

Year Group : 1	Topic: Humans	Term: Autumn term
Previous Learning:	Aims:	
	Expectation: <ul style="list-style-type: none"> • I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. • I can name and describe the job of some of the organs inside my body. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Investigating sizes of hands/feet to age. • Do we get taller as we get older? Class life graphing investigation – Month of birth and heights • Simon Says – put your hands on a body part. • Blind senses – bags of objects for touch, recognize the smell, does it make a noise. • Is my hearing better with my eyes closed? • Straw humans and label the body parts. • Drawing round each other's bodies and labelling body parts on the playground with chalk. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 1	Topic: Animals	Term: Spring 1
Previous Learning:	Aims:	
	Expectation: <ul style="list-style-type: none"> • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Challenge: <ul style="list-style-type: none"> • identify and describe the habitats in which different animals live. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • To create a fact file about a group of animals –what have they all got in common link to carnivores, herbivores and omnivores. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? 	

<ul style="list-style-type: none"> • Sorting pictures into groups giving verbal reason for their classification e.g. animals that swim, fly, nocturnal being to link animals to their classification. • Use National Geographic Kids website to find out about different animals. • Make bug hotels for Minibeasts/Spiders Investigation • Where do different minibeasts prefer to live? • Caring for a class pet – stick insects cheap and easy to look after. • Visit to Hatton Farm Year Group : 1 or Twycross Zoo. • Research class scientist – David Attenborough – watch some clips. • Animal hunt: where would you find the animals? Water, sky, land. Create areas in the hall, or tables. 	<ul style="list-style-type: none"> • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings
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Year Group : 1	Topic: Materials	Term: Spring 2
Previous Learning:	Aims:	
	Expectation: <ul style="list-style-type: none"> • I can distinguish between an object and the material from which it is made • I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. • I can describe the simple physical properties of a variety of everyday materials. • I can compare and group together a variety of everyday materials on the basis of their simple physical properties. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • To compare shiny/dull materials with smooth/rough materials. • Which materials are waterproof? • What materials are used in our local community for buildings, paths and roads? • Which kitchen roll is most absorbent? • Which materials are opaque and transparent? Challenge – How many layers of a material do you need to make it opaque? • Investigating stretchy toys • Describing the material properties of a variety of sweets – good practice at using the vocabulary and sorting objects into groups. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

<ul style="list-style-type: none"> • Labelling materials in sports equipment and suggesting why they are used. • Making bricks • Investigating structures and strength with newspaper tubes and or art straws. • Design Challenge – children design their own house of the future and label the materials they use 	
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Year Group : 1	Topic: Plants	Term: Summer 1
Previous Learning:	Aims:	
	Expectation: <ul style="list-style-type: none"> • I can identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen. • I can describe the basic structure of a variety of common plants including roots, stem, leaves and flowers. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • How can we group leaves? Observe, compare and group leaves. • Which tree is the oldest? Carry out a tree survey in the local park measure circumference using string. • Grow beans – monitor growth using photos and measurements. Keep a bean diary. • What trees and plants grow in our local area? Use books and the internet to identify common plants. • What have all flowers got in common? Compare flowers. • To investigate fruit and vegetables. • Grow carrot tops and measure growth. • Use microscopes and magnifying glasses to make close up observations of plants. • Match flower/trees names to pictures • Make compost • Labelling diagram of a plant. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 1	Topic: Investigations	Term: Summer 2
<p>Working Scientifically aims for Year 1:</p> <ul style="list-style-type: none"> • I can observe patterns or regular changes in features of objects, living things and events. • I can make some contribution to planning and evaluation and to recording findings. • I can ask simple questions about the world around me. • I can observe closely, using simple equipment. • I can perform simple tests. • I can identify and classify. • I can use my observations and ideas to suggest answers to questions • I can gather and record data to help in answering questions. 		
Possible investigations/activities:	Things to consider:	
<p>Investigating toy cars Big Question: How can I make a toy car travel fastest? Film children doing activity, watch back and ask questions – how do you make your vehicle go faster? How do you make it slow down and stop? Children observe closely and perhaps make simple measurements such as distance or time to compare movement.</p> <p>Investigating falling Big Question: Does everything fall in the same way? Film children dropping a variety of objects – different shapes and weights. How do the objects move? Which fall quicker and which fall slower? What might be making the objects fall? What could you do to make yourself fall slower? Children carry out tests to compare different materials falling. Children video each other dropping materials to watch back and analyse.</p> <p>Investigating magnets Big Question: What objects will stick to a magnet? Children use magnets to investigate the world around them – inside and outside of the classroom. Which materials will stick and which will not? How could magnets be useful?</p> <p>Investigating electricity Big Question: How do we make a lamp light up? Children explore how to make a lamp light up. What do they need to make it light? How can they make a lamp brighter? How can they make a light dimmer? Children perform simple tests to find answers to the questions.</p> <p>Investigating sound Big Question: How are sounds made? Children explore a variety of percussion instruments. How do you make them louder? How do you make them quieter? What is making the sound?</p>	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Children are encouraged to ask questions about how sounds are made. Children classify and group musical instruments based on their observations.	
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Year Group : 1	Topic: Seasons	Term: On-going
Previous Learning:	Aims:	
	Expectation: <ul style="list-style-type: none"> • I can name different types of weather. • I can link types of weather to seasons. • I can observe changes across the four seasons • I can observe and describe weather associated with the seasons and how day length varies. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Descriptive writing about seasons. • Explanation text – why do we have day and night? • Weather charts – Monthly rainfall, temperature. • Measuring Volume of water - rainfall • How does the Sun move? Solar Observations – Children Record the position of the Sun in the Sky at different times of the day. • How does our local environment change over the seasons? Photography project over the year. • How does the length of the day change? • How does my shadow change over the day? • Invite children to bring in artefacts related to the season • Make a display of changing seasons from nature timeline and add children’s observations and comments, collect objects. • Take pictures of the playground every month to compare • Create a class weather station and monitor weather over the year. • Day and night - Our nearest star. What do we already know about the Sun? How is it important to our lives on Earth? What would you like to learn about the Sun? day/night • Comparing seasons around the world. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 2	Topic: Humans including animals	Term: Autumn 1
Previous Learning: Year 1	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<p>Expectation:</p> <ul style="list-style-type: none"> • I can notice that animals, including humans, have offspring which grow into adults • I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <p>Challenge:</p> <ul style="list-style-type: none"> • I can identify how animals, including humans, resemble their parents in many features. • I can identify how animals are suited to and adapt to their environment in different ways. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Class pet – tadpoles, stick insects – what do we need to do to look after them? Link back to nursery learning class. • Do all humans look the same? Compare. • What is the best way to wash your hands? Children investigate different techniques to wash paint off their hands. • How does exercise affect how many breaths you make every minute? • Planning a healthy menu and cooking. • Unhealthy food and make it healthy. • Research why particular animals live in particular areas – tree frog in the rainforest, camels in the desert. • Making antibacterial hand soap. Accurate measuring and mixing of chemicals. <p>http://www.kidsbiology.com/animals-for-children.php</p> <p>http://www.bbc.co.uk/newsround/animals/</p>	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 2	Topic: Living Things and their habitat	Term: Autumn 2
Previous Learning: Year 1	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 	<p>Expectation:</p> <ul style="list-style-type: none"> • I can explore and compare the differences between things that are living, dead, and things that have never been alive 	

