

Science



*Kapow
Primary™*

National curriculum
coverage – mixed-age

Introduction

Kapow Primary offers full coverage of the KS1 and KS2 National curriculum for Science (2013).

This document contains each end of year attainment target from the National curriculum and information about the units that will help pupils on their learning journey to meeting that statement by the end of the year.

This document also shows how teaching our EYFS (Reception) Science units can support EYFS teachers in covering the statements in Development Matters and working towards the Early Learning Goals.

This document is regularly updated to reflect changes to content on our website. It was last updated on 02.09.24 and the latest version can always be found [here](#).

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Development matters across Kapow Primary's units - EYFS: Reception

Development matters statements: Understanding the world Children in reception will be learning to:	Animal adventures	I am a scientist - coming soon!	Our beautiful planet- coming soon!	Changing seasons- coming soon!
Talk about members of their immediate family and community.	Not covered in our Science EYFS lessons. Please see our EYFS content for R&W (Coming soon!), Geography and History .			
Name and describe people who are familiar to them.				
Comment on images of familiar situations in the past.				
Compare and contrast characters from stories, including figures from the past.				
Draw information from a simple map.				
Understand that some places are special to members of their community.				
Recognise that people have different beliefs and celebrate special times in different ways.				
Recognise some similarities and differences between life in this country and life in other countries.				
Explore the natural world around them.	✓			✓
Describe what they see, hear and feel whilst outside.	✓			✓
Recognise some environments that are different from the one in which they live.	✓			
Understand the effect of changing seasons on the natural world around them.				✓

Early learning goals across Kapow Primary's units - EYFS: Reception

<p>Early learning goals Understanding the World: The Natural World Children at the expected level of development will:</p>	<p><u>Animal adventures</u></p>	<p>I am a scientist - coming soon!</p>	<p>Our beautiful planet- coming soon!</p>	<p>Changing seasons- coming soon!</p>
<p>Explore the natural world around them, making observations and drawing pictures of animals and plants;</p>	<p>✓</p>			<p>✓</p>
<p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</p>	<p>✓</p>			
<p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>				<p>✓</p>

National curriculum by Kapow Primary's themes and units

Year 1/2 - National curriculum Science content Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:	Kapow Primary's Science strands	Kapow Primary topics Key stage 1 - Year 1/2 Cycle A					
		<u>Introduction to plants</u>	Seasonal changes	Habitats	Life cycles and health	Plant growth	Making connections - coming soon!
asking simple questions and recognising that they can be answered in different ways.	Working scientifically	✓	✓	✓	✓	✓	
observing closely, using simple equipment.		✓	✓		✓	✓	
performing simple tests.		✓				✓	
identifying and classifying.		✓		✓	✓		
using their observations and ideas to suggest answers to questions.		✓			✓	✓	
gathering and recording data to help in answering questions.		✓	✓	✓	✓	✓	

National curriculum by Kapow Primary's themes and units

<p>Year 1/2 - National curriculum Science content</p> <p>Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p>	<p>Kapow Primary's Science strands</p>	<p>Kapow Primary topics Key stage 1 - Year 1/2 Cycle B</p>					
		<p><u>Sensitive bodies</u></p>	<p>Everyday materials</p>	<p>Comparing animals</p>	<p>Uses of everyday materials</p>	<p>Micro-habitats</p>	<p>Making connections - coming soon!</p>
<p>asking simple questions and recognising that they can be answered in different ways.</p>	<p>Working scientifically</p>	✓	✓	✓	✓	✓	
<p>observing closely, using simple equipment.</p>		✓	✓		✓	✓	
<p>performing simple tests.</p>		✓	✓		✓	✓	
<p>identifying and classifying.</p>		✓	✓	✓		✓	
<p>using their observations and ideas to suggest answers to questions.</p>		✓	✓	✓	✓	✓	
<p>gathering and recording data to help in answering questions.</p>		✓	✓	✓	✓	✓	

National curriculum by Kapow Primary's themes and units

Year 1/2 - National curriculum Science content Pupils should be taught to:	Kapow Primary's Science strands	Kapow Primary topics Key stage 1 - Year 1/2 Cycle A					
		Introduction to plants	Seasonal changes	Habitats	Life cycles and health	Plant growth	Making connections - coming soon!
identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	Scientific knowledge and understanding	✓					
identify and describe the basic structure of a variety of common flowering plants, including trees.		✓					
identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.		Covered in Cycle B					
identify and name a variety of common animals that are carnivores, herbivores and omnivores.		Covered in Cycle B					
describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).		Covered in Cycle B					
identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.		Covered in Cycle B					
distinguish between an object and the material from which it is made.		Covered in Cycle B					
identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.		Covered in Cycle B					
describe the simple physical properties of a variety of everyday materials.		Covered in Cycle B					
compare and group together a variety of everyday materials on the basis of their simple physical properties.		Covered in Cycle B					
observe changes across the four seasons.			✓				
observe and describe weather associated with the seasons and how day length varies.			✓				

