Chatsworth Infant School and Burnt oak Junior School
Science Learning Ladders

We follow the National Curriculum. We deliver subjects through the International Curriculum (IPC) which covers all of the National Curriculum objectives. It is a knowledge and skills based curriculum. There are 3 milestones. The skills repeat within a milestone – so if a child is absent they have the opportunity to cover the learning again. The skills build over time. The knowledge taught to children is tailored to the local context.

IPC key skills are in bold,
IPC Skills start with 'Be able to',
Knowledge learning goals start with 'Know',
Understanding learning goals start with 'Understand'

IPC units are shown in the term they are taught Autumn Spring Summer
Highlighting indicates 'threads of learning' which can be evidence from Nursery to Year 6

	EYFS (not IPC)	Milepost 1		Milepost 2		Milepost 3	
KEY CONCEPTS	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Scientific Enquiry Working Scientifically NC	Ask questions to find out more and check they understand A2 and Sp1 Ask questions relevant to theme Sp1 Talk about selected non-fiction, including new knowledge and vocabulary Sp1	1.01 Be able to identify ways of finding out about scientific questions in familiar contexts (S) Superhumans Buildings Time Travellers The Earth Our Home	1.01 Be able to identify ways of finding out about scientific questions in familiar contexts (S) Brainwave: The Brain Live and Let Live Look and Listen! The Magic Toymaker Green Fingers	2.01 Be able to suggest ways of collecting evidence in response to a scientific question Shake It Let's Plant It Feel the force	2.01 Be able to suggest ways of collecting evidence in response to a scientific question How Humans Work Making Waves Land Sea Sky	3.01 Be able to choose an appropriate way (research review, simulation or experimentation) to investigate a scientific issue Existing Endangered Extinct Roots Shoots Fruits Full Power Bake It	3.01 Be able to choose an appropriate way (research review, simulation or experimentation) to investigate a scientific issue Space Scientists

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	Connect one idea or action to another Sp1 Follow a sequence of instructions Sp2 Develop skills such as prediction and recall Sum1 Ask questions to clarify their understanding Sum 2 Explain how things work and why they might happen Sum 2	1.03 Understand that science provides evidence, not proof (U) Superhumans Time Travellers	1.03 Understand that science provides evidence, not proof (U) Treasure Islands Live and Let Live Look and Listen!	2.03 Understand the importance of collecting scientific evidence through observation and testing Shake It Let's Plant It Feel the force	2.03 Understand the importance of collecting scientific evidence through observation and testing How Humans Work Making Waves Land Sea Sky	3.03 Understand the limitations of scientific investigation Existing Endangered Extinct Bake It Fairgrounds	3.03 Understand the limitations of scientific investigation Space Scientists Being Human
		1.04 Be able to follow guided experiments to try to answer scientific questions (S) Superhumans Buildings Time Travellers	1.04 Be able to follow guided experiments to try to answer scientific questions (S) Brainwave: The Brain Look and Listen! The Magic Toymaker Green Fingers	2.04 Be able to ask scientific questions Bright Sparks Shake It Let's Plant It	2.04 Be able to ask scientific questions How Humans Work Making Waves Land Sea Sky	3.04 Be able to suggest testable questions Fairgrounds Full Power	3.04 Be able to suggest testable questions Space Scientists
		1.05 Be able to connect scientific investigations to familiar contexts (S) Superhumans Buildings Time Travellers The Earth Our Home	1.05 Be able to connect scientific investigations to familiar contexts (S) Brainwave: The Brain Live and Let Live Look and Listen! The Magic Toymaker Green Fingers	2.05 Be able to connect scientific investigations to real life Bright Sparks How Humans Work Shake It Let's Plant It Feel the force	2.05 Be able to connect scientific investigations to real life Making Waves Land Sea Sky	3.05 Be able to generate a hypothesis Existing Endangered Extinct Roots Shoot Fruits Bake It Fairgrounds Full Power	3.05 Be able to generate a hypothesis Space Scientists Being Human
		1.06 Be able to suggest independent variables to test in a guided	1.06 Be able to suggest independent variables to test in a guided	2.06 Be able to plan an investigation changing only one independent	2.06 Be able to plan an investigation changing only one independent	3.06 Be able to plan a fair (test) investigation Roots Shoots Fruits	3.06 Be able to plan a fair (test) investigation