<ul style="list-style-type: none"> • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. <p>Challenge:</p> <ul style="list-style-type: none"> • identify and describe the habitats in which different animals live. 	<ul style="list-style-type: none"> • I can identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • I can identify and name a variety of plants and animals in their habitats, including micro-habitats. • I can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. <p>Challenge:</p> <ul style="list-style-type: none"> • I can identify the life processes for all living things (MRS GREN). • I can compare and contrast habitats.
<p>Possible investigations/activities:</p> <ul style="list-style-type: none"> • What does a plant need to stay healthy and grow? (Dark, Light, Water, Dry) • How can we group animals by their features? (Birds, Reptiles, Mammals, Fish and Amphibians) • Which conditions do different minibeasts prefer? (Woodlice Investigation – make a choice chamber) • Comparing Habitats (Rainforest/local woodland/Pond/Desert/Arctic/Rock pools) • Grouping living, non-living and dead things. • How are different animals/plants suited to their habitats? Labelling features and explaining. • Taking care of a class pet – stick insect/goldfish etc. • Zoo trip – identifying species and finding different examples. • Animal Top Trump Cards • RSPCA Visit • Writing a guide for looking after a pet. • To draw a bar chart to compare the numbers of different • How environments/habitats need to be protected – looking after our local habitat 	<p>Things to consider:</p> <ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings

