	Kingfisher Science Curriculum

Our intent at the Kingfisher Federation is to promote the joy of asking questions, to encourage children to be inquisitive; we want children to see themselves as Scientists. We want children to be equipped with knowledge and skills of science to enable them to become our future, engineers, inventors and scientists.

Each term we plan full coverage of the curriculum using the 'SNAP SCIENCE' scheme. Units are structured across the term as roughly two lessons per week, however class teachers have flexibility to 'block' groups of lessons if appropriate.

Science is a core subject within the National Curriculum, therefore we have used our chosen scheme to carefully map learning so that children have secure and detailed knowledge of all aspects of science across a two-year rolling programme. Emphasis is placed on practical aspects of science. Links are made across units to embed learning, as well as links across subject areas to support children to apply their learning.

In EYFS, children are given opportunities to practise the skills taught in their Science lessons as part of their continuous provision.

We live in a beautiful part of the world and are fortunate to be surrounded by wonderful green spaces. Therefore, within our curriculum we also plan specific longitudinal studies that ensure that children gain a secure understanding of the world immediately around them, for example knowing names of common trees.

Our school sites have spaces that enable the enrichment of science and embedding learning, there are areas for exploring, for growing plants, for observing aquatic life (pond).

Lower and upper Key Stage Two from all schools attend a residential at a local site that places a great emphasis on learning outdoors in its beautiful grounds.

All schools are part of the Ogden Waveney partnership which provides the opportunity for children to take part in scientific enrichment opportunities with other local schools, as well as providing further CPD opportunities for staff.

	Kingfisher Science Curriculum – Units to be studied 2023-2024						
	Autumn A	**Autumn B**	**Spring A**	**Spring B**	**Summer A**	**Summer B**	**Longitudinal Study**
EYFS	**EYFS** Our science journey begins in the EYFS where children will have the opportunities to: · explore the natural world around them, making observations and drawing pictures of animals and plants. · know some similarities and differences between the natural world around them and contrasting environments. · understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.						
Robins (R/1/2)	Looking at animals	What is in your habitat?	Materials- Good choices	Materials- Shaping up	Growing up	Plant detectives	OCW- Sensing seasons
Barn Owls (3/4)	Rock detectives	Can you see me?	Amazing bodies	Where does all that food go?	Where does all that food go?/Who am I?	Human impact/in a state	OCW Y4
Golden Eagles (5/6)	Everything changes	Feel the force	The Earth and beyond	Body pump	Nature library	Materials all change & Marvellous mixtures	OCW Y6
Skylarks (R/1/2)	Looking at animals	What is in your habitat?	Materials- Good choices	Materials- Shaping up	Growing up	Plant detectives	OCW- Sensing seasons
Mallards (3/4)	Rock detectives	Can you see me?	Amazing bodies	Where does all that food go?	Where does all that food go?/Who am I?	Human impact/in a state	OCW Y4
Swans (5/6)	Everything changes	Feel the force	The Earth and beyond	Body pump	Nature library	Materials all change & Marvellous mixtures	OCW Y6
Willow (1/2)	Looking at animals	What is in your habitat?	Materials- Good choices	Materials- Shaping up	Growing up	Apprentice gardener	OCW- Sensing seasons
Maple (3/4)	How does your garden grow?	The power of forces	Amazing bodies	Where does all that food go?	Where does all that food go?/Who am I?	Human impact/in a state	OCW Y4
Silver Birch (5/6)	Everything changes	Feel the force	The Earth and beyond	Body pump	Nature library	Materials all change & Marvellous mixtures	OCW Y5

	Kingfisher Science Curriculum – Unit detail				
		What do the children need to know and be able to do?			
Unit	Kingfisher Ribbons	Skills *and suggested activities*	Vocabulary	Knowledge *and observations*	Assessment

What is in your habitat? (KS1) *(EYFS)*	Biology	Using observations and ideas to suggest answers to questions Gathering and recording data to help in answering questions. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting bees, making a wormery, planning bird feeding on the ground and higher level.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs, or observing ice outdoors.* *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up.* *Provide stories that help children to make sense of different environments.*	habitat, alive, living, once-lived, dead, never-lived, decay, food chain, herbivores, carnivores, omnivores, suited, features	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. To explore and compare the differences between things that are living, things that are dead and things that have never been alive. 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. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Develop an understanding of growth, decay and changes over time* *Show care and concern for living things and the environment* *Begin to understand the effect their behaviour can have on the environment*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		Provide first-hand experiences to support children in making sense of micro-environments, the specific conditions which enable each plant or animal to live and thrive. *Provide stimuli and resources for children to create simple maps and plans, paintings, drawings and models of observations of known and imaginary landscapes.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and vegetable beds or organising equipment outdoors.*		*Look closely at similarities, differences, patterns and change in nature* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment and how environments might vary from one another* *Make observations of animals and plants and explains why some things occur, and talks about changes*	