National curriculum by Kapow Primary's themes and units

Year 1/2 - National curriculum Science content Pupils should be taught to:	Kapow Primary's Science strands	Kapow Primary topics Key stage 1 - Year 1/2 Cycle A						
		Introduction to plants	Seasonal changes	Habitats	Life cycles and health	Plant growth	Making connections - coming soon!	
explore and compare the differences between things that are living, dead, and things that have never been alive.	Scientific knowledge and understanding			✓				
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 plants and animals in their habitats, including microhabitats.				✓				
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.				✓				
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.						✓		
notice that animals, including humans, have offspring which grow into adults.					✓			
find out about and describe the basic needs of animals, including humans, for survival (water, food and air).					✓			
describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.					✓			
identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.			Covered in Cycle B					
find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.			Covered in Cycle B					

National curriculum by Kapow Primary's themes and units

<p>Year 1/2 - National curriculum Science content</p> <p>Pupils should be taught to:</p>	<p>Kapow Primary's Science strands</p>	<p>Kapow Primary topics Key stage 1 - Year 1/2 Cycle B</p>					
		<p><u>Sensitive bodies</u></p>	<p>Everyday materials</p>	<p>Comparing animals</p>	<p>Uses of everyday materials</p>	<p>Micro-habitats</p>	<p>Making connections - coming soon!</p>
<p>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p>	<p>Scientific knowledge and understanding</p>	<p>Covered in Cycle A</p>					
<p>identify and describe the basic structure of a variety of common flowering plants, including trees.</p>		<p>Covered in Cycle A</p>					
<p>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p>				<p>✓</p>			
<p>identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p>				<p>✓</p>			
<p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p>				<p>✓</p>			
<p>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>		<p>✓</p>					
<p>distinguish between an object and the material from which it is made.</p>			<p>✓</p>				
<p>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p>			<p>✓</p>				
<p>describe the simple physical properties of a variety of everyday materials.</p>			<p>✓</p>				
<p>compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>			<p>✓</p>				
<p>observe changes across the four seasons.</p>		<p>Covered in Cycle A</p>					
<p>observe and describe weather associated with the seasons and how day length varies.</p>		<p>Covered in Cycle A</p>					

National curriculum by Kapow Primary's themes and units

Year 1/2 - National curriculum Science content Pupils should be taught to:	Kapow Primary's Science strands	Kapow Primary topics Key stage 1 - Year 1/2 Cycle B					
		Sensitive bodies	Everyday materials	Comparing animals	Uses of everyday materials	Micro-habitats	Making connections - coming soon!
explore and compare the differences between things that are living, dead, and things that have never been alive.	Scientific knowledge and understanding	Covered in Cycle A					
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 plants and animals in their habitats, including microhabitats.						✓	
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.		Covered in Cycle A					
observe and describe how seeds and bulbs grow into mature plants.		Covered in Cycle A					
find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.		Covered in Cycle A					
notice that animals, including humans, have offspring which grow into adults.		Covered in Cycle A					
find out about and describe the basic needs of animals, including humans, for survival (water, food and air).		Covered in Cycle A					
describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.		Covered in Cycle A					
identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.					✓		
find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.					✓		

National curriculum by Kapow Primary's themes and units

Year 3/4- National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 3/4 Cycle A					
		<u>Light and shadows</u>	Movement and nutrition	Rocks and soil	Digestion and food	Electricity and circuits	Making connections - coming soon!
Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:	Working scientifically						
asking relevant questions and using different types of scientific enquiries to answer them.		✓		✓	✓	✓	
setting up simple practical enquiries, comparative and fair tests.		✓	✓	✓	✓	✓	
making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.		✓	✓	✓	✓	✓	
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.		✓	✓	✓	✓	✓	
using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.		✓		✓	✓	✓	
identifying differences, similarities or changes related to simple scientific ideas and processes.		✓	✓		✓	✓	
using straightforward scientific evidence to answer questions or to support their findings.		✓	✓	✓	✓	✓	