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		investigation Superhumans From A to B Buildings	investigation (KS) Look and Listen! Green Fingers	variable Bright Sparks Shake It Let's Plant It Feel the force	variable How Humans Work Making Waves Land Sea Sky	Bake It Fairgrounds	Space Scientists
	Develop skills such as prediction and recall Sum1 Make predictions Sum 2 Compare predictions to reality Sum 2	1.07 Be able to make predictions (KS) From A to B Superhumans Buildings Time Travellers The Earth Our Home	1.07 Be able to make predictions. (KS) Live and Let Live Look and Listen! The Magic Toymaker Green Fingers	2.07 Be able to make informed predictions Bright Sparks Shake It Let's Plant It Feel the force	2.07 Be able to make informed predictions How Humans Work Making Waves Land Sea Sky	3.07 Be able to make predictions related to the independent variable Roots Shoots Fruits Fairgrounds Bake It Full Power	3.07 Be able to make predictions related to the independent variable Space Scientists
	Use vocabulary to describe sense of taste Sp2	1.08 Be able to use the senses safely to make observations (KS) Superhumans Buildings Time Travellers The Earth Our Home	1.08 Be able to use the senses safely to make observation (KS) Live and Let Live Look and Listen! The Magic Toymaker Green Fingers	2.08 Be able to identify potential risks in a planned investigation Bright Sparks Shake It Feel the force	2.08 Be able to identify potential risks in a planned investigation Land Sea Sky	3.08 Be able to conduct science investigations safely Roots Shoots Fruits Fairgrounds Bake It Full Power	3.08 Be able to conduct science investigations safely Space Scientists

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		1.09 Be able to make observations and take informal measurements (S) From A to B Buildings Time Travellers. The Earth Our Home	1.09 Be able to make observations and take informal measurements (S) Live and Let Live Look and Listen! The Magic Toymaker Green Fingers	2.09 Be able to make and record observations and take formal measurements Bright Sparks Let's Plant It Feel the force	2.09 Be able to make and record observations and take formal measurements How Humans Work Making Waves Land Sea Sky	3.09 Be able to take systematic and accurate measurements or observations using the most appropriate tools and conventions Existing Endangered Extinct Roots Shoots Fruits Fairgrounds Bake It	3.09 Be able to take systematic and accurate measurements or observations using the most appropriate tools and conventions Space Scientists
	Notice and discuss patterns in the environment A1	1.10 Be able to compare results (S) Superhumans Buildings Time Travellers. The Earth Our Home	1.10 Be able to compare results (S) Brainwave: The Brain Live and Let Live Look and Listen! The Magic Toymaker Green Fingers	2.10 Be able to describe observations and results identifying possible patterns Shake It Let's Plant It Feel the force	2.10 Be able to describe observations and results identifying possible patterns How Humans Work Making Waves Land Sea Sky	3.10 Be able to analyse observations and results identifying those that are more or less significant Existing Endangered Extinct Roots Shoots Fruits Bake It Fairgrounds	3.10 Be able to analyse observations and results identifying those that are more or less significant
		1.11 Be able to compare results with predictions (KS) From A to B Buildings Time Travellers The Earth Our Home	1.11 Be able to compare results with predictions (KS) Live and Let Live Look and Listen! The Magic Toymaker Green Fingers	2.11 Be able to compare results to predictions and draw conclusions Bright Sparks Shake It Let's Plant It Feel the force	2.11 Be able to compare results to predictions and draw conclusions How Humans Work Making Waves Land Sea Sky	3.11 Be able to draw conclusions based on results and compare to original hypotheses and the real world	3.11 Be able to draw conclusions based on results and compare to original hypotheses and the real world Space Scientists

