbox"/> I can recognise scientific claims, <input type="checkbox"/> I can present data in a table with correctly labelled headings with units. <input type="checkbox"/> I can select appropriate data for calculating a mean. <input type="checkbox"/> I can draw bar charts and line graphs with an accurate line of best fit. <input type="checkbox"/> I can describe the pattern in a data set and explain it using scientific knowledge. <input type="checkbox"/> I can evaluate the effectiveness of a method and give practical ideas on how to improve the method. <input type="checkbox"/> I can demonstrate a range of revision strategies. 	<ul style="list-style-type: none"> <input type="checkbox"/> I can follow a simple method to collect data <input type="checkbox"/> I can calculate a simple mean. <input type="checkbox"/> I can present data in a table and, with guidance, produce a chart or graph. <input type="checkbox"/> I can draw simple conclusions from a data set. <input type="checkbox"/> I can suggest an improvement to an investigation. <input type="checkbox"/> I can apply simple maths skills in science.

Key Vocab: Control Variable, Dependent Variable, Independent Variable

This term in Science (Teacher 1) we will be learning about

	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
K N O W L E D G E	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the features of bacteria cells <input type="checkbox"/> Explain the adaptations of specialised cells <input type="checkbox"/> Explain how to reduce the amount of energy wasted 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the differences between 'eukaryotic' and 'prokaryotic' cells <input type="checkbox"/> Explain the function of specialised cells <input type="checkbox"/> Explain what happens to wasted energy 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the functions of the structures in animal and plant cells <input type="checkbox"/> Give an example of a specialised cell <input type="checkbox"/> Describe what elements, compounds and mixtures are <input type="checkbox"/> Recall the law of conservation of energy <input type="checkbox"/> Describe the energy changes involved in simple energy transfers 	<ul style="list-style-type: none"> <input type="checkbox"/> Describe the difference between cells, tissues and organs <input type="checkbox"/> Recall the different parts of animal and plant cells <input type="checkbox"/> State that everything is made of atoms <input type="checkbox"/> State the 8 stores of energy.
S A P I L L P I C A T I O N	<ul style="list-style-type: none"> <input type="checkbox"/> Write balanced symbol equations for chemical reactions 	<ul style="list-style-type: none"> <input type="checkbox"/> Estimate the size of a cell <input type="checkbox"/> Write word equations for chemical reactions <input type="checkbox"/> Calculate efficiency using the equation 	<ul style="list-style-type: none"> <input type="checkbox"/> Use chemical formulae to represent compounds 	<ul style="list-style-type: none"> <input type="checkbox"/> Use the periodic table to identify elements

Key Vocab: Element, Energy, Eukaryotic

This term in Science (Teacher 2) we will be learning about

	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
K N O W L E D G E	<ul style="list-style-type: none"> <input type="checkbox"/> Compare electron and light microscopes <input type="checkbox"/> Explain why some energy resources are more reliable than others 	<ul style="list-style-type: none"> <input type="checkbox"/> Define the terms magnification and resolution <input type="checkbox"/> Explain how filtration, distillation, chromatography and crystallisation work <input type="checkbox"/> Describe the advantages and disadvantages of different methods we can use to generate electricity 	<ul style="list-style-type: none"> <input type="checkbox"/> Explain the function of each part of a microscope <input type="checkbox"/> Recall the standard prefixes used in Science <input type="checkbox"/> Describe what happens in filtration, distillation, chromatography and crystallisation <input type="checkbox"/> Describe how the main methods we can use to generate electricity work 	<ul style="list-style-type: none"> <input type="checkbox"/> Label the key parts of a microscope <input type="checkbox"/> Describe what a mixture is <input type="checkbox"/> Name the physical processes used to separate mixtures <input type="checkbox"/> List the main renewable and non-renewable energy resources <input type="checkbox"/> Define what a renewable energy resource is.
S A K P I L L P S & C A T I O N	<ul style="list-style-type: none"> <input type="checkbox"/> Use and rearrange the IAM calculation <input type="checkbox"/> Use a Liebig Condenser to distill a liquid <input type="checkbox"/> Evaluate the use of different energy resources <input type="checkbox"/> Justify why we use different energy resources 	<ul style="list-style-type: none"> <input type="checkbox"/> Convert values using prefixes and standard form <input type="checkbox"/> Separate a mixture using chromatography <input type="checkbox"/> Explain patterns and trends in the resources we use to generate electricity 	<ul style="list-style-type: none"> <input type="checkbox"/> Use a light microscope to observe, draw and label a selection of plant and animal cells <input type="checkbox"/> Distill a mixture by evaporating and condensing a liquid. 	<ul style="list-style-type: none"> <input type="checkbox"/> Calculate the magnification of a microscope <input type="checkbox"/> Filter a mixture using filter paper

Key Vocab: Atom, Eukaryotic, Renewable