The apprentice gardener (KS1) *(EYFS)*	Biology	Observing closely, using simple equipment. Asking simple questions and recognising that they can be answered in different ways. Performing simple tests and recording data. Gathering and recording data to help in answering questions. Using observations and ideas to suggest answers to questions. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting bees, making a wormery, planning bird feeding on the ground and higher level.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs, or observing ice outdoors.* *Share stories related to pollution, climate change, habitat erosion, etc.*	seeds, bulb, grow, bean, soil, germinate, root, shoot, leaves, seedling, mature plant, wilting, food store	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Develop an understanding of growth, decay and changes over time* *Show care and concern for living things and the environment* *Begin to understand the effect their behaviour can have on the environment* *Look closely at similarities, differences, patterns and change in nature* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment and how environments might vary from one another*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up. *Provide stories that help children to make sense of different environments.* *Provide first-hand experiences to support children in making sense of micro-environments, the specific conditions which enable each plant or animal to live and thrive.* *Provide stimuli and resources for children to create simple maps and plans, paintings, drawings and models of observations of known and imaginary landscapes.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and vegetable beds or organising equipment outdoors.*		*Make observations of animals and plants and explains why some things occur, and talks about changes*	

Take care (KS1) *(EYFS)*	Biology	Identifying and classifying. Using observations and ideas to suggest answers to questions. ***EYFS- Suggested activities*** *Plan opportunities, particularly after exercise, for children to talk about how their bodies feel.* *Provide outdoor resources which complement indoor provision, with an opportunity for children to play and explore on a larger scale.* *Find ways to involve children so that they are all able to be active inside and outside in ways that interest them and match their stage of development, health and ability.* *Use mobility aids, adapted equipment and clothing to ensure the outdoor area is fully accessible to all children; use portable fencing and zoned areas to change the size of the space to meet children's needs* *Encourage children to be active and energetic by organising lively games, since physical activity is important in maintaining good health and in guarding against children becoming overweight or obese in later life.* *Use visual support to sequence routines such as toileting, handwashing and dressing.* *Establish regular routines for eating, drinking, washing and toileting so that children become familiar with the rhythm of the day*	healthy diet, exercise, physical activity, pulse, muscles, hygiene, hygienic, toothbrush, toothpaste	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. ***EYFS*** *Observes and can describe in words or actions the effects of physical activity on their bodies.* *Can name and identify different parts of the body* *Can wash and can dry hands effectively and understands why this is important* *Can name and identify different parts of the body* *Eats a healthy range of foodstuffs and understands need for variety in food* *Describes physical changes to the body that can occur when feeling unwell, anxious, tired, angry or sad* *Shows some understanding that good practices with regard to exercise, eating, drinking water, sleeping and hygiene can contribute to good health* *Shows understanding of the need for safety when tackling new challenges, and considers and manages some risks by taking independent action or by giving a verbal warning to others*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

Growing up (KS1) *(EYFS)*	Biology	Identifying and classifying. Gathering and recording data to help in answering questions. ***EYFS- Suggested activities*** *Plan opportunities, particularly after exercise, for children to talk about how their bodies feel.* *Provide outdoor resources which complement indoor provision, with an opportunity for children to play and explore on a larger scale. Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting bees, making a wormery, planning bird feeding on the ground and higher level.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up.* *Provide first-hand experiences to support children in making sense of micro-*	baby, alive, essential, shelter, survival, depend, child, toddler, life cycle, stages, pregnancy, birth, teenager, adult, elderly person	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Notice that animals, including humans, have offspring which grow into adults. ***EYFS*** *Can name and identify different parts of the body* *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Develop an understanding of growth, decay and changes over time* *Show care and concern for living things and the environment* *Begin to understand the effect their behaviour can have on the environment* *Look closely at similarities, differences, patterns and change in nature* *Know about similarities and differences in relation to places, objects, materials and living things*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		environments, the specific conditions which enable each plant or animal to live and thrive. *Provide stimuli and resources for children to create simple maps and plans, paintings, drawings and models of observations of known and imaginary landscapes.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and vegetable beds or organising equipment outdoors.*		*Talk about the features of their own immediate environment and how environments might vary from one another* *Make observations of animals and plants and explains why some things occur, and talks about changes*	

Plant detectives (KS1) *(EYFS)*	Biology	Observing closely, using simple equipment. Identifying and classifying. Using observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting bees, making a wormery, planning bird feeding on the ground and higher level.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs, or observing ice outdoors.* *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing,*	weed, leaf, stem, flower, bud, root, root system, tap root, fibrous roots, tree, trunk, branch, twig	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Develop an understanding of growth, decay and changes over time* *Show care and concern for living things and the environment* *Begin to understand the effect their behaviour can have on the environment* *Look closely at similarities, differences, patterns and change in nature* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		making a model or photographing, through music, dancing or dressing up. *Provide stories that help children to make sense of different environments.* *Provide first-hand experiences to support children in making sense of micro-environments, the specific conditions which enable each plant or animal to live and thrive.* *Provide stimuli and resources for children to create simple maps and plans, paintings, drawings and models of observations of known and imaginary landscapes.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and vegetable beds or organising equipment outdoors.*		*and how environments might vary from one another* *Make observations of animals and plants and explains why some things occur, and talks about changes*	