Year Group : 2	Topic: Materials	Term: Spring 1
Previous Learning: Year 1	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can distinguish between an object and the material from which it is made • I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. • I can describe the simple physical properties of a variety of everyday materials. • I can compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<p>Expectation:</p> <ul style="list-style-type: none"> • I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <p>Challenge:</p> <ul style="list-style-type: none"> • I can use the idea of forces to explain how materials change shape. • I can explain how some materials are good at letting heat through and some stop heat coming through – Insulators and conductors. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • What sort of materials are in our classroom? Children make observations; try to group the materials they find. • What sort of materials are in our community? Children make observations of buildings, roads and pavements; try to group the materials they find. • Which materials can I squash? Which are the squashest? • Which materials can I stretch? Which are most stretchy? Measuring length with weights hanging from them – different types of plastic bags, stretchy animals. (Which superhero has the stretchiest tights?) • Which material bends the most? Comparing plastic and wooden rulers with weights hanging from them. • Which shape structure is the strongest? (Art Straws tower – context earthquake proof) • Shelter building – what properties do materials need to have if you are building a shelter and why? • Making bricks and testing them • Make recycled paper. • Labelling materials on photographs of everyday objects. • Comparing two similar objects made from different materials – which is better and why? 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 2	Topic: Plants	Term: Spring 2
Previous Learning: Year 1	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen. • I can describe the basic structure of a variety of common plants including roots, stem, leaves and flowers. 	<p>Expectation:</p> <ul style="list-style-type: none"> • I can observe and describe how seeds and bulbs grow into mature plants • I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy <p>Challenge:</p> <ul style="list-style-type: none"> • I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • How long does it take for a sunflower to reach full size? Which sunflower will be the tallest? • Plant and observe garlic bulbs growing. • What happens to a bean when it germinates? Do all beans do the same thing? • How does temperature affect how quickly a plant grows? • How does light level affect how quickly a plant grows? • What is the best amount of water to give a plant? • Keep a diary of plant growth, beans, sunflowers, summer bedding plants. • Making careful observations of plants – careful sketches of leaves and flowers. • Plotting graphs of plant height against time – whole class sunflower growth monitoring. • Bar chart of height/number of leaves vs. Amount of sunlight • Bar chart of height/number of leaves vs. temperature. • Bar chart of height/number of leaves vs. Amount of water. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 2	Topic: Movement	Term: Summer 2
Previous Learning:	Current Aims:	
Expectation: <ul style="list-style-type: none"> • 	Expectation: <ul style="list-style-type: none"> • I can use the words push and pull to describe situations in real life. • I can use the words move, stop, slow down and speed up to describe things I observe. • I can notice and describe how things move, using simple comparisons such as faster and slower. • I can compare how different things move. • I can use arrows on diagrams/photos of moving objects to show the forces that are making them move. • I recognise that there are forces like gravity, thrust, up thrust, friction and air-resistance that can make objects move or make them slow down. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Investigating toy cars on ramps – changing the surface to link with learning about materials. • Investigating paper aeroplanes – changing size, shape or weight to measure how far the planes travel. • Investigating paper spinners – timing how long different sizes or weights take to fall. • Observing a Newton’s cradle • Bring bikes and scooters to school day – investigate how they move and stop on the playground. • Watching videos of different types of movement – athletes, sports, vehicles, animals. Describing and explaining observations. • Drawing simple force diagrams with arrows on different real life situations. • Road safety – breaking distances and speed limits – relate to crossing roads safely. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 3	Topic: Rocks	Term: Autumn 1
Previous Learning:	Current Aims:	
	<ul style="list-style-type: none"> • I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties – hard, waterproof, strong 	

	<ul style="list-style-type: none"> •I can describe in simple terms how fossils are formed when things that have lived are trapped within rock •I can recognize that soils are made from rocks and organic matter. <p>Challenge:</p> <ul style="list-style-type: none"> •I can describe the rock cycle and explain how different types of rocks were formed. •I can describe and identify sedimentary, igneous and metamorphic rocks. •I understand why some rocks are porous and some are not.
Possible investigations/activities:	Things to consider:
<p>Which type of rock soaks up the most water? Challenge - Which type of rock is the heaviest? (Introduce the idea of density) Which type of soil does water flow through the quickest? Making careful observations of rocks using magnifying glasses or microscope – record observations. Use Venn diagrams to group rocks based on their features. Make chocolate rocks to model how different sorts of rocks are formed. Make model fossils. Find out about Hutton and his idea of a rock cycle. Find out how soils are formed? Rubbing rocks together.</p>	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings

Year Group : 3	Topic: Forces	Term: Autumn 2
Previous Learning: Year 2	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can use the words push and pull to describe situations in real life. • I can use the words move, stop, slow down and speed up to describe things I observe. • I can notice and describe how things move, using simple comparisons such as faster and slower. • I can compare how different things move. • I can use arrows on diagrams/photos of moving objects to show the forces that are making them move. 	<ul style="list-style-type: none"> • I can compare how things move on different surfaces • I can notice that some forces need contact between two objects, but magnetic forces can act at a distance • I can observe how magnets attract or repel each other and attract some materials and not others • I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • I can describe magnets as having two poles • I can predict whether two magnets will attract or repel each other, depending on which poles are facing. 	