National curriculum by Kapow Primary's themes and units

<p>Year 3/4 - National curriculum Science content</p> <p>Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p>	<p>Kapow Primary's Science strands</p>	<p>Kapow Primary topics Key stage 2 - Year 3/4 Cycle B</p>													
	<p>Working scientifically</p>	<p><u>Forces and magnets</u></p>	<p>States of matter</p>	<p>Sound and vibrations</p>	<p>Classification and changing habitats</p>	<p>Plant reproduction</p>	<p>Making connections - coming soon!</p>								
<p>asking relevant questions and using different types of scientific enquiries to answer them.</p>			✓	✓	✓		✓								
<p>setting up simple practical enquiries, comparative and fair tests.</p>				✓	✓	✓		✓							
<p>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p>					✓	✓	✓	✓	✓						
<p>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p>						✓	✓	✓	✓	✓					
<p>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p>							✓	✓	✓	✓	✓				
<p>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>									✓	✓		✓			
<p>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>									✓	✓	✓		✓		
<p>identifying differences, similarities or changes related to simple scientific ideas and processes.</p>										✓		✓	✓	✓	
<p>using straightforward scientific evidence to answer questions or to support their findings.</p>											✓	✓	✓	✓	✓

National curriculum by Kapow Primary's themes and units

<p>Year 3/4 - National curriculum Science content</p> <p>Pupils should be taught to:</p>	<p>Kapow Primary's Science strands</p>	<p>Kapow Primary topics Key stage 2 - Year 3/4 Cycle A</p>													
	<p>Scientific knowledge and understanding</p>	<p><u>Light and shadows</u></p>	<p>Movement and nutrition</p>	<p>Rocks and soil</p>	<p>Digestion and food</p>	<p>Electricity and circuits</p>	<p>Making connections - coming soon!</p>								
<p>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p>			<p>Covered in Cycle B</p>												
<p>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.</p>				<p>Covered in Cycle B</p>											
<p>investigate the way in which water is transported within plants.</p>					<p>Covered in Cycle B</p>										
<p>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>						<p>Covered in Cycle B</p>									
<p>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.</p>								<p>✓</p>							
<p>identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>									<p>✓</p>						
<p>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p>											<p>✓</p>				
<p>describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p>												<p>✓</p>			
<p>recognise that soils are made from rocks and organic matter.</p>													<p>✓</p>		

National curriculum by Kapow Primary's themes and units

<p>Year 3/4 - National curriculum Science content</p> <p>Pupils should be taught to:</p>	<p>Kapow Primary's Science strands</p>	<p>Kapow Primary topics Key stage 2 - Year 3/4 Cycle A</p>						
		<p><u>Light and shadows</u></p>	<p>Movement and nutrition</p>	<p>Rocks and soil</p>	<p>Digestion and food</p>	<p>Electricity and circuits</p>	<p>Making connections - coming soon!</p>	
recognise that they need light in order to see things and that dark is the absence of light.	<p>Scientific knowledge and understanding</p>	✓						
notice that light is reflected from surfaces.		✓						
recognise that light from the sun can be dangerous and that there are ways to protect their eyes.		✓						
recognise that shadows are formed when the light from a light source is blocked by an opaque object.		✓						
find patterns in the way that the size of shadows change.		✓						
compare how things move on different surfaces.		<p>Scientific knowledge and understanding</p>	Covered in Cycle B					
notice that some forces need contact between two objects, but magnetic forces can act at a distance.			Covered in Cycle B					
observe how magnets attract or repel each other and attract some materials and not others.			Covered in Cycle B					
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.			Covered in Cycle B					
describe magnets as having two poles.			Covered in Cycle B					
predict whether two magnets will attract or repel each other, depending on which poles are facing.			Covered in Cycle B					

National curriculum by Kapow Primary's themes and units

Year 3/4 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 3/4 Cycle A					
		Light and shadows	Movement and nutrition	Rocks and soil	Digestion and food	Electricity and circuits	Making connections - coming soon!
Pupils should be taught to:							
recognise that living things can be grouped in a variety of ways.	Scientific knowledge and understanding				✓		
explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.		Covered in Cycle B					
recognise that environments can change and that this can sometimes pose dangers to living things.		Covered in Cycle B					
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.					✓		
compare and group materials together, according to whether they are solids, liquids or gases.		Covered in Cycle B					
observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).		Covered in Cycle B					
identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.		Covered in Cycle B					