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						Existing Endangered Extinct Roots Shoots Fruits Bake It Fairgrounds Full Power	Being Human
		1.12 Be able to describe the method and results (KS) Superhumans Buildings Time Travellers The Earth Our Home	1.12 Be able to describe the method and results (KS) Live and Let Live Look and Listen! The Magic Toymaker Green Fingers	2.12 Be able to record and describe the method and results in a variety of ways Bright Sparks Shake It Let's Plant It Feel the force	2.12 Be able to record and describe the method and results in a variety of ways How Humans Work Making Waves Land Sea Sky	3.12 Be able to record the method and results including tables, graphs, diagrams and/or models Roots Shoots Fruits Bake It Fairgrounds Full Power	3.12 Be able to record the method and results including tables, graphs, diagrams and/or models Space Scientists
		1.13 Be able to suggest improvements to investigations Buildings	1.13 (KS) Be able to suggest improvements to investigations Green Fingers Live and Let Live	2.13 Be able to compare investigations and results identifying possible anomalies Bright Sparks Shake It Let's Plant It Feel the force	2.13 Be able to compare investigations and results identifying possible anomalies	3.13 Be able to evaluate investigations for fairness and suggest improvements Bake It Fairgrounds Full Power	3.13 Be able to evaluate investigations for fairness and suggest improvements Space Scientists
Biology: Humans and Animals	Make detailed observations and drawings of animals Sum1 Make observations of animals and plants Sum1	1.14 Know the names of the main external body parts of humans and animals Superhumans	1.14 (KK) Know the names of the main external body parts of humans and animals	2.14 Know about the functions of skeletons and muscles in humans and some other animals	2.14 Know about the functions of skeletons and muscles in humans and some other animals How Humans Work Land Sea Sky	3.14 Know the functions of the major internal and external parts of the human body	3.14 Know the functions of the major internal and external parts of the human body Space Scientists Being Human

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		The Earth Our Home	Live and Let Live Look and Listen!				
	Use vocabulary to describe sense of taste Sp2	1.15 Know the names of the senses and the organs connected to them (K) Superhumans	Green Fingers		2.15 Be able to describe the process of digestion How Humans Work		3.15 Be able to describe some of the connections between systems in the human body Being Human
Biology: Plants	Care for growing plants Sum 1 Observe the effect of decay over time Sum2 Look after living things to help them grow Sum 2	1.16 Know that plants need light and water to grow The Earth Our Home	1.16 Know that plants need light and water to grow (K) Live and Let Live Green Fingers	2.16 Know about the functions of the major parts of a plant Let's Plant It	2.16 Know about the functions of the major parts of a plant Land Sea Sky	3.16 Know about factors that affect the growth of plants Roots Shoots Fruits	3.16 Know about factors that affect the growth of plants Space Scientists
		1.17 Know the names of the parts of plants The Earth Our Home	1.17 Know the names of the parts of plants (K) Live and Let Live Green Fingers	2.17 Know how the parts of a plant may change over time Let's Plant It	2.17 Know how the parts of a plant may change over time Land Sea Sky	3.17 Know that photosynthesis requires carbon dioxide and results in the excretion of oxygen Roots Shoots Fruits	~~3.17~~ ~~Know that photosynthesis requires carbon dioxide and results in the excretion of oxygen~~

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		1.18 Know that seeds can grow into plants The Earth Our Home	1.18 Know that seeds can grow into plants (K) Live and Let Live Green Fingers	2.18 Know the lifecycle of various plants Let's Plant It	2.18 Know the lifecycle of various plants Land Sea Sky	3.18 Know about pollination, fertilisation and methods of seed dispersal Roots Shoots Fruits	~~3.18~~ ~~Know about pollination, fertilisation and methods of seed dispersal~~
Biology: Living Things	Understand key features of an animal life cycle Sp2 Talk about changes in animals as they grow Sp2 Show care and concern for living things Sum1 Design practical, attractive environments Sum1 Make detailed observations of animals Sum1 Look after living things to help them grow Sum 2 Understands key features of a life cycle Sum2	1.19 Know some differences between living things and things that have never been alive The Earth Our Home	1.19 Know some differences between living things and things that have never been alive (K) Live and Let Live Green Fingers	2.19 Know that a key difference between non-living and living things is that living things grow and reproduce Let's Plant It	2.19 Know that a key difference between non-living and living things is that living things grow and reproduce	3.19 Know the seven characteristics which define living things Existing, Endangered, Extinct Bake It	3.19 Know the seven characteristics which define living things Being Human
		1.20 Be able to sort living things in simple ways by features, lifecycles and behaviours Superhumans The Earth Our Home	1.20 Be able to sort living things in simple ways by features, lifecycles and behaviours (S) Live and Let Live Look and Listen! Green Fingers	~~2.20~~ ~~Be able to sort animals into vertebrates and invertebrates~~	2.20 Be able to sort animals into vertebrates and invertebrates Land Sea Sky	3.20 Be able to identify an animals' class according to its features, behaviours and lifecycle Existing, Endangered, Extinct	3.20 Be able to identify an animals' class according to its features, behaviours and lifecycle