<ul style="list-style-type: none"> I recognise that there are forces like gravity, thrust, up thrust, friction and air-resistance that can make objects move or make them slow down. 	<p>Challenge:</p> <ul style="list-style-type: none"> I can describe magnets as having two poles. I can predict whether two magnets will attract or repel each other, depending on which poles are facing.
<p>Possible investigations/activities:</p> <p>Which materials will stick to magnets? How many layers of card can you place between a magnet and a paperclip before it won't attract? How close will a paperclip get to different magnets before it attracts? Which magnet is the strongest? Using a compass to identify North and South poles. Using a compass to plot field lines. Making a magnetic game Predicting whether magnets will attract or repel. Where are magnets useful? Inventing a device that uses magnets.</p>	<p>Things to consider:</p> <ul style="list-style-type: none"> How much have the children retained from previous learning? How much of the lesson is teacher lead or children investigating? What questions will you ask the children to deepen their understanding? Opportunities for peer or self-assessment? How will the children know what scientific skills or approaches they are using? Teacher/TA groupings

Year Group : 3	Topic: Light	Term: Spring 1
Previous Learning: Year 1	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> Children make the link between the sun and light, day and night being light and dark. 	<ul style="list-style-type: none"> I can recognise that they need light in order to see things and that dark is the absence of light I can notice that light is reflected from surfaces I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes I can recognise that shadows are formed when the light from a light source is blocked by a solid object. I can find patterns in the way that the size of shadows change. 	
<p>Possible investigations/activities:</p> <p>Where is the light brightest in our school? Data logging investigation to investigate our local environment. What factors affect the size of a shadow? Making shadow sticks and measuring shadow size. Which sunglasses will protect our eyes best? Data logging investigation looking at light intensity. <u>Light and Shadows Simulation</u> http://www.bbc.co.uk/schools/scienceclips/ages/7_8/light_shadows.shtml</p>	<p>Things to consider:</p> <ul style="list-style-type: none"> How much have the children retained from previous learning? How much of the lesson is teacher lead or children investigating? What questions will you ask the children to deepen their understanding? Opportunities for peer or self-assessment? How will the children know what scientific skills or approaches they are using? Teacher/TA groupings 	

Year Group : 3	Topic: Humans including animals	Term: Spring 2
Previous Learning: Year 2	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can notice that animals, including humans, have offspring which grow into adults • I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <p>Challenge:</p> <ul style="list-style-type: none"> • I can identify how animals, including humans, resemble their parents in many features. • I can identify how animals are suited to and adapt to their environment in different ways. 	<p>Expectation:</p> <ul style="list-style-type: none"> • I can list healthy and unhealthy foods. • I know that all living things move and need nutrition (MRS GREN) • I can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p>Challenge</p> <ul style="list-style-type: none"> • I can describe the structure and functions of the human skeleton • I can explain the interaction between skeleton and muscles • I can describe the function and actions of major muscle groups 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • To write a healthy eating guide for parents – ‘Healthy pack lunches’ • How do human skeletons compare with those of other animals? • Which crisps have the highest salt/fat content? Analyse data from food packaging, draw graphs and demo burning of each type of crisp to compare observations with findings (Risk Assessment Required) • Create a food diary (Homework) • Make a healthy picnic – sandwich • Label the human skeleton • Learn Skeleton Song • Comparisons between animals what does a bird need? A human? A lion? Create a menu for each. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 3	Topic: Plants	Term: Summer 1
Previous Learning: Year 2	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can observe and describe how seeds and bulbs grow into mature plants • I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy <p>Challenge:</p> <ul style="list-style-type: none"> • I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant 	<ul style="list-style-type: none"> • I can investigate the way in which water is transported within plants • I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. • I know that photosynthesis happens in plants to make their energy for growth. • I can explain the life cycle of plants. 	
Possible investigations/activities:	Things to consider:	
<p>How long does it take for water to travel up a plant? (Investigating Xylem – flowers and celery –microscope to see the xylem)</p> <p>What factors affect plant growth? (Cress seeds in different amounts of light)</p> <p>What do plants grow best in? (Comparing soil, sand, cotton wool, paper etc – Grass seeds and cress seeds)</p> <p>Designing a seed to fly far from the tree?</p> <p>Making observations of plants – accurate drawing and labelling.</p> <p>Grouping plants by observation – Venn diagram</p> <p>Challenge – creating an identification key for a group of plants.</p> <p>Preparing and planting vegetable patch – to be cared for by the class of the Spring and Summer term.</p> <p>Observing the germination of beans.</p> <p>Observing and comparing seeds</p> <p>Sunflower seed growing competition</p>	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 3	Topic: Investigations	Term: Summer 2
<p>Working Scientifically aims for Year 3:</p> <ul style="list-style-type: none"> • I ask relevant questions. • I can set up simple practical enquiries, comparative and fair tests. • I can make accurate measurements using standard units, using a range of equipment, for example thermometers and data loggers. • I can gather, record, classify and presenting data in a variety of ways to help in answering questions. • I can record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables. • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • I can use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests • I can identify differences, similarities or changes related to simple scientific ideas and processes. 		
Possible investigations/activities:		Things to consider:
<p>Making and testing invisible inks Luminous layers – making different coloured concentrations of salt solution – float them on top of each other in narrow tubes. Vinegar and bicarbonate of soda rockets – what are the best quantities to use? How does the size of a piece of Alka Seltzer affect how long it fizzes for? How can I keep my hot chocolate warm for the longest time?</p>		<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings

Year Group : 4	Topic: Sound	Term: Autumn 1
Previous Learning: Year 1	Current Aims:	
Children learnt about their senses and using our ears to hear.	<ul style="list-style-type: none"> • I can identify how sounds are made, associating some of them with something vibrating • I can recognise that vibrations from sounds travel through a medium to the ear • I can find patterns between the pitch of a sound and features of the object that produced it • I can find patterns between the volume of a sound and the strength of the vibrations that produced it • I can recognise that sounds get fainter as the distance from the sound source increases. <p>Challenge:</p> <ul style="list-style-type: none"> • I can describe and compare the frequencies of sound waves. 	

