A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics.
Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods,
processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the
power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how
science can be used to explain what is occurring, predict how things will behave, and analyse causes.

	By the end of Reception	By the end of Year 2	By the end of Year 4	By the end of Year 6
To work Scientifically	Look closely at similarities, differences, patterns and change	Ask simple questions Know how to use simple equipment Know how to observe closely Understand how to perform simple tests Know how to identify and classify Use observations and ideas to suggest answers to questions Know how to gather and record data to help answer questions	Ask relevant questions To know how to set up simple practical enquiries and comparative and fair tests To know how to make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers. To know how to gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Know how to use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests. Knows how to identify differences, similarities or changes related to simple, scientific ideas and processes. Understands how to use straightforward, scientific evidence to answer questions or to support their findings	Plan enquiries, including recognising and controlling variables where necessary. Knows how to use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. Knows how to take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations. Use test results to make predictions to set up further comparative and fair tests. Know how to use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.

By the end of	By the end of	By the end of	By the end	By the end	By the end	By the end of
Reception	Year 1	Year 2	of Year 3	of Year 4	of Year 5	Year 6

Children should	To understand	To understand	To understand plants
know about	plants	plants	
similarities and	· · · · ·	· · · · · ·	Identify, know and
differences in	Identify and name	To observe and	describe the
relation to places,	a variety of	know how seeds	functions of different
objects, materials	common wild and	and bulbs grow	parts of flowering
and living things.	garden plants,	into mature	plants: roots,
They talk about the	including	plants	stem/truck, leaves
features of their	deciduous and	To find out and	and flowers
own immediate	evergreen trees.	describe how	Explore and know the
environment and	Identify and	plants need	requirements of
how environments	describe the basic	water, light and	plants for life and
might vary from	structure of a	suitable	growth (air, light,
one another. They	variety of	temperature to	water, nutrients from
make observations	common	grow and stay	soil, and room to
of animals and	flowering plants	healthy	grow) and how they
plants and explain	(seeds, roots etc),		vary from plant to
why some things	including trees.		plant
occur, and talk			Investigate and
about changes.			understand the way
			in which water is
			transported within
			plants
			Explore the part that
			flowers play in the
			life cycle of flowering
			plants, including
			pollination, seed
			formation and seed
			dispersal.

<u>To understand</u> animals and humans	<u>To understand</u> animals and humans	<u>To understand</u> <u>animals, including</u> humans	To understand animals and humans	<u>Animals, including</u> <u>humans</u>	<u>Animals, including</u> <u>humans</u>
identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	To know that animals, including humans, have offspring which grow into adults To know and describe the basic needs of animals, including humans, for survival (water, food and air) Know and describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	To identify and know 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 and know that humans and some animals have skeletons and muscles for support, protection and movement	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.	To describe the changes as humans develop to old age	identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans.