National curriculum by Kapow Primary's themes and units

Year 3/4 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 3/4 Cycle A					
		<u>Light and shadows</u>	Movement and nutrition	Rocks and soil	Digestion and food	Electricity and circuits	Making connections - coming soon!
Pupils should be taught to:							
identify how sounds are made, associating some of them with something vibrating.	Scientific knowledge and understanding	Covered in Cycle B					
recognise that vibrations from sounds travel through a medium to the ear.		Covered in Cycle B					
find patterns between the pitch of a sound and features of the object that produced it.		Covered in Cycle B					
find patterns between the volume of a sound and the strength of the vibrations that produced it.		Covered in Cycle B					
recognise that sounds get fainter as the distance from the sound source increases.		Covered in Cycle B					
identify common appliances that run on electricity.						✓	
construct a simple series electrical circuit, identifying 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.						✓	

National curriculum by Kapow Primary's themes and units

Year 3/4 - National curriculum Science content Pupils should be taught to:	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 3/4 Cycle B					
		<u>Forces and magnets</u>	States of matter	Sound and vibrations	Classification and changing habitats	Plant reproduction	Making connections - coming soon!
identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.	Scientific knowledge and understanding					✓	
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.						✓	
investigate 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.						✓	
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.		Covered in Cycle A					
identify that humans and some other animals have skeletons and muscles for support, protection and movement.		Covered in Cycle A					
compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.		Covered in Cycle A					
describe in simple terms how fossils are formed when things that have lived are trapped within rock.		Covered in Cycle A					
recognise that soils are made from rocks and organic matter.		Covered in Cycle A					

National curriculum by Kapow Primary's themes and units

Year 3/4 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 3/4 Cycle B					
		<u>Forces and magnets</u>	States of matter	Sound and vibrations	Classification and changing habitats	Plant reproduction	Making connections - coming soon!
Pupils should be taught to:							
recognise that they need light in order to see things and that dark is the absence of light.	Scientific knowledge and understanding	Covered in Cycle A					
notice that light is reflected from surfaces.		Covered in Cycle A					
recognise that light from the sun can be dangerous and that there are ways to protect their eyes.		Covered in Cycle A					
recognise that shadows are formed when the light from a light source is blocked by an opaque object.		Covered in Cycle A					
find patterns in the way that the size of shadows change.		Covered in Cycle A					
compare how things move on different surfaces.		✓					
notice that some forces need contact between two objects, but magnetic forces can act at a distance.		✓					
observe how magnets attract or repel each other and attract some materials and not others.		✓					
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.		✓					
describe magnets as having two poles.		✓					
predict whether two magnets will attract or repel each other, depending on which poles are facing.	✓						

National curriculum by Kapow Primary's themes and units

Year 3/4 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 3/4 Cycle B					
		Forces and magnets	States of matter	Sound and vibrations	Classification and changing habitats	Plant reproduction	Making connections - coming soon!
Pupils should be taught to:							
recognise that living things can be grouped in a variety of ways.	Scientific knowledge and understanding				✓		
explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.					✓		
recognise that environments can change and that this can sometimes pose dangers to living things.					✓		
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.		Covered in Cycle A					
construct and interpret a variety of food chains, identifying producers, predators and prey.		Covered in Cycle A					
compare and group materials together, according to whether they are solids, liquids or gases.			✓				
observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).			✓				
identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.			✓				
identify how sounds are made, associating some of them with something vibrating.					✓		

National curriculum by Kapow Primary's themes and units

Year 3/4 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 3/4 Cycle B					
		<u>Forces and magnets</u>	States of matter	Sound and vibrations	Classification and changing habitats	Plant reproduction	Making connections - coming soon!
Pupils should be taught to:							
recognise that vibrations from sounds travel through a medium to the ear.	Scientific knowledge and understanding			✓			
find patterns between the 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 source increases.				✓			
identify common appliances that run on electricity.		Covered in Cycle A					
construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.		Covered in Cycle A					
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.		Covered in Cycle A					
recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.		Covered in Cycle A					
recognise some common conductors and insulators, and associate metals with being good conductors.		Covered in Cycle A					

National curriculum by Kapow Primary's themes and units

<p>Year 5/6 - National curriculum Science content</p> <p>Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p>	<p>Kapow Primary's Science strands</p>	<p>Kapow Primary topics Key stage 2 - Year 5/6 Cycle A</p>						
	<p>Working scientifically</p>	<p><u>Mixtures and separation</u></p>	<p>Properties and changes</p>	<p>Earth and space</p>	<p>Circulation and health</p>	<p>Light and reflection</p>	<p>Making connections - coming soon!</p>	
<p>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>			✓	✓		✓	✓	
<p>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p>			✓	✓		✓	✓	
<p>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>			✓	✓		✓	✓	
<p>using test results to make predictions to set up further comparative and fair tests.</p>						✓	✓	
<p>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.</p>			✓	✓		✓	✓	
<p>identifying scientific evidence that has been used to support or refute ideas or arguments.</p>					✓	✓	✓	