	<ul style="list-style-type: none"> • I can state speed of sound in air. • I can investigate the auditory range of humans and compare it with other animals. • I understand that sound waves carry energy. • I can use the particle model to explain how sound waves move.
Possible investigations/activities:	Things to consider:
<ul style="list-style-type: none"> • How do different instruments make sounds? • How do we make sounds louder and quieter? • What materials can sound travel through? • What materials will stop sound travelling? Sound proofing • Investigating water in milk bottles • How does the volume of sound change with distance? • Making junk instruments • How do our ears work? Labelling a diagram of the ear • Guess the mystery sound? • Measuring our hearing range using audacity? Comparing human hearing ranges with other animals. • Observing vibrations – rice on a drum and tuning forks on water. • Observe video clip of bell jar experiment 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings

Year Group : 4	Topic: Electricity	Term: Autumn 2
Previous Learning:	Current Aims:	
<ul style="list-style-type: none"> • Children will have practical experience with electricity but no formal learning in school. • Through PSHE, children should have covered safety measures with electricity. 	<ul style="list-style-type: none"> • I can identify common appliances that run on electricity • I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • I can recognise some common conductors and insulators, and associate metals with being good conductors. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Class scientist to research – Thomas Edison • To create an information leaflet or poster about how to keep safe in the home. • identify electrical appliances around us. Sorting game. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? 	

<ul style="list-style-type: none"> • To investigate conductors and insulators. • To make and compare simple circuits – series only. • To find out how electricity is made. • To make and compare fruity batteries. • Research solar panels. • To create electrical safety in the home posters. • What is lightning? Research and report writing. 	<ul style="list-style-type: none"> • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings
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Year Group : 4	Topic: Humans including animals	Term: Spring 1
Previous Learning: Year 3	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can list healthy and unhealthy foods. • I know that all living things move and need nutrition (MRS GREN) • I can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p>Challenge</p> <ul style="list-style-type: none"> • I can describe the structure and functions of the human skeleton • I can explain the interaction between skeleton and muscles • I can describe the function and actions of major muscle groups 	<ul style="list-style-type: none"> • I can describe the simple functions of the basic parts of the digestive system in humans • I can identify the different types of teeth in humans and their simple functions • I can construct and interpret a variety of food chains, identifying producers, predators and prey. • I can describe the role of each food group in the body. • I can explain how the body breaks down food – digestion – using the idea of molecules. • I know that our blood carries energy from food around the body. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Which cereal has the most iron in it? (Practical investigation using magnets) • Which drink causes the most damage to teeth? (leaving dirty coins in different drinks to compare the effects) • Demonstration of the food's journey through the body accompanied by video footage. Children then use a key vocabulary list to write a story – A day in the life of Tommy the Tomato seed. • Label the organs in the digestive system • Create a table of food groups and their job in the body. • Observing and recording information about our teeth. • Creating healthy Menu's for different individuals. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