Image: splore and compare the differencesthings identify and name a variety of living things (plants and animals) in the local and wider Give that hare living, dead, and things that have neverthings and animals classifying plants and animals based on specific characteristics.their habitats describe the differences in the common observable characteristics.their habitats describe the differences in the in brightings the that have neverthings and animals based on specific characteristics.their habitats describe the differences in the and abirdtheir habitats describe the differences, in the based on similarities and abirdtheir habitats describe the and abirdtheir habitats describe the differences, in the based on similarities and ad ifferences, including microorganisms, plantsImage: splore and dead, and things that have neverclassifying plants and animals based on similarities and animalssplore and abirdbased on similarities and adifferences, including microorganisms, plantsImage: splore and different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plantstheir habitats the habitats.their habitats the habitats.their habitats the classified into broad groups and animals based on specific habitats.their habitats the habitats.their habitats the habitats.their habitats the habitats.Image: splore and the plant in habitats and how they depend on each other identify and name a variety of plants	To investigate	To invoctigate living	All living things and	Living things and
Identify and name a explore and compare the differencesIdentify and name a variety of livingTo know and things are classified into broad groups according to according to common observable characteristics and and animals based oe specific identify that mostTo know and things are classified into broad groups according to common observable characteristics.describe the differences in the life cycles of a mammal, an amphibian, an insect and a birddescribe the differences, in not observable characteristics.describe the differences, in that based on specific including microorganisms, plants and animalsdescribe the differences, including microorganisms, plants and animalsdescribe the differences, including microorganisms, plants and animalsdescribe the withety and name a according to common observable characteristics.describe the differences, including microorganisms, plants and animalsI dentify that most living things live which they are suited and different habitats dangers to specific habitats.differences, and animalsdifferences, and animalsI dentify that most living things live different kinds of animals and plants, and how they depend on each other identify and name a variety of plantsdifferences and animalsdifferences, and animalsdifferences, and animalsI dentify that nome identify that mostcharacteristics.Evolution and inheritanceGive reasons for classifying plants and animalsdistats.I dentify that most different thabitats and animals and plants, and h	To investigate	To investigate living	All living things and	Living things and
explore and compare the differencesvariety of living things (plants and animals) in the local and wider GiveTo know and describe the differences in the line broad groups according to common observable characteristics and and animals based on specificTo know and describe the differences in the life cycles of a common observable characteristics and and animals based and animals based on specificTo know and describe the according to common observable characteristics and based on specific including microorganisms, plantsin habitats to which they are suited and describe how different habitats different habitats.constantly changing and that this can and that this can on specific constantly changing and that this can dangers to specific habitats.To know and describe how according to and a birdthings are classified into broad groups according to common observable characteristics and based on similarities and a birdin habitats to which they are suited and different habitats different habitatsreasons for classifying plants and animals based on specific characteristics.different kinds of animals and plants, and how they depend on each other identify and name a vriety of plantssite of animals and animals and plants and animals and animals and plants, and how they depend on each other identify and name a vriety of plantsTo know and things have changed over time and that shates.things recognise that enviouments are constantly changing and animals based on specific characteristics.filterent kinds of animals and plant	living things		their nabitats	
compare the differencesthings (plants and animals) in the local and wider Givedescribe the differences in the life cycles of a mammal, an amphibian, an insect and a birdinto broad groups according to common observable characteristics and based on specificdead, and things that have neverclassifying plants and animals based on specificand a birdbased on similarities and a birdin habitats to which they are suited and different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify of plantscompare the animals in the local animals based on specific compare that and a birdinto broad groups according to common observable characteristics and based on similarities and a birddifferences, including microorganisms, plants and animalsconstantly changing and that this can sometimes pose habitats.describe the differences in the including microorganisms, plants and animalsdifferent habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plantscompare the and thatdutifier and bar they depend on each other identify an name a variety of plantscompare the animals and plants, and how they depend on each other identify an name a variety of plantscompare the and that the other and that the other and that the other and that the otherexplore the compared to the compared to the they depend on each other identify on plantscom				-
Image: second				-
between things that are living, dead, and thingsand wider Give reasons for classifying plants and animals based on specific characteristics.life cycles of a mammal, an amphibian, an insect and animals based on specific characteristics.common observable characteristics and anyhibian, an insect and a birdcommon observable characteristics and and differences, including microorganisms, plants and animals based on specificlife cycles of a mammal, an amphibian, an insect and differences, including microorganisms, plants and animals and animalscommon observable characteristics and alirdcommon observable characteristics and and differences, including microorganisms, plants and animals and animals and animals and plants, and how they depend on each other identify and name a variety of plantslife cycles of a anid wider Give animals and animals and animals and animals and plants, and how they depend on each other identify and name a variety of plantslife cycles of a and animals and animals and animals and animals and animals and animals and animals <td>-</td> <td></td> <td></td> <td></td>	-			
that are living, dead, and things that have never been alive 		-		-
