

Science Curriculum Overview - Year 5

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Forces</p> <ul style="list-style-type: none"> • What is a force? • What is gravity? • What is friction? • What is air resistance? • What is water resistance? • How can we represent forces? • What happens when we extend a spring? • Why are levers useful? • Why are pulleys useful? • How can we tell if a material is magnetic? • How can we compare the strength of different magnets? 	<p>Earth and Space</p> <ul style="list-style-type: none"> • What do the Sun, Earth and Moon look like? • What is a solar system? • Why do we get night and day? • How does a sundial work? • What is a year? • Why do we get seasons on Earth? • What is a natural satellite? • How have ideas about the solar system changed? 	<p>Properties and Changes of Materials</p> <ul style="list-style-type: none"> • How can I test a material to find out which one is the most absorbent? • Which material would be the most effective for making a warm jacket? • Which material would be the most suitable for making a blackout blind? • Which material would be the most suitable for making an electrical switch? • How are new materials developed? • What are the properties of solids, liquids and gases? • How can I test if a substance is soluble? • How can we speed up how quickly sugar dissolves? • How can I separate mixtures using sieving and filtration? • How can I separate a mixture using evaporation? • Can I identify reversible and irreversible changes? 	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> • What is the life cycle of a flowering plant? • What happens during pollination? • What affects how quickly seeds germinate? • What is the life cycle of a frog? • What is the life cycle of a butterfly? • What is the life cycle of a bird? • What is the life cycle of a mammal? • Do different mammals have different length gestation periods? • What is the difference between sexual and asexual reproduction? • What does a naturalist do? 	<p>Animals, Including Humans</p> <ul style="list-style-type: none"> • How do humans change in their lifetime? • How does the foetus change in the womb? • How do humans change during childhood? • How do humans change during puberty? • How do humans change during adulthood and old age? 	

Science Curriculum Overview - Year 6

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Animals, Including Humans</p> <ul style="list-style-type: none"> • What is an organ system? • What does our blood consist of? • What are blood vessels? • What does the heart do? • How does blood move around the body? • Can I identify the different parts of the heart? • How does exercise affect my heart? • Why is exercise important? • What is a drug? • What is a balanced diet? 	<p>Light</p> <ul style="list-style-type: none"> • What is a light source? • How does light travel? • How are shadows formed? • What affects the size of a shadow? • How can I test different materials to find out which one is the most reflective? • What happens when light is reflected? • How do periscopes work? • Is light just one colour? 	<p>Chemistry Project</p> <ul style="list-style-type: none"> • Can I use a Bunsen burner safely? • What are the properties of solids, liquids and gases? • How can we change how quickly ice melts? • How can I speed up how quickly salt dissolves in water? • How can I speed up how quickly water evaporates? • How do we purify salt from rock salt? 	<p>Electricity</p> <ul style="list-style-type: none"> • What is a circuit? • Can I draw a circuit diagram to represent a simple circuit? • Which material would be the most suitable to make an electrical wire? • How can we change the brightness of a bulb? • Why are switches useful? • Can I design a circuit for a particular function? • What happens when a motor is added to a circuit? • How can I keep safe around electricity? 	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> • What is classification? • How can we classify vertebrates? • How can we classify invertebrates? • How can we classify plants? • How can we classify microorganisms? • What are classification keys? • How can we estimate the size of a population? • How can we find out which organisms live in a habitat? 	<p>Evolution and Inheritance</p> <ul style="list-style-type: none"> • Why are we all different? • What is DNA? • How are living things adapted to live in their environment? • How are animals that live locally adapted to their environment? • Why have living things changed over time? • What is the evidence for evolution? • How was the evidence for evolution collected? • How did the horse evolve? • Why do some living things become extinct?

Science Curriculum Overview - Year 7

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Cells</p> <ul style="list-style-type: none"> • What is a cell? • What do the different parts of a cell do? • How do I use a microscope correctly? • Can I use a microscope to view onion and cheek cells? • Can I explain how some cells are specialised to carry out a particular function? • What is a unicellular organism? <p>Forces</p> <ul style="list-style-type: none"> • What is a force? • How can we tell if forces are balanced? • What happens when forces are unbalanced? • Which type of surface has the 	<p>Particles and Atoms</p> <ul style="list-style-type: none"> • What are the properties of solids, liquids and gases? • Can I explain changes of state using particle theory? • How do gases cause pressure? • What is an atom? • What is the difference between an element and a compound? • How do I name a compound? • How do I write a chemical formula? • What happens to the number of atoms during a chemical reaction? <p>Space Physics</p> <ul style="list-style-type: none"> • What is a solar system? • Is gravity the same 	<p>Skeletal and Muscular Systems</p> <ul style="list-style-type: none"> • What are the main bones in the skeleton called? • Why do we need a skeleton? • What parts make up a joint? • How do muscles help our joints to move? • Can I identify the different parts of a chicken wing? • Can I calculate the force needed to move my arm? <p>Health</p> <ul style="list-style-type: none"> • What affects my reaction time? • How does smoking affect the body? • How can substance misuse affect the body? <p>Pure and Impure Substances</p>	<p>Energy Changes</p> <ul style="list-style-type: none"> • What are the different types of energy stores? • How can I represent energy transfers? • How can we calculate how much energy is in a KE store and a GPE store? • How is energy transferred by conduction? • How is energy transferred by convection? • How is energy transferred by radiation? • How can we prevent heat loss? • How is electricity generated using fossil fuels? • How is electricity generated using renewable sources of energy? 	<p>Reproduction</p> <ul style="list-style-type: none"> • What are the parts of a flower called? • What happens during pollination? • How is fruit produced? • How are seeds dispersed? • What are the parts of the human reproductive system called? • What happens during the menstrual cycle? • How do humans reproduce? • What happens during pregnancy? <p>Acids and Alkalis</p> <ul style="list-style-type: none"> • What is an acid and a base? • Can I make an indicator? • How can we tell how strongly acidic or alkaline a solution is? 	<p>Photosynthesis</p> <ul style="list-style-type: none"> • How do plants make their food? • What factors affect the rate of photosynthesis? • How can we test a leaf to see if it has carried out photosynthesis? • Why do plants need glucose? • How is the leaf adapted for photosynthesis?