<ul style="list-style-type: none"> • Making a healthy pack lunch. • Looking at diets of different animals (pets/zoo animals etc) • Creating food chains and webs for different environments 	
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Year Group : 4	Topic: Living things and their habitat	Term: Spring 2
<p>Previous Learning: Year 2</p> <p>Expectation:</p> <ul style="list-style-type: none"> • I can explore and compare the differences between things that are living, dead, and things that have never been alive • I can identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • I can identify and name a variety of plants and animals in their habitats, including micro-habitats. • I can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. <p>Challenge:</p> <ul style="list-style-type: none"> • I can identify the life processes for all living things (MRS GREN). • I can compare and contrast habitats. 	<p>Current Aims:</p> <ul style="list-style-type: none"> • I can recognise that living things can be grouped in a variety of ways • I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • I can recognise that environments can change and that this can sometimes pose dangers to living things. • I can create food webs for a particular habitat. • I know and can use the terms producer, prey and predator <p>Challenge:</p> <ul style="list-style-type: none"> • I can explain the classification of living things into broad groups according to common, observable characteristics and based on similarities and differences, including plants, animals and micro-organisms 	
<p>Possible investigations/activities:</p> <ul style="list-style-type: none"> • What insects live in our local environment? • What plants live on our school playing field? • Which weed is most successful – daisy or dandelion? • How have populations of animals changed when their environments have changed? Deforestation in the rainforest, Hunting and Ivory trade in Africa, Palm Oil trade in Borneo etc • Data based investigation • How have humans helped protect animals and their habitats? Local case study if possible • Creating Food Chains (Webs) 	<p>Things to consider:</p> <ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 4	Topic: States of matter	Term: Summer Term
<p>Previous Learning: Year 2</p> <ul style="list-style-type: none"> • I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <p>Challenge:</p> <ul style="list-style-type: none"> • I can use the idea of forces to explain how materials change shape. • I can explain how some materials are good at letting heat through and some stop heat coming through – Insulators and conductors. 	<p>Current Aims:</p> <ul style="list-style-type: none"> • I can compare and group materials together, according to whether they are solids, liquids or gases • I can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 	
<p>Possible investigations/activities:</p> <ul style="list-style-type: none"> • What which melts fastest – Ice cream, butter or ice? • Which evaporates quickest – water, vinegar or nail varnish remover? • How does the temperature of ice cream change over time? • How does the temperature of wax/water change as you heat it up? • Which type of chocolate melts fastest? • How do they make condensed and evaporated milk? • What conditions make washing dry quicker? • Observing ice balloons – fill balloons with water and food colouring and freeze – fascinating to observe over time. • Observing cooking eggs • Making it rain in a jar and Observing condensation on a mirror. • Solid, liquid and gas role play to get the idea of particle movement. • Water cycle diagram and create a changes of state diagram • Making ice cream or lollies • Popcorn in butter over heat to demonstrate changes in particle arrangement during changes of state. 	<p>Things to consider:</p> <ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 5	Topic: Properties and Matters	Term: Autumn 1
Previous Learning: Year 4	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can compare and group materials together, according to whether they are solids, liquids or gases • I can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 	<ul style="list-style-type: none"> • I can compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • I can explain how two liquids can be separated by distillation. • I can explain changes of state in terms of the particle model. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Which material is the hardest? (Scratch testing with iron nail and magnifying glass) • Which material dissolves best in water? (comparing the time for salt, sugar, flour, washing powder to dissolve) • What factors affect how quickly a solid dissolves? (Different sized particles of sugar/ different temperatures) • What happens to the transparency of a material as it gets thicker? (data logger to measure light intensity with increasing layers) • Which material is the best thermal insulator? (Hot Chocolate/Penguins investigation) • Which material is most magnetic? (Measure the distance in mm that a material can move towards a magnet before it experiences a force) • Particle model role play on the playground to illustrate changes of state. • Separating mixtures challenge. Demonstrations of different separation techniques. • Match material properties to their job – sports equipment 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

<ul style="list-style-type: none"> Classifying materials according to their properties – venn diagram – material properties of sweets – challenge identification key using questions only related to material properties. 	
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Year Group : 5	Topic: Forces	Term: Autumn 2
Previous Learning: Year 4	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> I can compare how things move on different surfaces I can notice that some forces need contact between two objects, but magnetic forces can act at a distance I can observe how magnets attract or repel each other and attract some materials and not others I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials I can describe magnets as having two poles I can predict whether two magnets will attract or repel each other, depending on which poles are facing. 	<ul style="list-style-type: none"> I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces I can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. I can draw accurate force diagrams of situations I investigate. I can identify when forces are balanced and unbalanced and explain how this relates to the movement of objects. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> What shape would be best for a sensor that you want to fall to the bottom of the ocean? Different shaped plasticine shapes –time the fall – could change liquid and look at viscosity. Which surface gives the greatest friction? Measuring the angle of the slope that will make an object move. Best grip for shoes. What is the best design for a rocket? Changing nose cone shapes and investigating effect on distance travelled. Which boat shape or sail shape would reduce friction forces the most? Circus of activities – what causes forces and what are their effects? Magnets, friction, air resistance, floating and sinking, electrical forces (balloon static), tug of war, stretch and squashing etc Circus of activities – how do simple machines make work easier? Children investigate a range of levers, pulleys, gears etc and observe their effect on input and output forces. 	<ul style="list-style-type: none"> How much have the children retained from previous learning? How much of the lesson is teacher lead or children investigating? What questions will you ask the children to deepen their understanding? Opportunities for peer or self-assessment? How will the children know what scientific skills or approaches they are using? Teacher/TA groupings 	