dead, and things that have never been alive identify that most living things liveclassifying plants and animals based on specific characteristics.amphibian, an insect and a birdbased on similarities and differences, including microorganisms, plants and animalsI in habitats to which they are suited and different habitatsRecognise that environments are constantly changing and that this can dangers to specific habitats.Give reasons for classifying plants and animalsI in habitats to which they are suited and different habitats different habitatsdangers to specific habitats.Give reasons for classifying plants and animals based on specific characteristics.I if they depend on each other identify and name a variety of plantsand how they depend on each otherFeolution and inheritanceI identify and name a variety of plantsand iname a variety of plantsI in habitatsI in habitats.				
that have never been alive identify that most living things live in habitats to which they are suited and describe how different habitats different habitats different kinds of animals and plants, and how they depend on each other identify and name a variety of plantsand alimatical and a birdand differences, including microorganisms, plants and animals and animals based on specific characteristics. Recognise that environments are constantly changing and that this can sometimes pose different kinds of animals and plants, and how they depend on each otherand differences, including microorganisms, plants and animalsEvolution and inheritanceand that environments are constantly changing and that this can sometimes pose different kinds of animals and plants, and how they depend on each other i dentify and name a variety of plantsand alimals and alimals based over time and that plants	-		-	
been aliveon specificincludingidentify that mostcharacteristics.microorganisms,living things liveRecognise thatplantsin habitats toenvironments areand animalswhich they areconstantly changingsuited andsuited andand that this canGive reasons fordescribe howsometimes poseclassifying plantsdifferent habitatsdangers to specificand animals basedprovide for thehabitats.on specificbasic needs ofdifferent kinds ofanimals andplants, and howthey depend onexolution and inheritancethey depend oneavriety of plantsrecognise that living tings have changeda variety of plantsa variety of plantsover time and that	dead, and things		-	
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 identify and name a variety of plantsmicroorganisms, plants and animalsidentify that most living things live in habitats to which they are suited and describe how describe how different habitats different habitats different kinds of animals and plants, and how they depend on each other identify and name a variety of plantscharacteristics.microorganisms, plants and animals different habitats.Evolution and inheritanceFevolution and inheritanceEvolution and inheritancefree that living things have changed over time and that	that have never		and a bird	
Iving things live in habitats to which they are suited and describe how different habitats basic needs of animals and plants, and how they depend on each other identify and name a variety of plantsRecognise that environments are constantly changing and that this can sometimes pose dangers to specific habitats.plants and animalsImage: Suited and describe how different habitats bride for the basic needs of animals and plants, and how they depend on each otherRecognise that environments are constantly changing and that this can sometimes pose habitats.Give reasons for classifying plants and animals based on specific characteristics.Image: Suited and different kinds of animals and plants, and how they depend on each other identify and name a variety of plantsRecognise that environments are constantly changing animals and plants, and how they depend on each other identify and name a variety of plantsRecognise that environments are environments are environments are constantly changing a variety of plantsRecognise that environments are environments are constantly changing and that this can sometimes pose dangers to specific habitats.Image: plants environments are constantly changing and animals and plants, and how they depend on each otherRecognise that living things have changed over time and that	been alive	on specific		including
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 identify and name a variety of plants	identify that most			•
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 identify and name a variety of plants variety of plants	living things live	Recognise that		plants
suited and describe how describe how different habitats dangers to specific habitats. dangers to specific habitats. dangers to specific habitats. dangers to specific habitats. different kinds of animals and plants, and how they depend on each other identify and name a variety of plants a variety of plants dangers to specific habitats. different kinds of animals and plants, and how they depend on each other identify and name a variety of plants dangers to specific habitats. dangers to specific habitats dangers to specific habitats. dangers to specific habitats danger	in habitats to	environments are		and animals
describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plantssometimes pose dangers to specific habitats.classifying plants and animals based on specific characteristics.Evolution and inheritanceEvolution and inheritanceEvolution and inheritancerecognise that living things have changed over time and thatrecognise that living things have changed over time and that	which they are	constantly changing		
different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plants	suited and	and that this can		Give reasons for
Image: state in the state	describe how	sometimes pose		classifying plants
basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plants	different habitats	dangers to specific		and animals based
different kinds of animals and Evolution and plants, and how plants, and how inheritance they depend on each other recognise that living identify and name things have changed over time and that	provide for the	habitats.		on specific
animals and plants, and how they depend on each other identify and name a variety of plants Evolution and inheritance recognise that living things have changed over time and that	basic needs of			characteristics.
plants, and how inheritance they depend on each other identify and name things have changed a variety of plants over time and that	different kinds of			
plants, and how inheritance they depend on each other identify and name recognise that living a variety of plants over time and that	animals and			Evolution and
they depend on recognise that living each other recognise that living identify and name things have changed a variety of plants over time and that	plants, and how			
identify and name a variety of plants over time and that	they depend on			
identify and name a variety of plants over time and that	each other			rocognico that living
a variety of plants	identify and name			
	-			
and animals in fossils provide	and animals in			
their habitats,	their habitats,			
including for the second se				
including living things that inhabited the Earth	_			
Describe how	Describe how			
animals obtain millions of years ago				minions or years ago
their food from				
nlants and other recognise that living				• •
things produce				things produce