National curriculum by Kapow Primary's themes and units

<p>Year 5/6 - National curriculum Science content</p> <p>Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p>	<p>Kapow Primary's Science strands</p>	<p>Kapow Primary topics Key stage 2 - Year 5/6 Cycle B</p>						
		<p><u>Life cycles and reproduction</u></p>	<p>Unbalanced forces</p>	<p>Classifying big and small</p>	<p>Circuits, batteries and switches</p>	<p>Evolution and inheritance</p>	<p>Human timeline</p>	<p>Making connections - coming soon!</p>
<p>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>	<p>Working scientifically</p>	✓	✓		✓	✓		
<p>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p>		✓	✓		✓			
<p>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>			✓	✓	✓	✓	✓	
<p>using test results to make predictions to set up further comparative and fair tests.</p>		✓	✓		✓	✓	✓	
<p>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.</p>			✓		✓	✓	✓	
<p>identifying scientific evidence that has been used to support or refute ideas or arguments.</p>			✓	✓	✓	✓		

National curriculum by Kapow Primary's themes and units

Year 5/6 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 5/6 Cycle A					
		Mixtures and separation	Properties and changes	Earth and space	Circulation and health	Light and reflection	Making connections - coming soon!
Pupils should be taught to:							
describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	Scientific knowledge and understanding	Covered in Cycle B					
describe the life process of reproduction in some plants and animals.		Covered in Cycle B					
describe the changes as humans develop to old age.		Covered in Cycle B					
compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.			✓				
know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.		✓					
use knowledge of 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.			✓				

National curriculum by Kapow Primary's themes and units

Year 5/6 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 5/6 Cycle A						
		<u>Mixtures and separation</u>	Properties and changes	Earth and space	Circulation and health	Light and reflection	Making connections - coming soon!	
Pupils should be taught to:								
describe the movement of the Earth, and other planets, relative to the Sun in the solar system.	Scientific knowledge and understanding			✓				
describe the movement of 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.				✓				
explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.				✓				
identify the effects of air resistance, water resistance and friction, that act between moving surfaces.			Covered in Cycle B					
recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.			Covered in Cycle B					

National curriculum by Kapow Primary's themes and units

Year 5/6 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 5/6 Cycle A					
		<u>Mixtures and separation</u>	Properties and changes	Earth and space	Circulation and health	Light and reflection	Making connections - coming soon!
Pupils should be taught to:							
describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.	Scientific knowledge and understanding	Covered in Cycle B					
give reasons for classifying plants and animals based on specific characteristics.		Covered in Cycle B					
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.					✓		
recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.		Covered in Cycle B					
recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.		Covered in Cycle B					
identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.		Covered in Cycle B					

National curriculum by Kapow Primary's themes and units

Year 5/6 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 5/6 Cycle A					
		<u>Mixtures and separation</u>	Properties and changes	Earth and space	Circulation and health	Light and reflection	Making connections - coming soon!
Pupils should be taught to:							
recognise that light appears to travel in straight lines.	Scientific knowledge and understanding					✓	
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.						✓	
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 why shadows have the same shape as the objects that cast them.						✓	
associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.		Covered in Cycle B					
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.		Covered in Cycle B					
use recognised symbols when representing a simple circuit in a diagram.		Covered in Cycle B					

National curriculum by Kapow Primary's themes and units

Year 5/6 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 5/6 Cycle B						
		<u>Life cycles and reproduction</u>	Unbalanced forces	Classifying big and small	Circuits, batteries and switches	Evolution and inheritance	Human timeline	Making connections - coming soon!
Pupils should be taught to:								
describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	Scientific knowledge and understanding	✓					✓	
describe the life process of reproduction in some plants and animals.		✓					✓	
describe the changes as humans develop to old age.							✓	
compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.		Covered in Cycle A						
know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.		Covered in Cycle A						
use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.		Covered in Cycle A						
give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.		Covered in Cycle A						
demonstrate that dissolving, mixing and changes of state are reversible changes.		Covered in Cycle A						