Year Group : 5	Topic: Humans and Animals	Term: Spring 1
Previous Learning: Year 2	Current Aims:	
<p>Expectation:</p> <p>Year 2 children learnt that babies grow into older adults and we all look different.</p>	<ul style="list-style-type: none"> • I can describe the changes as humans develop to old age. • I understand that all living things have lifecycles. • I understand that the reproductive process begins with cells and that all living things are made from cells. • I can compare reproduction in plants with reproduction in animals. • I understand the difference between asexual and sexual reproduction. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Comparing the gestation periods of different animals – graph work. • Create a human lifecycle timeline • To compare life expectancy around the world or over history – graph analysis work. • To research and create a puberty guide. • To compare the lifecycles of humans with other animals. • To see high speed video/images of human and animal growth in the womb. • How does a baby's size change over time? • How are different animals born? Video based investigation – observations recorded, research to find out extra details, compare and contrast exercises, conclusions written • The BBC have a collection of KS2 video clips to support PSHE around the subject of growing up – check for suitability: www.bbc.co.uk/education/topics/z3xxsbk 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 5	Topic: Living Things and their habitat	Term: Spring 2
Previous Learning: Year 4	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can recognise that living things can be grouped in a variety of ways • I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • I can recognise that environments can change and that this can sometimes pose dangers to living things. 	<p>Expectation</p> <ul style="list-style-type: none"> • I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • I can describe the life process of reproduction in some plants and animals. <p>Challenge</p> <ul style="list-style-type: none"> • I can analyse to links between insect pollination and food security. 	

<p>Possible investigations/activities:</p> <ul style="list-style-type: none"> • Comparing lifecycles of a variety of animals – drawing and analysing charts/graphs. • Creating mythical creatures and creating their lifecycles drawing on their understanding of classification of animals • Use the internet to research the lifecycles of animals. • Send an email to zoo keeper, specialist or zoologist to find out more about their chosen animal • Investigating the stages in a sunflower's life. • Comparing sexual and asexual reproduction in plants and animals. • Investigating Seed dispersal – different seeds and how the wind carries them. • Making notes on a video – how are seeds dispersed? Creating a poster to share summarised information. • To compare local habitats with those in other parts of the world – compare animal and plant populations. • Research how bees are important for plant and food survival – Bee Movie clips on YouTube • Research Class scientist Eva Crane 	<p>Things to consider:</p> <ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings
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Year Group : 5	Topic: Earth and Space	Term: Summer 1
<p>Previous Learning: Year 1</p> <p>Expectation: Children learnt that the sun moves across the sky connections to day and night.</p>	<p>Current Aims:</p> <ul style="list-style-type: none"> • I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system • I can describe the movement of the Moon relative to the Earth • I can describe the Sun, Earth and Moon as approximately spherical bodies • I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. • I can define gravity force, weight = mass x gravitational field strength (g), on Earth $g=10 \text{ N/kg}$, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only) • I know that our Sun is a star, and there are other stars in our galaxy, and other galaxies 	

	<ul style="list-style-type: none"> • I can explain the seasons and the Earth's tilt, day length at different times of year, in different hemispheres. • I know that the light year as a unit of astronomical distance.
Possible investigations/activities:	Things to consider:
<ul style="list-style-type: none"> • Investigating trends in planetary data e.g. Size vs distance from the Sun or Temperature vs. Distance from the Sun. Make graphs showing the data – understand that the nearest the sun will be warmer etc. • How does the Moon appear to change over a month? – keep a moon diary. • Space box in Phiz Lab has moon sticks to show moons stages. • Investigating the movement of the Sun in the Sky. (Ping pong ball on a stick) • Investigating shadows over a day. • Investigating the link between mass and weight on Earth – comparing with other places • Space Box in the Phiz Lab has set investigations for Year 5 – booklet to support. • Compare the Heliocentric and Geocentric models of the Universe – Links to the Greeks and their understanding of the world. • To write a biography of <i>Ptolemy, Alhazen and Copernicus, Kepler, Galileo.</i> • <i>To make a sundial.</i> • <i>To write a report on Stonehenge and how it was used.</i> 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings

Year Group : 5	Topic: Investigations	Term: Summer 2
<p>Working Scientifically aims for Year 5: Children can write one full report on a investigation.</p> <ul style="list-style-type: none"> • I can plan enquiries based on a question of my own interest • I can take measurements, using a range of scientific equipment, with increasing accuracy and precision • I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models • I can use test results to make predictions to set up further comparative and fair tests. • I can use simple models to describe scientific ideas • I can identify scientific evidence that has been used to support or refute, ideas or arguments. 		
Possible investigations/activities:	Things to consider:	