<p>most friction?</p> <ul style="list-style-type: none"> • What affects the amount of air resistance? • How can we reduce the effect of water resistance? • How can we calculate the turning moment of a force? • How can we use simple machines to reduce the amount of work done? • What happens when we stretch a spring? 	<p>on the other planets?</p> <ul style="list-style-type: none"> • What is a year? • Why do we get night and day? • What causes the seasons? • What is the Sun? • What is a galaxy? 	<ul style="list-style-type: none"> • What is a pure substance? • What is a solution? • What is diffusion? • How can I use filtration to separate a mixture? • How can I use chromatography to separate a mixture? • How can I use distillation to separate a mixture? • How can I separate salt from rock salt? 	<ul style="list-style-type: none"> • What is power? • How are electricity bills calculated? 	<ul style="list-style-type: none"> • What happens when you add a base to an acid? • What happens when you add a metal oxide to an acid? • Can I investigate which indigestion remedy is the most effective? • What happens when you add a metal to an acid? 	
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Science Curriculum Overview - Year 8

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Electricity</p> <ul style="list-style-type: none"> • Can I connect a simple circuit? • What is the difference between a series and a parallel circuit? • How do I measure the current in a circuit? • What is potential difference? • What is resistance? <p>The Periodic Table</p> <ul style="list-style-type: none"> • What is the difference between an element, a compound and a mixture? • How was the Periodic Table developed? • How do the chemical and physical properties of the elements vary? • What are the properties of a 	<p>Nutrition and Digestion</p> <ul style="list-style-type: none"> • Which food groups do we need for a balanced diet? • Which diseases are caused by a lack of nutrients in our diet? • How can I test foods to see if they contain starch, protein, sugar or fat? • How can I test a food to see if it contains the most energy? • What do the different parts of the digestive system do? • How is food broken down by the digestive system? • Why are enzymes important in digestion? • How is the small intestine adapted to 	<p>Acids and Alkalis</p> <ul style="list-style-type: none"> • What is an acid and a base? • Can I make an indicator? • How can we tell how strongly acidic or alkaline a solution is? • What happens when you add a base to an acid? • What happens when you add a metal oxide to an acid? • Can I investigate which indigestion remedy is the most effective? • What happens when you add a metal to an acid? <p>Chemical Reactions</p> <ul style="list-style-type: none"> • What is a displacement reaction? • What is a combustion 	<p>Light</p> <ul style="list-style-type: none"> • How does light travel? • How can we test if a material is transparent, translucent or opaque? • What happens when light is reflected? • What happens when light is refracted? • How can light be focussed? • How does the eye work? • Is light just one colour? • Why do we see objects as different colours? <p>Sound</p> <ul style="list-style-type: none"> • How are sounds made? • How does sound travel? • How can sounds be detected? • How can sound be 	<p>Gas Exchange and Respiration</p> <ul style="list-style-type: none"> • What is respiration? • What is the difference between aerobic and anaerobic respiration? • What is fermentation? • What are the parts of the gas exchange system called? • How are the alveoli adapted for gas exchange? • How can I measure my lung capacity? • How does exercise affect gas exchange? • How does smoking affect the gas exchange system? <p>How does asthma affect the gas exchange system?</p>	<p>Materials</p> <ul style="list-style-type: none"> • How are metals extracted from their ores? • What are the properties of ceramics? • What are the properties of polymers? • What is a composite material? <p>Relationships in an Ecosystem</p> <ul style="list-style-type: none"> • What are food chains? • What is a pyramid of numbers? • What is a food web? • How can we estimate the size of a population? • How can we find out which organisms live in a habitat? • Why are pollinators

<p>metal and a non-metal?</p> <ul style="list-style-type: none"> • What are the chemical properties of metal and non-metal oxides? • What is the pattern of reactivity in Group 1? • What is the pattern of reactivity in Group 7? 	<p>help absorption?</p> <p>Magnets and Electromagnets</p> <ul style="list-style-type: none"> • How can we tell if a material is magnetic? • What is a magnetic field? • What is an electromagnet? • How can I change the strength of an electromagnet? • What do we use electromagnets for? • How does a DC motor work? 	<p>reaction?</p> <ul style="list-style-type: none"> • What is a thermal decomposition reaction? • What is an oxidation reaction? • What is a catalyst? 	<p>useful?</p> <ul style="list-style-type: none"> • What are the properties of water waves? 	<p>Pure and Impure Substances</p> <ul style="list-style-type: none"> • What is a pure substance? • What is a solution? • What is diffusion? • How can I use filtration to separate a mixture? • How can I use chromatography to separate a mixture? • How can I use distillation to separate a mixture? • How can I separate salt from rock salt? 	<p>important for food security?</p> <ul style="list-style-type: none"> • What is bioaccumulation? <p>Living Things and Their Habitats (Catch up topic from year 6)</p> <ul style="list-style-type: none"> • What is classification? • How can we classify vertebrates? • How can we classify invertebrates? • How can we classify plants? • How can we classify microorganisms? • What are classification keys?
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