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		1.21 Know that eating food provides the body with energy K) Superhumans		2.21 Know that the sun is the source of energy in all food chains Let's Plant It	2.21 Know that the sun is the source of energy in all food chains Land Sea Sky	3.21 Know the names of different types of consumers and the different levels within a food chain Existing, Endangered, Extinct	
		1.22 Be able to sequence given food chains. The Earth Our Home	1.22 Be able to sequence given food chains (S) Live and Let Live	2.22 Be able to draw diagrams to illustrate simple food webs and chains in an ecosystem Let's Plant It	2.22 Be able to draw diagrams to illustrate simple food webs and chains in an ecosystem Land Sea Sky	3.22 Be able to predict the outcome of disruption to a food chain Existing, Endangered, Extinct	
	Shows care and concern for living things Sum1	1.23 Know what all living things need to survive Superhumans The Earth Our Home	1.23 Know what all living things need to survive (K) Live and Let Live Green Fingers	2.23 Know how space and place impact on the health of living things Let's Plant It	2.23 Know how space and place impact on the health of living things Land Sea Sky	3.23 Know the influences on the quality of life for living things Existing, Endangered, Extinct Roots Shoots Fruits	3.23 Know the influences on the quality of life for living things Space Scientists Being Human
	Begin to understand the effect their behaviour can have on the environment Sum 2	1.24 Understand that people share environments with other living things The Earth Our Home	1.24 Understand that people share environments with other living things (U) Live and Let Live Green Fingers	~~2.24~~ ~~Understand the positive and negative impacts humans have on other living things~~	2.24 Understand the positive and negative impacts humans have on other living things Land Sea Sky	3.24 Understand the effects that changes in the environment may have on living things Existing, Endangered, Extinct	3.24 Understand the effects that changes in the environment may have on living things Being Human

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		1.25 Understand that different locations support different living things The Earth Our Home	1.25 Understand that different locations support different living things (U) Live and Let Live Green Fingers	2.25 Understand how animals and plants are physically suited to particular environments Let's Plant It	2.25 Understand how animals and plants are physically suited to particular environments Land Sea Sky	3.25 Understand how plants and animals adapt their behaviour in particular environments Existing, Endangered, Extinct Roots Shoots Fruits	
						3.26 Know that there is evidence that animals have changed or become extinct over time Existing, Endangered, Extinct	
		1.27 Know about similarities and differences between humans and other creatures Superhumans The Earth Our Home	1.27 Know about similarities and differences between humans and other creatures (K) Live and Let Live Look and Listen!		2.27 Know that there are physical similarities and differences between themselves and other people Brainwave: The Brain How Humans Work	3.27 Know that some characteristics of humans and other animals are inherited from their parents Existing, Endangered, Extinct	
		1.28 Know the basic nutrient groups and example foods for each group (K) Superhumans		2.28 Know the role of the different nutrients in the body Shake It	2.28 Know the role of the different nutrients in the body Brainwave: The Brain How Humans Work	3.28 Know the possible impact of too much or too little of a particular nutrient Existing, Endangered, Extinct	3.28 Know the possible impact of too much or too little of a particular nutrient Being Human