Looking at animals (KS1) *(EYFS)*	Biology	Identifying and classifying. Observing closely, using simple equipment. Observing closely, performing simple tests and using observations to suggest answers to questions, and gathering and recording data to help in answering questions. Gathering and recording data to help in answering questions. ***EYFS- suggested activities*** *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting bees, making a wormery, planning bird feeding on the ground and higher level.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up.* *Provide stories that help children to make sense of different environments.* *Provide first-hand experiences to support children in making sense of micro-environments, the specific conditions which enable each plant or animal to live and thrive.*	fish, amphibian, reptile, bird, mammal, nocturnal, senses, sonar, insects, carnivore, herbivore, omnivore	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Identify and name a variety of common animals that are carnivores, herbivores and omnivores. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Show care and concern for living things and the environment* *Look closely at similarities, differences, patterns and change in nature* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment and how environments might vary from one another*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

				Make observations of animals and plants and explains why some things occur, and talks about changes	

Using our senses (KS1) *(EYFS)*	Biology	Asking simple questions and recognising that they can be answered in different ways. Identifying and classifying. Using observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions. Performing simple tests. ***EYFS suggested activities*** *Plan opportunities, particularly after exercise, for children to talk about how their bodies feel.* *Provide outdoor resources which complement indoor provision, with an opportunity for children to play and explore on a larger scale.* *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting bees, making a wormery, planning bird feeding on the ground and higher level.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.*	ears, eyes, nose, mouth, senses, taste, hearing, touch, smell, sight	Identify, name, draw and label basic parts of the human body and say which part of the body is associated with each sense. ***EYFS*** *Talk about why things happen and how things work* *Can name and identify different parts of the body*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up. *Provide first-hand experiences to support children in making sense of micro-environments, the specific conditions which enable each plant or animal to live and thrive.* *Provide stimuli and resources for children to create simple maps and plans, paintings, drawings and models of observations of known and imaginary landscapes.*			

Our changing world- plants (Y1) *(EYFS)*	Biology	Observing closely, using simple equipment. Identifying and classifying. Using observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting bees, making a wormery, planning bird feeding on the ground and higher level.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs, or observing ice outdoors.* *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing,*	leaf, leaves, bud, twig, branch, tree, roots, stem, petals shoot, bud, flower, stalk, deciduous, evergreen	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Develop an understanding of growth, decay and changes over time* *Show care and concern for living things and the environment* *Begin to understand the effect their behaviour can have on the environment* *Look closely at similarities, differences, patterns and change in nature* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment*	All work is recorded in the 'Our changing world' booklets. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		making a model or photographing, through music, dancing or dressing up. *Provide stories that help children to make sense of different environments.* *Provide first-hand experiences to support children in making sense of micro-environments, the specific conditions which enable each plant or animal to live and thrive.* *Provide stimuli and resources for children to create simple maps and plans, paintings, drawings and models of observations of known and imaginary landscapes.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and vegetable beds or organising equipment outdoors.*		*and how environments might vary from one another* *Make observations of animals and plants and explains why some things occur, and talks about changes*	
Our changing world- animal antics (Y1)	Biology	Gathering and recording data to help in answering questions. Using observations and ideas to suggest answers to questions. Observing closely, using simple equipment. Asking simple questions and recognising that they can be answered in different ways. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g.*	egg, offspring, baby, adult, grow, change, habitat, food chain	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Develop an understanding of growth, decay and changes over time* *Show care and concern for living things and the environment*	All work is recorded in the 'Our changing world' booklets. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		magnifiers and photographs, phone apps to listen to and recognise birds. *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting bees, making a wormery, planning bird feeding on the ground and higher level.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up.* *Provide stories that help children to make sense of different environments.* *Provide first-hand experiences to support children in making sense of micro-environments, the specific conditions which enable each plant or animal to live and thrive.* *Provide stimuli and resources for children to create simple maps and plans, paintings, drawings and models of observations of known and imaginary landscapes.*		*Begin to understand the effect their behaviour can have on the environment* *Look closely at similarities, differences, patterns and change in nature* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment and how environments might vary from one another* *Make observations of animals and plants and explains why some things occur, and talks about changes*	
Our changing world (Y2)	Biology	Observing closely, performing simple tests and using observations to suggest answers to questions, and gathering and recording data to help in answering questions. Gathering and recording data to help in answering questions. Using observations and ideas to suggest answers to questions.	egg, offspring, baby, adult, grow, habitat, food chain, seeds, bulbs, plant, root, stem, leaf, fruit, shoot(s), bud, flower	Identify and name a variety of plants and animals in their habitats, including microhabitats. 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,	All work is recorded in the 'Our changing world' booklets. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve.

		Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment.		and how they depend on each other. 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. Notice that animals, including humans, have offspring which grow into adults. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Observe and describe how seeds and bulbs grow into mature plants.	Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking
Everyday materials (KS1) *(EYFS)*	Chemistry	Identifying and classifying. Observing closely, using simple equipment. Performing simple tests. Using observations and ideas to suggest answers to questions.	materials, properties, transparent, opaque, translucent, waterproof, absorbent, freeze, melt	Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. Distinguish between an object and the material from which it is made.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units.

		Gathering and recording data to help in answering questions. Asking simple questions and recognising that they can be answered in different ways. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs, or observing ice outdoors.* *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up.* *Provide stories that help children to make sense of different environments.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and*		Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment and how environments might vary from one another*	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		vegetable beds or organising equipment outdoors.			
Materials: Good choices (KS1) *(EYFS)*	Chemistry	Identifying and classifying. Using observations and ideas to suggest answers to questions. Performing simple tests and recording data. Observing closely, performing simple tests and using observations to suggest answers to questions, and gathering and recording data to help in answering questions. Gathering and recording data to help in answering questions. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs, or observing ice outdoors.*	material, property, rigid, shiny, dull, absorbent, lenses, transparent, opaque, translucent	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard, for particular uses. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment and how environments might vary from one another*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		Share stories related to pollution, climate change, habitat erosion, etc. *Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up.* *Provide stories that help children to make sense of different environments.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and vegetable beds or organising equipment outdoors.*			
Materials: shaping up (KS1) *(EYFS)*	Chemistry	Using observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions. Performing simple tests and recording data. Observing closely, using simple equipment. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.*	twist, squash, bend, stretch, flexible, rigid, elastic, properties, suitable, weight	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard, for particular uses. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Know about similarities and differences in relation to places, objects, materials and living things*	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs, or observing ice outdoors. *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up.* *Provide stories that help children to make sense of different environments.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and vegetable beds or organising equipment outdoors.*		*Talk about the features of their own immediate environment and how environments might vary from one another*	
Our changing world: sensing seasons (Y1) *(EYFS)*	Physics	Gathering and recording data to help in answering questions. Using observations and ideas to suggest answers to questions. ***EYFS- suggested activities*** *Use the local area for exploring both the built and the natural environment. Regularly take small groups of children on local walks, taking the time to observe what involves the children's interest.* *Provide opportunities to observe things closely through a variety of means, e.g. magnifiers and photographs, phone apps to listen to and recognise birds.* *Explore different habitats outdoors, e.g. scent, colour and shape of flowers attracting*	seasons, autumn, winter, spring, summer, temperature, frosty, sunny, cloudy, windy, rainy, sunny, snow, sleet, fog	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. ***EYFS*** *Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world* *Talk about why things happen and how things work* *Develop an understanding of growth, decay and changes over time*	All work is recorded in the 'Our changing world' booklets. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking. ***EYFS*** *Children are observed to assess their progress towards the early learning goals. This is recorded predominantly on Tapestry.*

		bees, making a wormery, planning bird feeding on the ground and higher level. *Provide play maps and small world equipment for children to create their own environments as well as represent the familiar environment.* *Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs, or observing ice outdoors.* *Share stories related to pollution, climate change, habitat erosion, etc.* *Give opportunities to record and creatively represent findings by, e.g. drawing, writing, making a model or photographing, through music, dancing or dressing up.* *Provide stories that help children to make sense of different environments.* *Provide first-hand experiences to support children in making sense of micro-environments, the specific conditions which enable each plant or animal to live and thrive.* *Provide stimuli and resources for children to create simple maps and plans, paintings, drawings and models of observations of known and imaginary landscapes.* *Give opportunities to design practical, attractive environments, for example, planting and taking care of flower and vegetable beds or organising equipment outdoors.*		*Show care and concern for living things and the environment* *Begin to understand the effect their behaviour can have on the environment* *Look closely at similarities, differences, patterns and change in nature* *Know about similarities and differences in relation to places, objects, materials and living things* *Talk about the features of their own immediate environment and how environments might vary from one another* *Make observations of animals and plants and explains why some things occur, and talks about changes*	

Where does all that food go? (LKS2)	Biology	Asking relevant questions and using different types of scientific enquiries to answer them. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Using straightforward scientific evidence to answer questions or to support their findings. Identifying differences, similarities or changes related to simple scientific ideas and processes. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Setting up simple practical enquiries, comparative and fair tests.	oesophagus, stomach, small intestine, large intestine, rectum, anus, digestive system, saliva, enzyme, canine, incisor, premolar, molar, jaw, food chain, food web, producer, consumer, predator, prey	Identify that animals, including humans, need the right type and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.