<ul style="list-style-type: none"> • Which biscuit is best for dunking? Counting the number of dunks till the biscuit collapses. • How much of an aero chocolate bar is air? Measuring volume with displaced water, melting to solid block and re-measuring. • Investigating sound produced by water in bottle – using Audacity (free sound software) to measure volume (amplitude) and pitch (frequency). • How does mould grow? Create a mould garden. • Make and test a wind turbine/anemometer. • Chromatography of sweets – do Skittles and M&M use the same food colouring. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings
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Year Group : 6	Topic: Light	Term: Autumn 1
Previous Learning: Year 3	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can recognise that they need light in order to see things and that dark is the absence of light • I can notice that light is reflected from surfaces • I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes • I can recognise that shadows are formed when the light from a light source is blocked by a solid object. • I can find patterns in the way that the size of shadows change. 	<p>Expectation</p> <ul style="list-style-type: none"> • I can recognise that light appears to travel in straight lines. • I can use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. • I can explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Link to materials and light • Investigation of the eye • Torch and shadow puppets • Comparing natural and man-made light • Investigating plane mirrors – ray diagrams • Investigating curved mirrors – making careful observations • What is the relationship between the distance from the object to the shadow and the size of the shadow? Data collection and line graph analysis • Is it easier for light to travel through a thin transparent material or a thick one? • Investigating lenses and magnification • Investigate the dispersion of light through a prism. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 6	Topic: Electricity	Term: Autumn 2
Previous Learning: Year 4	Current Aims:	
<p>Expectation:</p> <ul style="list-style-type: none"> • I can identify common appliances that run on electricity • I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • I can recognise some common conductors and insulators, and associate metals with being good conductors. 	<p>Expectation</p> <ul style="list-style-type: none"> • I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • I can compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. • I can use recognised symbols when representing a simple circuit in a diagram. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> • Investigating the brightness of a bulb • Investigating if circuits will work or not • Constructing circuits and drawing circuit diagrams. • Comparing series and parallel circuits. • Investigation: How does voltage (number of batteries) affect the brightness of lamps? • Investigation: How does voltage (number of batteries) affect the volume of a buzzer? • Fruity batteries – measuring voltage to find which fruit makes the best battery. • Squidgy circuits – using conductive dough to create electrical art sculpture. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 6	Topic: Evolution	Term: Spring 2
Previous Learning: Year 3	Current Aims:	
<ul style="list-style-type: none"> • Children will have learnt about rocks and fossils in Year 3. 	<p>Expectation</p> <ul style="list-style-type: none"> • I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. • I can describe variation between individuals of different species • I can describe variation between individuals within a species 	
Possible investigations/activities:	Things to consider:	

<ul style="list-style-type: none"> • Link to their own families – what I have I inherited from by parents? • Investigation into animals from other countries – links to rainforest topic. Compare to animals in our local area. • Research into Charles Darwin – class scientist. Horrible History song. • How are birds adapted to survive on their island? Investigation to replicate the work of Darwin in the Galapagos Islands using various size tweezers to pick up various food stuffs – small and large nuts, worms and large fruit. • Comparing skeletons of humans, with Neanderthals and apes. Using images to observe similarities and differences. • Predicting how humans might adapt over years to come based on new technologies and changes to the environment in which we live. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings
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Year Group : 6	Topic: Living things and their habitat	Term: Summer 1
Previous Learning: Year 2	Current Aims:	
<ul style="list-style-type: none"> • I know that animals can be grouped into mammals, reptiles, birds, fish and amphibians. • I can describe the habitats in which different animals and plants are found. 	<p>Expectation</p> <ul style="list-style-type: none"> • I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • I can give reasons for classifying plants and animals based on specific characteristics. 	
Possible investigations/activities:	Things to consider:	
<p>How many groups can plants be organised into and what are their characteristics? Children investigate plant samples provided.</p> <p>How many groups can animals be organised into and what are their characteristics? Children use images of a variety of animals.</p> <p>Modelling microorganisms - children create plasticine models of magnified bacteria, virus' and fungi – create fact files about each one they make, then work collaboratively to group and compare.</p> <p>Research and create a poster on the life cycle of a living thing of your choice – children present their learning to each other. (Plan to ensure coverage of all animal groups)</p> <p>Children use and create identification keys – learn how to create keys by making a key for a selection of sweets.</p> <p>Making and using keys for invertebrate.</p> <p>Comparing invertebrates and vertebrates.</p>	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	

Year Group : 6	Topic: Humans including animals	Term: Summer 2
Previous Learning: Year 4	Current Aims:	
<ul style="list-style-type: none"> • Children understand how a system works from looking at the digestive system. <p>Year 2:</p> <ul style="list-style-type: none"> - Children understand how we can keep our bodies healthy and the impact of exercise on their body. 	<p>Expectation</p> <ul style="list-style-type: none"> • I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • I can describe the ways in which nutrients and water are transported within animals, including humans. identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • I can describe the ways in which nutrients and water are transported within animals, including humans. 	
Possible investigations/activities:	Things to consider:	
<ul style="list-style-type: none"> - Investigating nutrition content using food labels – Which is the unhealthiest chocolate bar/snack? How healthy are ready meals? - Investigating the effect of exercise on our heart rate. - How does water travel around our body? - How do muscles work? Modelling with paper tubes and rubber bands – investigating muscles in different movements. - Research smoking and alcohol and the effects on the body – children prepare presentations. - Labelling the organs in the body. - Creating a healthy lunch – food tech links. - Keeping a diary of drinking – checking water levels. 	<ul style="list-style-type: none"> • How much have the children retained from previous learning? • How much of the lesson is teacher lead or children investigating? • What questions will you ask the children to deepen their understanding? • Opportunities for peer or self-assessment? • How will the children know what scientific skills or approaches they are using? • Teacher/TA groupings 	