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		1.29 Understand the interdependence between plants and animals, humans and animals & human and plants The Earth Our Home	1.29 Understand the interdependence between plants and animals, humans and animals & human and plants (U) Live and Let Live Green Fingers	2.29 Understand the interdependence between all living things Let's Plant It	2.29 Understand the interdependence between all living things Land Sea Sky	3.29 Understand the consequences of imbalance in an ecosystem Existing, Endangered, Extinct	
Chemistry: Properties	Explore properties of different materials a1 Explore and talk about floating and sinking sp2	1.30 Know the names and basic properties of a range of materials (K) Buildings Time Travellers	1.30 Know the names and basic properties of a range of materials (K) The Magic Toymaker	2.30 Know a range of testable properties Bright Sparks Let's Plant It	2.30 Know a range of testable properties Land Sea Sky	3.30 Know which properties to test to see if materials are suitable for a purpose Fairgrounds Full Power	
		1.31 Be able to sort materials into groups according to their observable properties (S) Time Travellers	1.31 Be able to sort materials into groups according to their observable properties (S) Look and Listen! The Magic Toymaker	2.31 Be able to compare common materials and objects and their properties Bright Sparks Let's Plant It	2.31 Be able to compare common materials and objects and their properties Land Sea Sky	3.31 Be able to group and classify materials according to testable properties Bake It Fairgrounds Full Power	
		1.32 Understand that what we use materials for is dependent upon their properties (U) Buildings Time Travellers	1.32 Understand that what we use materials for is dependent upon their properties (U) The Magic Toymaker	2.32 Understand that different materials are suited to different purposes Bright Sparks	~~2.32~~ ~~Understand that different materials are suited to different purposes~~	3.32 Understand that changing some materials makes them more or less suitable for their purposes Bake It	

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		~~1.33~~ ~~Know that temperature is a measure of heat~~	~~1.33~~ ~~Know that temperature is a measure of heat~~	~~2.33~~ ~~Know that some materials conduct heat more effectively than others~~	~~2.33~~ ~~Know that some materials conduct heat more effectively than others~~	3.33 Know that insulators are designed to maintain temperature, whether it be hot or cold Bake It - covered in Science extension task	
Chemistry: Matter	Explore properties of different materials a1	1.39 Be able to compare solids and liquids (S) Buildings		2.39 Be able to compare solids, liquids and gases Shake It	2.39 Be able to compare solids, liquids and gases Land Sea Sky	3.39 Be able to describe and illustrate the different arrangements of particles in solids, liquids and gases Bake It	
Chemistry: Changes	Know that temperature can change materials sp2 Observe the effect of decay over time Sum2	1.40 Know that there are different ways to change materials Buildings	1.40 Know that there are different ways to change materials The Magic Toymaker	2.40 Know that some changes are reversible and some are irreversible Shake It	~~2.40~~ ~~Know that some changes are reversible and some are irreversible~~	3.40 Know that there are different ways to reverse a selection of changes Bake It	
				2.41 Know that some substances dissolve in liquids and others do not Shake It	~~2.41~~ ~~Know that some substances dissolve in liquids and others do not~~	3.41 Know the basic factors that affect solubility Bake It	

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		1.42 Be able to observe how things change when water is added (S) Buildings		2.42 Be able to separate insoluble solids from liquids Shake It	~~2.42~~ ~~Be able to separate insoluble solids from liquids~~	3.42 Be able to separate simple mixtures Bake It	
				2.43 Know that heating or cooling can bring about a change of state Shake It	2.43 Know that heating or cooling can bring about a change of state Land Sea Sky	3.43 Know that different amounts of heating or cooling are required to bring about a change of state Bake It	
						3.45 Know that elements cannot be broken down into smaller parts Bake It	
Physics: Earth & Space		1.48 Understand that the position of the sun in the sky appears to change during the course of a day (U) Time Travellers	1.48 Understand that the position of the sun in the sky appears to change during the course of a day (U) Live and Let Live	~~2.48~~ ~~Understand that day and night are caused by the Earth spinning on its own axis~~	~~2.48~~ ~~Understand that day and night are caused by the Earth spinning on its own axis~~		3.48 Understand that the position of the sun in the sky appears to change during the course of a day and this is different over the course of a year Space Scientists