National curriculum by Kapow Primary's themes and units

<p>Year 5/6 - National curriculum Science content</p> <p>Pupils should be taught to:</p>	<p>Kapow Primary's Science strands</p>	<p>Kapow Primary topics Key stage 2 - Year 5/6 Cycle B</p>						
		<p><u>Life cycles and reproduction</u></p>	<p>Unbalanced forces</p>	<p>Classifying big and small</p>	<p>Circuits, batteries and switches</p>	<p>Evolution and inheritance</p>	<p>Human timeline</p>	<p>Making connections - coming soon!</p>
<p>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.</p>	<p>Scientific knowledge and understanding</p>	<p>Covered in Cycle A</p>						
<p>describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p>		<p>Covered in Cycle A</p>						
<p>describe the movement of the Moon relative to the Earth.</p>		<p>Covered in Cycle A</p>						
<p>describe the Sun, Earth and Moon as approximately spherical bodies.</p>		<p>Covered in Cycle A</p>						
<p>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>		<p>Covered in Cycle A</p>						
<p>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p>		<p>✓</p>						
<p>identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p>		<p>✓</p>						
<p>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>		<p>✓</p>						

National curriculum by Kapow Primary's themes and units

Year 5/6 - National curriculum Science content Pupils should be taught to:	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 5/6 Cycle B						
		<u>Life cycles and reproduction</u>	Unbalanced forces	Classifying big and small	Circuits, batteries and switches	Evolution and inheritance	Human timeline	Making connections - coming soon!
describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.	Scientific knowledge and understanding			✓				
give reasons for classifying plants and animals based on specific characteristics.				✓				
identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.		Covered in Cycle A						
recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.		Covered in Cycle A						
describe the ways in which nutrients and water are transported within animals, including humans.		Covered in Cycle A						
recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.						✓		
recognise that living things produce offspring of the same kind, but 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.						✓		

National curriculum by Kapow Primary's themes and units

Year 5/6 - National curriculum Science content	Kapow Primary's Science strands	Kapow Primary topics Key stage 2 - Year 5/6 Cycle B						
		<u>Life cycles and reproduction</u>	Unbalanced forces	Classifying big and small	Circuits, batteries and switches	Evolution and inheritance	Human timeline	Making connections - coming soon!
Pupils should be taught to:								
recognise that light appears to travel in straight lines.	Scientific knowledge and understanding	Covered in Cycle A						
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.		Covered in Cycle A						
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.		Covered in Cycle A						
use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.		Covered in Cycle A						
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.					✓			
use recognised symbols when representing a simple circuit in a diagram.					✓			

Cross-curricular links - Year 1/2

National curriculum subjects	Kapow Primary units Key stage 1 - Year 1/2 Cycle A					
	Introduction to plants	Seasonal changes	Habitats	Life cycles and health	Plant growth	Making connections - coming soon!
English	Writing: Composing sentences before writing; punctuating sentences with capital letters and full stops.	Spoken language: Presenting a weather report.	Spoken language: Performing a group presentation about the life processes.	Reading - comprehension: Reading non-fiction to gather information.		
Maths	Measurement: : Using connecting cubes to compare and measure leaf length.	Statistics: Using tally marks to record data; completing a pictogram.		Measurement: Using standard units to measure height. Compare and sequence intervals of time.	Measurement: Using standard units to measure stem height.	
Art and design	Observational drawings of flowering plants.	Creating a season mobile; using fingerprints to create seasonal tree paintings.				
Computing			Carrying out online research into woodland animals.			
D&T				Using the basic principles of healthy and varied diet.		
Geography	Carrying out fieldwork in the school grounds.	Locating the capital cities on the map of the United Kingdom.				
History	Recognising the significance of scientists in the past.					
Music	Listening to and joining in with songs.	Listening to and joining in with songs.				
PE				Mastering basic movements like running.		
RSE & PSHE				Knowing what constitutes healthy diet and the principles of planning healthy meals		