Human impact (LKS2)	Biology	Identifying differences, similarities or changes related to simple scientific ideas and processes. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using straightforward scientific evidence to answer questions or to support their findings. Recognising statements that do and do not support an argument.	environment, impact, positive, negative, litter, pollution, biodiversity, ecosystem, habitat, derelict, destroy, create, location, food chain, producer, consumer, human impact, predator, prey, conservation	Recognise that environments can change and that these changes can sometimes pose dangers to living things.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Who am I? (LKS2)	Biology	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Identifying differences, similarities or changes related to simple scientific ideas and processes.	classify, identify, sequence, key, vertebrate, fish, amphibian, reptile, bird, mammal, insects, arachnids, crustaceans, myriapods, molluscs, worms	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that living things can be grouped in a variety of ways.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.

Amazing bodies (LKS2)	Biology	Asking relevant questions and using different types of scientific enquiries to answer them. Identifying differences, similarities or changes related to simple scientific ideas and processes. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Using straightforward scientific evidence to answer questions or to support their findings. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	nutrition, skeleton, muscles, joints, tendons, ribs, heart, skull, brain, spine, vertebrate, invertebrate	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. Identify that humans and some animals have skeletons and muscles for support, protection and movement.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.

How does your garden grow? (LKS2)	Biology	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Setting up simple practical enquiries, comparative and fair tests. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	germination, pollination, petal, sepal, carpel, stamen, pollen, reproduce, nectar, dispersal, stigma, style, ovary, anther, filament	Identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers. Investigate the way in which water is transported within plants. Explore the part flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Our changing world (Y3)	Biology	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Setting up simple practical enquiries, comparative and fair tests. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	leaves, bud, twig, branch, tree, roots, stem, shoot, bud, flower, leaf, deciduous, evergreen	Identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers. 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. Explore the part flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	All work is recorded in the 'Our changing world' booklets. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Our changing world (Y4)	Biology	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	egg, offspring, baby, adult, grow, habitat, food chain, plant	Explore and use classification keys to help group, identify and name a variety of living things	All work is recorded in the 'Our changing world' booklets.

		Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.		in their local and wider environment.	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
In a state (LKS2)	Chemistry	Identifying differences, similarities or changes related to simple scientific ideas and processes. Setting up simple practical enquiries, comparative and fair tests.	solid, liquid, viscous, temperature, degree Celsius, solidify, states of matter, change of state, melting point, freezing point, evaporate,	Compare and group materials together according to whether they are solids, liquids or gases. Observe that some materials change state when they are	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units.

		Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using straightforward scientific evidence to answer questions or to support their findings. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	thermometer, condensation, scale, calibrate	heated or cooled and measure or research the temperature at which this happens in degrees Celsius °C. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Rock detectives (LKS2)	Chemistry	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	sandstone, granite, chalk, limestone, marble, pumice, fossil, fossilise	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units.

		Using straightforward scientific evidence to answer questions or to support their findings. Setting up simple practical enquiries, comparative and fair tests. Identifying differences, similarities or changes related to simple scientific ideas and processes. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.		Recognise that soils are made from rocks and organic material. Describe in simple terms how fossils are formed when things that have lived are trapped within rock.	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Can you see me? (LKS2)	Physics	Setting up simple practical enquiries, comparative and fair tests. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	light, dark, shadow, mirror, reflect, opaque, transparent, translucent, ultraviolet, ray, beam, absorb, luminous, infrared	Recognise that we need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units.

		Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Using straightforward scientific evidence to answer questions or to support their findings. Identifying differences, similarities or changes related to simple scientific ideas and processes. Setting up simple practical enquiries, comparative and fair tests; making accurate measurements using standard units, using a range of equipment, for example thermometers and data loggers. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.		Recognise that shadows are formed when the light from a light source is blocked by a solid (opaque) object. Find patterns in the way that the size of shadows change. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
The power of forces (LKS2)	Physics	Identifying differences, similarities or changes related to simple scientific ideas and processes. Setting up simple practical enquiries, comparative and fair tests.	force, magnet, attracts, magnetism, strength, north pole, south pole, repel	Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Compare how things move on different surfaces.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units.

		Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Using straightforward scientific evidence to answer questions or to support their findings.		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. Observe how magnets attract or repel each other and attract some materials and not others. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Good vibrations (LKS2)	Physics	Identifying differences, similarities or changes related to simple scientific ideas and processes. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	sound, vibration, vibrate, volume, sound source, fainter, pitch	Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units.

		Using straightforward scientific evidence to answer questions or to support their findings. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Setting up simple practical enquiries, comparative and fair tests. Asking relevant questions and using different types of scientific enquiries to answer them. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.		Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Switched on (LKS2)	Physics	Identifying differences, similarities or changes related to simple scientific ideas and processes. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	electricity, mains, battery, rechargeable, solar, wind, cell, wire, bulb, bulb holder, buzzer, motor, component, circuit, terminal, positive, negative, switch,	Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts,	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units.

		Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Setting up simple practical enquiries and recording, classifying and presenting data in a variety of ways to help answer questions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Using straightforward scientific evidence to answer questions or to support their findings.	electrical conductor, electrical insulator	including cells, wire, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether a lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators and associate metals with being good conductors.	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Everything changes (UKS2)	Biology	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs.	variation, inheritance, adaptation, selective breeding, generation, survival, natural selection, evolution,	Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identical to their parents.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit.

		Identifying scientific evidence that has been used to support or refute ideas or arguments. Planning different types of enquiries to answer questions including recognising and controlling variables where necessary. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.	genes, genetics, DNA, extinct, speciation	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.	A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Body pump (UKS2)	Biology	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments.	artery, atrium, blood vessel, capillaries, chamber, circulation, circulatory system, deoxygenated, digestive system, oxygenated, plasma, platelets, red blood cell, valve, vein, ventricle, white blood cell	Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood. Describe the ways in which nutrients and water are transported within animals, including humans.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Body health (UKS2)	Biology	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments. Taking measurements, using a range of scientific equipment, with increasing accuracy	alcohol, balanced diet, beats per minute, caffeine, calories, cigarettes, doping, drugs, eatwell plate, illegal, legal, lifestyle, medicine, nutrition, RDA, solvents, steroids, tobacco	Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons.

		and precision, taking repeat readings where appropriate.			Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Nature library (UKS2)	Biology	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments. Planning different types of enquiries to answer questions including recognising and controlling variables where necessary.	genus, species, common characteristics, distinguishing characteristics, Animalia, Plantae, Fungi, Protista, Monera, vertebrates, invertebrates, Micro-organisms, microbes, bacteria	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. Give reasons for classifying plants and animals based on specific characteristics.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Circle of life (UKS2)	Biology	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments.	life cycle, birth, growth, reproduction, metamorphosis, aging, death, egg, pupa, cocoon, adult, breeding cycle, reproduce, genetic, endangered, threatened, extinct, evolution	Explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve.

					Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Reproduction in plants and animals (UKS2)	Biology	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs.	reproduction, reproduce, flower, organ, carpel, stamen, pollen, pollinator, pollination, fertilisation, reproduction, propagate, root cuttings, runners, tubers, bulbs, rhizomes, sexual, asexual, metamorphosis	Describe the life process of reproduction in some plants and animals. Describe the changes as humans develop to old age.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Our changing world (Y5)	Biology	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs. Identifying scientific evidence that has been used to support or refute ideas or arguments. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	flower, carpel, stamen, pollen, seed, seed head, pollinator, pollination, fertilisation, seed dispersal, propagate, runner, tuber, rhizome, bulb	Describe the life process of reproduction in some plants and animals.	All work is recorded in the 'Our changing world' booklets. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Our changing world (Y6)	Biology	Recording data and results of increasing complexity using scientific diagrams and	mammal, amphibian, insect, bird, metamorphosis, migrate,	Identify how animals and plants are adapted to suit their environment in different ways	All work is recorded in the 'Our changing world' booklets.

		labels, classification keys, tables, scatter graphs, and bar and line graphs. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.	hibernate, habitat, adaptation, life cycle, invertebrate, adaptation, predator, prey, survival	and that adaptation may lead to evolution. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identical to their parents. 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	Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Get sorted (UKS2)	Chemistry	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Identifying scientific evidence that has been used to support or refute ideas or arguments.	properties, solid, liquid, gas, criteria, soluble, insoluble, elasticity, ductile, conductor, insulator, thermal, magnetic, attract, repel, viscosity, recycle, biodegradable	Compare and group together everyday materials based on evidence from comparative and fair tests, including hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Everyday materials (UKS2)	Chemistry	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree	properties, structure, organic, natural, manufactured, man-made, weathering, decay,	Give reasons, based on evidence from comparative and fair tests, for specific uses of	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit.

		of trust in results, in oral and written forms such as displays and other presentations. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Taking measurements, using a wide range of scientific equipment, with increasing accuracy and precision, and taking repeat readings when appropriate. Identifying scientific evidence that has been used to support or refute ideas or arguments. Using test results to make predictions to set up further comparative and fair tests.	decompose, durability, thermal conductor, thermal insulator	everyday materials, including metals, wood and plastic.	A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Marvellous mixtures (UKS2)	Chemistry	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.	mixture, filter, evaporate, solid, liquid, gas, powder, particle, dissolve, soluble, solution, contaminate, impurity, purity, suspension, saturation, reversible, non-reversible, residue, purify, sterilise	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
All change (UKS2)	Chemistry	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.	solid, liquid, gas, change of state, dissolve, melt, reversible, non-reversible, mixture, powder, particle,	Demonstrate that dissolving, mixing and changes of state are reversible changes.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit.

		Using test results to make predictions to set up further comparative and fair tests. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	reaction, oxidise, corrode, tarnish, vapour, flammable	Explain that some changes result in the formation of new materials and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Feel the force (UKS2)	Physics	Taking measurements, using a wide range of scientific equipment, with increasing accuracy and precision, and taking repeat readings when appropriate. Identifying scientific evidence that has been used to support or refute ideas or arguments. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs.	air resistance, balanced, clockwork, cogs, compress, extend, forces, friction, fulcrum, gravity, gears, lever, mechanisms, Newton meter, pinion, pivot, pulley, resistance, upthrust	Identify the effects of air resistance, water resistance and friction, which act between moving surfaces. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.