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		1.49 Know that the Moon is not a source of light (K) Time Travellers	1.49 Know that the Moon is not a source of light Look and Listen!	~~2.49~~ ~~Know that the Moon appears to~~ ~~change shape over the course~~ ~~of a month and is repeated every~~ ~~month~~	~~2.49~~ ~~Know that the Moon appears to~~ ~~change shape over the course~~ ~~of a month and is repeated every~~ ~~month~~		3.49 Know the names of the phases of the Moon Space Scientists
		1.50 Know that the Sun, Earth and Moon are (approximately) spherical (K) Time Travellers	~~1.50~~ ~~Know that the Sun, Earth and Moon~~ ~~are (approximately) spherical~~	~~2.50~~ ~~Know that the Sun is a star at the~~ ~~centre of our solar system~~	~~2.50~~ ~~Know that the Sun is a star at the~~ ~~centre of our solar system~~		3.50 Know that the Sun is the largest mass in our solar system, that has the strongest gravitational pull and keeps the planets in orbit Space Scientists
	To understand length of day and night changes and begin to link to the season A2 Understand the effect of changing seasons on the natural world around them A2 and Sum2	1.51 Know that the time taken for the Earth to orbit the Sun is equal to one year The Earth Our Home	~~1.51~~ ~~Know that the time taken for the~~ ~~Earth to orbit the Sun is equal to~~ ~~one year (K)~~	~~2.51~~ ~~Know that seasons are caused by~~ ~~the combination of Earth's orbit~~ ~~around the sun and the tilt of its~~ ~~axis~~	~~2.51~~ ~~Know that seasons are caused by~~ ~~the combination of Earth's orbit~~ ~~around the sun and the tilt of its~~ ~~axis~~		3.51 Know that planets take different lengths of time and paths to orbit the Sun Space Scientists
				~~2.52~~ ~~Understand that the Earth is part~~ ~~of a system of planets that orbit~~ ~~around the same star~~	~~2.52~~ ~~Understand that the Earth is part~~ ~~of a system of planets that orbit~~ ~~around the same star~~		3.52 Understand how the Earth meets the conditions for sustaining human life Space Scientists

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	Explore and talk about the force of gravity Sp1 Explore and talk about different forces Sp1					3.53 Be able to use weight and mass correctly in experiments Fairgrounds 3.54 Know that a force called gravity keeps things on the ground Fairgrounds	~~3.53~~ ~~Be able to use weight and mass correctly in experiments~~ 3.54 Know that a force called gravity keeps things on the ground Space Scientists
		1.55 Know that food is a store of energy (K) Superhumans		2.55 Know that heat, light, sound and movement are evidence of energy transfer taking place Bright Sparks	2.55 Know that heat, light, sound and movement are evidence of energy transfer taking place Making Waves	3.55 Know that transfer of energy is needed to generate electricity Full Power	
	Explore properties of different materials a1			~~2.56~~ ~~Know that materials conduct heat differently to each other depending on what they're made of~~ Not NC	~~2.56~~ ~~Know that materials conduct heat differently to each other depending on what they're made of~~ Not NC	3.56 Know that conductors and insulators affect the rate of heat energy transfer Bake It - within Science Extension task	

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		~~1.57~~ ~~Be able to predict some impacts~~ ~~on our lives if electricity were no~~ ~~longer available~~	~~1.57~~ ~~Be able to predict some impacts~~ ~~on our lives if electricity were no~~ ~~longer available~~ (REMOVED - CHECK)	~~2.57~~ ~~Be able to give reasons why we~~ ~~should save/conserve electricity~~ Not NC	~~2.57~~ ~~Be able to give reasons why we~~ ~~should save/conserve electricity~~ Not NC	3.57 Be able to compare a renewable and non-renewable way of producing electricity Full Power	
		~~1.58~~ ~~Know which everyday appliances~~ ~~use electricity~~	~~1.58~~ ~~Know which everyday appliances~~ ~~use electricity~~ (REMOVED - CHECK)	2.58 Know that electricity is something which is generated Bright Sparks	~~2.58~~ ~~Know that electricity is something~~ ~~which is generated~~	3.58 Know that different appliances consume different amounts of energy to do different tasks Full Power	
Physics: Electricity and electromagnetism				2.59 Know the names of the components and the related symbols in a circuit Bright Sparks	~~2.59~~ ~~Know the names of the components and the related~~ ~~symbols in a circuit~~	3.59 Know the names of types of circuit Fairgrounds Full Power	
				2.60 Be able to use electrical circuits to investigate the conductivity of various materials Bright Sparks	~~2.60~~ ~~Be able to use electrical circuits~~ ~~to investigate the conductivity of~~ ~~various materials~~	3.60 Be able to draw and build series and parallel circuits Fairgrounds Full Power	