Cross-curricular links - Year 1/2

National curriculum subjects	Kapow Primary units Key stage 1 - Year 1/2 Cycle B					
	<u>Sensitive bodies</u>	Everyday materials	Comparing animals	Uses of everyday materials	Micro-habitats	Making connections - coming soon!
English	Reading: Applying phonic knowledge. Writing: Segmenting to spell.	Reading: Developing pleasure in reading and new vocabulary.	Reading: Applying phonic knowledge. Writing: Composing sentences orally before writing and re-reading to check for sense; using capital letters and full stops and the personal pronoun 'I'.	Writing: Using co-ordination (but) when writing about objects and materials.	Reading: Reading a non-fiction text to find answers. Writing: Punctuating sentences with question marks; using adverbs of time.	
Maths	Measurement: Using connecting cubes to measure and compare lengths. Number: Counting accurately.		Number: Representing the number of pets in class using connecting cubes and recording data in a block chart; using the language less than, more than, most and fewest.	Measurement: Using connecting cubes to measure the length materials can stretch and the strength of paper fold bridges; using the symbol (p) for pence. Fractions: Recognising half and quarters when folding paper. Multiplication: Calculating the total cost of items by multiplying by ten.		
Geography					Carrying out fieldwork to identify microhabitats on the school grounds.	
History						
Music				Using their voices expressively to sing songs.		

Cross-curricular links - Year 3/4

National curriculum subjects	Kapow Primary units Key stage 2 - Year 3/4 Cycle A					
	<u>Light and shadows</u>	Movement and nutrition	Rocks and soil	Digestion and food	Electricity and circuits	Making connections - coming soon!
English	Reading Reading for information about a notable person. Spoken language: Articulating and justifying opinions; presenting information using a shadow puppet to the class.	Reading: Reading for information about nutrient groups and summarising as written notes. Spoken language: Articulating and justifying opinions in paired or group discussion.		Spoken language: Listening and responding in group discussion and justifying opinions; Writing - composition: explaining how animals would be affected by different teeth; writing a letter to Steve Backshall about their poo clues.	Spoken language: Asking questions and justifying answers or opinions using scientific knowledge; speculating, hypothesising, imagining and exploring ideas through spoken language while modelling circuits. Writing: Planning writing to understand and learn from vocabulary.	
Maths	Number and place value and Measurement; Comparing values of lux using datalogging software; measuring the length of shadows.	Number and place value and Measurement; Measuring bone lengths and ordering them based on size; comparing nutritional values on food packaging.	Statistics: Drawing a bar chart to show drainage rates for different categories of soil.	Measurement: Taking measurements of time in the toothbrush investigation. Statistics: Analysing line graph trends and predicting missing values.	Geometry - properties of shapes: Recognising 2D shapes when drawing symbols and circuit diagrams.	
D & T		Making a model hand with moving fingers; understanding what makes a balanced and healthy diet.			Understanding and using electrical systems when building circuits.	
Geography	Comparing daylight/night hours in different countries.			Exploring animals from different habitats and their food chains.		
Music						
RSE/PSHE		Understanding what makes up a balanced and healthy diet.		Learning about dental health and investigating dental hygiene.		

Cross-curricular links - Year 3/4

National curriculum subjects	Kapow Primary units Key stage 2 - Year 3/4 Cycle B					
	Forces and magnets	States of matter	Sound and vibrations	Classification and changing habitats	Plant reproduction	Making connections - coming soon!
English			<p>Reading - comprehension: Discussing their understanding of a text about how dolphins and whales use sound underwater to navigate and explaining the meaning of words in context; asking questions to improve their understanding; summarising main ideas; participating in discussion about the text.</p> <p>Spoken language: Taking turns and listening to what others say.</p>	<p>Reading - comprehension: Discussing their understanding of a text about changes over the seasons and explaining the meaning of words in context, such as hibernate and migrate; asking questions to improve their understanding; retrieving and recording information from non-fiction.</p> <p>Spoken language: Taking turns and listening to each of the season stories being read aloud by their peers.</p>	<p>Spoken language: Articulating and justifying opinions in paired or group discussion.</p>	
Maths	<p>Number and place value and Measurement; Measuring distance travelled by a toy car.</p>	<p>Number and place value and Measurement; Taking temperature measurements using a thermometer.</p>	<p>Statistics: Interpreting and presenting discrete data using a bar chart to show the volume of different sounds.</p> <p>Measurement: Measuring, comparing, adding and subtracting; lengths to measure the distance sound travels at different volumes.</p>	<p>Statistics: Interpreting and presenting data about the characteristics of animals and plants using bar charts, pictograms and tables.</p>	<p>Number and place value, Statistics and Measurement: Comparing values of data gathered from measuring plant growth; completing a bar chart.</p>	
D & T					<p>Drawing a design for seed that has different dispersal methods; selecting materials to build a model of a seed to show dispersal.</p>	
Geography						
Music			<p>Listening to different volume and pitch sounds with attention to detail and recalling sounds with increasing aural memory.</p>			