The Earth and beyond (UKS2)	Physics	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Taking measurements, using a wide range of scientific equipment, with increasing accuracy and precision, and taking repeat readings when appropriate. Identifying scientific evidence that has been used to support or refute ideas or arguments. Using test results to make predictions to set up further comparative and fair tests.	British Summer Time, Earth, Greenwich Meridian, International Date Line, Jupiter, Mars, Mercury, Milky Way, Moon, Saturn, Sun, Neptune, Universe, Uranus, Venus, asteroid, axis, compass, crescent, dawn, dusk, equinox, galaxy, gibbous, horizon, lunar month, meridian, orbit, planet, rotation, solar system, solstice, tilt, waning, waxing	Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System. Use the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. Describe the movement of the Moon relative to the Earth.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Light up your world (UKS2)	Physics	Identifying scientific evidence that has been used to support or refute ideas or arguments. Using test results to make predictions to set up further comparative and fair tests. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. Planning different types of enquiries to answer questions including recognising and controlling variables where necessary.	shadow, reflect, opaque, transparent, translucent, ultra violet, ray, beam, refraction, periscope, spectrum, dispersion, inverted	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. 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. Recognise that light appears to travel in straight lines.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve.

		Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.		Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.
Danger! Low voltage (UKS2)	Physics	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments.	cell, battery, lamp, wire, buzzer, motor, circuit, current, electrical insulator, electrical conductor, mains terminal, switch, series circuit, resistance, current, generate, generator, fossil fuels, turbine, transmission, transformer	Use recognised symbols when representing a simple circuit in a diagram. Compare the functions of different components, giving reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off positions of switches. Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit, 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, and use recognised symbols when representing a simple circuit in a diagram.	At the start of the unit a topic page is created to recap and make links to prior learning. This is then reviewed at the end of the unit. A sticky quiz is used to review what children have learned and remembered from this and prior units. Questioning is used at the start and end of each lesson to check understanding and consolidate learning. Questioning is also used throughout lessons. Staff provide feedback during the lesson so that pupils know what they are doing well and what they need to improve. Practical work is observed during the lesson and pupils are encouraged to use relevant scientific vocabulary to describe and explain their thinking.

Kingfisher Science Curriculum

What do the children need to be able to do?			
Working Scientifically	Key stage 1	Lower Key stage 2	Upper Key Stage 2
Approaches to enquiry	**Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including:** • observing changes over a period of time • noticing patterns • grouping and classifying things • carrying out simple comparative tests • finding things out using secondary sources of information	**Children should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them including:** • observing changes over time • noticing patterns • grouping and classifying things • carrying out simple fair tests • finding things out using secondary sources of information	**Children should select the most appropriate ways to answer science questions using different types of scientific enquiry, including:** • observing changes over different periods of time • noticing patterns • grouping and classifying things • carrying out fair tests • finding things out using a wide range of secondary sources of information
Asking questions	**Ask simple questions** • Begin to shape questions using different question stems • Ask questions about how and why objects, materials and living things: o change o are similar or different to each other o connect with each other o are made or work • Suggest questions to investigate	**Ask relevant questions** • Recognise questions that can be investigated scientifically and those that cannot • Ask a clear scientific question • Recognise when questions can be answered by first hand or second sources of evidence	**Use results to raise further questions** • Independently ask questions and offer ideas for scientific enquiry **Use test results to make predictions to set up further comparative and fair tests**
Planning	**Recognise that questions can be answered in different ways** • With support: o suggest how to find things out o Identify changes to observe and measure o Identify patterns to observe and measure o Identify variables to change and measure o Identify sorting criteria o Suggest how to take measurements o Suggest next steps or a sequence of steps in a plan	**Use different types of scientific enquiries to answer them** • dentify different ways to answer a question • Choose the most appropriate method **Set up simple practical enquiries, comparative and fair tests** • Decide what observations to make, how often and what equipment to use • Decide what measurements to take, how long to make them for and whether to repeat them • Decide what sorting or classification criteria to use • Recognise when a simple fair test is necessary • With help, decide what variables to change and measure	**Plan different types of scientific enquiries to answer questions** • Explain why an enquiry method is the most appropriate to answer a question • Plan systematic collection of data and which equipment to use • Plan collection of sufficient data • Recognise when research using secondary sources will answer questions • Decide which sources of information to use to answer questions **Recognise and control variables where necessary** • Recognise when variables need to be controlled and why • Recognise when variables cannot be controlled and a pattern seeking enquiry is appropriate • Identify which variables have the greatest effect on the result