	animals, using the		offspring of the same kind, but

idea of a simple food chain, and identify and name different sources of food.		normally offspring vary and are not identical to their parents
		Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

To investigate everyday materials To know how to distinguish between an object and the material from which it is made	To investigate everyday materials Find out how the shapes of solid objects made from some materials can be changed by	Rocks Compare and group together different kinds of rocks on the basis of their appearance and simple physical	To investigate materials (States of Matter) Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some	Properties and changes of materials Compare and group together everyday materials on the basis of their properties, including their hardness,
identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock To be able to describe the simple physical	squashing, bending, twisting and stretching. Identify and compare and know the uses of a variety of everyday materials, including wood, metal, plastic,	properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soil are made from rocks and organic matter	materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. Identify the part	solubility, transparency, conductivity (electrical and thermal), and response to magnets Know that some materials will dissolve in liquid to

properties of a variety of everyday materials Compare and group together a	glass, brick/rock, and paper/cardboard	played by evaporation and condensation in the water cycle and associate the rate of evaporation with	Form a solution, and describe how to recover a substance from a solution Use knowledge of	
variety of everyday materials based on their simple physical properties.		temperature.	solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	
			Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	
			Demonstrate that dissolving, mixing and changes of state are reversible changes	
			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.	

To understand seasonal changes Observe and talk about changes across the four seasons Observe and describe weather associated with the seasons and how day length varies, including understanding that it is unsafe to look directly at the Sun.	<u>To investigate light</u> Recognise that they	To investigate sound and hearing Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between pitch of a sound and features of the object that produced it. 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's source increases.	Earth and space Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night, and the apparent movement of the sun across the sky.	Light recognise that light
	need light in order to see things and that			appears to travel in straight lines

dark is absence of	
light	use the idea that
Notice that light is	light travels in
reflected from	straight lines to
surfaces	explain that objects
Recognise that light	are seen because
from the sun can be	they give out or
dangerous and that	reflect light into the
there are ways to	eye
protect the eyes.	
Recognise that	explain that we see
shadows are formed	things because light
when light from a	travels from light
light source is	sources to our eyes
blocked by a solid	or from light sources
object	to objects and then
Find patterns in the	to our eyes
way that the size of	
shadows change	use the idea that
	light travels in
	straight lines to
	explain why
	shadows have the
	same shape as the
	objects that cast
	them
	Electricity
	Electricity
<u>To understand</u>	associate the
electrical circuits	
Identify common	
appliances that ru	
on electricity	number and voltage

		Construct a simple series electrical circuit, identifying	

	Forces and magnets	and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit based on whether or not the lamp is part of a complete loop with a battery. 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.	Forces and Magnets explain that	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 use recognised symbols when representing a simple circuit in a diagram.
	compare how things move on different surfaces		explain that unsupported objects fall towards the Earth because of the force of gravity	

		notice that some forces need contact between 2 objects,	acting between the Earth and the falling object	

but magnetic forces		
can act at a distance	identify the effects	
	of air resistance,	
observe how	water resistance and	
magnets attract or	friction, that act	
repel each other and	between moving	
attract some	surfaces	
materials and not		
others	recognise that some	
	mechanisms	
compare and group	including levers,	
together a variety of	pulleys and gears	
everyday materials	allow a smaller force	
on the basis of	to have a greater	
whether they are	effect	
attracted to a		
magnet, and identify		
some magnetic		
materials		
indeendo		
describe magnets as		
having 2 pole		
Due disturb eth en 2		
Predict whether 2		
magnets will attract		
or repel each other,		
depending on which		
poles are facing.		