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				2.65 Know about the principles of magnets and how to test materials for magnetic properties Bright Sparks	~~2.65~~ ~~Know about the principles of magnets and how to test materials for magnetic properties~~	3.65 Know that bar magnets have two poles and that opposite poles attract Fairgrounds	3.65 Know that bar magnets have two poles and that opposite poles attract Space Scientists
Physics: Waves		1.67 Know that sounds are made when objects vibrate (K) Superhumans			2.67 Know how sounds are changed by altering the nature of vibrations How Humans Work Making Waves	3.67 Know that sounds require a medium to travel through Fairgrounds	
		1.68 Understand how humans have made use of sound and light sources (U) From A to B		~~2.68~~ ~~Understand that light and sound travel at different speeds~~	2.68 Understand that light and sound travel at different speeds Making Waves	3.68 Understand some of the risks associated with light and sound Fairgrounds	3.68 Understand some of the risks associated with light and sound Space Scientists
			1.69 Know that darkness is the absence of light Green Fingers	~~2.69~~ ~~Know that we see things because light travels from a source and reflects from an object into our eyes~~	2.69 Know that we see things because light travels from a source and reflects from an object into our eyes How Humans Work Making Waves	3.69 Know that light travels in a straight line until it hits an object Fairgrounds	3.69 Know that light travels in a straight line until it hits an object Space Scientists

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	Explore and talk about light and shadows Sp1	~~1.70~~ ~~Be able to predict the shape of a shadow that blocks the passage of light from a source~~	1.70 Be able to predict the shape of a shadow that blocks the passage of light from a source (S) Magic Toymaker	2.70 Be able to predict how the shape of a shadow would change based upon the distance of the light source	2.70 Be able to predict how the shape of a shadow would change based upon the distance of the light source	3.70 Be able to predict how the shape of the shadow would change depending on the position of the light source relative to the object Fairgrounds	3.70 Be able to predict how the shape of the shadow would change depending on the position of the light source relative to the object Space Scientists
				~~2.71~~ ~~Know the order of colours in the visible spectrum/rainbow~~	2.71 Know the order of colours in the visible spectrum/rainbow Making Waves	3.71 Know that white light is a mixture of all of the colours in the visible spectrum Fairgrounds	
						3.72 Understand why the eye changes in response to light and dark Fairgrounds	
Physics: Forces	Explore and talk about different forces Sp1 Explain how things work and why they might happen Sum 2	1.73 Know how pushes and pulls can move an objects Buildings	1.73 Know how pushes and pulls can move an object (K) The Magic Toymaker	2.73 Know how pushes and pulls can temporarily or permanently change the shape of an object Shake It feel the force	~~2.73~~ ~~Know how pushes and pulls can temporarily or permanently change the shape of an object~~	3.73 Know the five possible effects a force can have Fairgrounds	

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		1.74 Be able to create push and pulls of different strengths (S) Buildings		2.74 Be able to compare forces, stating which is stronger Feel the force		3.74 Be able to measure forces using a Newton meter Fairgrounds	
		1.75 Understand how air resistance can slow or hinder movement (U) From A to B		2.75 Understand why we need friction Feel the force		3.75 Understand how friction and air resistance impact on movement Fairgrounds	
						3.76 Know the forces involved in the stretching and squashing of springs and elastic bands Fairgrounds	
				2.77 Know that forces have a direction Feel the force		3.77 Know that a fulcrum provides a pivot point Fairgrounds	

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				2.80 Be able to identify simple machines in their environment Shake It	~~2.80~~ ~~Be able to identify simple machines~~ ~~in their environment~~	3.80 Be able to sort simple machines by how they work Fairgrounds	