Collecting data	**Observe closely, using simple equipment** • Choose and use appropriate simple equipment to make observations • Use non-standard units to collect observations **performing simple tests** • Choose and use appropriate simple equipment with increasing accuracy to collect comparative data • Use non-standard units to collect data **identifying and classifying** • Sort objects by observable and behavioural features • Make comparisons between simple features **gathering data to help in answering questions** • Gather data to answer questions from a variety of sources including talking to people, simple books and electronic media, first hand observation and practical activity	**Make systematic and careful observations where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers** • Use a range of equipment including data loggers to collect data using standard measures • With support take accurate measurements on measuring equipment, recognising when to repeat them • Carry out simple tests to sort and classify materials according to properties or behaviour **Gather data in a variety of ways to help in answering questions** • Gather data to answer questions from a variety of sources including using textbooks, simple keys, electronic media, first hand observation, practical activity and data collected by others	**Take measurements, using a range of scientific equipment with increasing accuracy and precision** • Use a range of equipment accurately without support to collect observations and measurements • Repeat sets of observations or measurements, where appropriate, selecting suitable ranges and intervals • Use a series of tests to sort and classify materials • Use relevant information and data from a range of secondary sources to answer questions
Presenting data	**Record data to help in answering questions** • Talk about what has been found out and how • Record observations in word and pictures • Record observations and test results in simple prepared pictograms, tables, tally charts, bar charts and maps including ICT formats • Record sorting in sorting circles or tables	**Record data in a variety of ways to help in answering questions** • Make notes • Record data in tables and bar charts • Use graphs produced by data loggers **Classify in a variety of ways to help in answering questions** • Use Carroll diagrams, and Venn diagrams to classify • Use and make simple keys to identify and classify **Present data in a variety of ways to help in answering questions** • Drawings, labelled diagrams • Bar charts, bar line graphs, simple scatter graphs and tables using ICT where appropriate	**Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs and models** • Decide how to record data accurately and appropriately • Use appropriate scientific language in oral and written presentations • Make keys and branching databases with 4 or more items • Use more than one source of scientific evidence to identify and classify things • Present data in line graphs, scatter graphs and frequency charts

Concluding	**Use their observations and ideas to suggest answers to questions** • Use simple scientific language to talk about observation or findings • Use results to answer the investigation question • Identify simple changes • Sequence changes • Say whether the change was expected • Identify similarities and differences • Make simple comparisons • Make links between two sets of observations • Identify simple patterns and talk about them • Say whether the pattern was expected • Identify simple causal relationships • Say if the relationship was expected	**Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions** • Draw simple conclusions about changes observed and link these to scientific ideas • Refer to a table or graph when reporting findings • Begin to use and interpret graphs produced by data loggers • Draw a simple conclusion about similarities and differences identified and link these to scientific ideas • Draw conclusions about simple patterns between two sets of data • Draw simple causal conclusions from fair tests • Draw conclusions from data from different secondary sources **Identify differences, similarities or changes related to simple scientific ideas and processes** • Make links between: o observed changes o similarities and differences o simple patterns between two sets of data o simple causal relationships o data from secondary sources • and simple scientific ideas and processes **Use straightforward scientific evidence to answer questions or to support their findings** Refer to evidence from practical tests and observations or from secondary data sources when answering questions or explaining findings • Use simple scientific language in a range of oral and written presentations suitable for different audiences to present findings	**Report and present findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations** • Use scientific evidence to answer questions or support findings • Draw valid conclusions about changes, similarities and differences, and causal relationships from data collected • Draw valid conclusions that utilise more than one piece of supporting evidence • Use scientific knowledge to explain findings • Use simple models to help describe scientific ideas • Explain differences in repeated observations or measurements, identifying reasons for any anomalies noticed **Communicate findings in written form, displays, multi-media and other forms of presentation using scientific language**
Evaluating	Say whether data was useful Say whether an information source was useful Give an opinion about some further information	**Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions** • Make predictions for new values within or beyond the collected data collected • Identify new questions arising from the data • Find ways of improving enquiries	**Identify scientific evidence that has been used to support or refute ideas or arguments** • Begin to separate opinion from fact • Use scientific evidence to justify ideas • Talk about how scientific ideas have developed over time Identify when further tests and observations might be needed Evaluate the effectiveness of their working methods, making practical suggestions for improving them
Scientific language	group, compare, similar, different, measure, observe, observations, describe, identify, question, predict, prediction, answer, investigate, fair, same, plan, change, evidence, bar chart, scale, pattern, question, connection, measure, agree,	present, explanation, explain, classify, survey, variable, collect, interpret, data, axis, scale, interval, control, accuracy, evaluate, reliable, repeatable, categories, tally	contrast, organise, criteria, line graph, model, presentation, record, review, scientific diagram, justify, analyse, review, risk

	disagree, first, next, later, order, conclusion, because, record, table, column, Venn diagram, set, sort, label, Carroll diagram, differences, dependent, independent, annotate, order, table, scatter graph, plot, pattern	chart, pictogram, axes, opinion, point of view, argument, viewpoint, debate	