Cross-curricular links - Year 5/6

National curriculum subjects	Kapow Primary units Key stage 2 - Year 5/6 Cycle A					
	Mixtures and separation	Properties and changes	Earth and space	Circulation and health	Light and reflection	Making connections - coming soon!
English				<p>Spoken language: Articulating and justifying answers and opinions; participating in a role play to model the circulatory system.</p> <p>Reading: Researching different animal masses and evaluating the reliability of the sources.</p> <p>Writing: Planning their writing and using diagrams to creatively describe the journey around the circulatory system; planning a method for an enquiry by practising the process with peers to check the order and meaning of the instructions.</p>	<p>Spoken language: Articulating and justifying answers and opinions; developing hypothesising and imagining experimental outcomes through spoken language; considering the viewpoints of those that believe the Earth is flat and discussing the provided evidence.</p> <p>Writing: Planning writing by noting ideas and drawing on concepts about light and reflection to write a conclusion; summarising how mirrors are useful through creative writing or presentations.</p>	
Maths		<p>Number and place value and Measurement; Measuring around a circular object (balloon).</p>	<p>Measurement: Measuring the relative distances between planets in centimeters and meters; converting between measurements of time - hours and minutes.</p>	<p>Number - number and place value: Comparing animal masses and heart rates to identify a pattern.</p> <p>Measurement: Converting between grams and kilograms when researching animal masses.</p> <p>Statistics: Calculating an average mass from multiple researched values or from repeat readings during the enquiry; interpreting line graphs to describe the effects of exercise and fitness on heart rate.</p>	<p>Measurement: Measuring and comparing lengths in a shadow investigation (cm/mm); measuring and comparing incoming and reflected angles of light.</p> <p>Statistics and Geometry - properties of shapes: Calculating and interpreting the mean average for the shadow investigation; interpreting and constructing reflection line graphs and using these to solve problems about missing values.</p>	

Cross-curricular links - Year 5/6 continued...

National curriculum subjects	Kapow Primary units Key stage 2 - Year 5/6 Cycle A					
	Mixtures and separation	Properties and changes	Earth and space	Circulation and health	Light and reflection	Making connections - coming soon!
Art and design						
D & T		Measuring around a circular object (balloon) using string and a ruler.	Designing the parts of a sundial, calibrating a sundial and improving the design.	Understanding the principles of a healthy and varied diet when providing advice to the class or a patient case study about being healthy.	Using a net and mirrors to build a working periscope.	
Geography	Recapping the processes involved in the water cycle.					
History					Exploring the historical use of periscopes in World War I.	
PE				Participating in a physical challenge as part of an enquiry into heart rate and exercise.		
RSE/PSHE				Considering mental wellbeing, physical health and fitness, healthy eating, drugs, alcohol and tobacco when advising the class or a patient case study about how to be healthy; analysing data to identify how heart rate varies with different fitness levels.		

Cross-curricular links - Year 5/6

National curriculum subjects	Kapow Primary units Key stage 2 - Year 5/6 Cycle B						
	Life cycles and reproduction	Unbalanced forces	Classifying big and small	Circuits, batteries and switches	Evolution and inheritance	Human timeline	Making connections - coming soon!
English	Reading - comprehension: Reading non-fiction and identifying key information.		Reading - comprehension: Analysing a poem about bacteria. Writing - composition: Writing a short poem of their own about bacteria.	Spoken language: Articulating and justifying answers and opinions; participating in role plays to represent electrical circuits.	Spoken language: Articulating and justifying answers and opinions. Reading - comprehension: Reading text about Darwin and Wallace's voyages, their observations and conclusions.	Spoken language: Articulating and justifying answers and opinions when finding relationships between variables or predicting unknown values.	
Maths	Measurement: Measuring the roots of a plant and converting from centimetres to millimetres. Statistics: Presenting data in a line graph; analysing data.	Measurement: Measuring the diameter of planets, the time taken for a parachute or a missile to fall and the distance a marshmallow can be catapulted. Statistics: Presenting data in a line graph; analysing data in tables and graphs; calculating the mean average.		Measurement: Measuring, recording and comparing lengths of different batteries(cm/mm). Statistics: Calculating the mean average when investigating bulb brightness and resistance or voltage.	Number - addition, subtraction, multiplication and division: Comparing results when modelling natural selection. Statistics: Calculating the mean average when modelling natural selection.	Number and place value: Comparing values to identify patterns in data and predict unknown values; rounding data for plotting as a scatter graph. Statistics: Presenting data in a scatter graph; analysing data.	

Cross-curricular links - Year 5/6 continued...

National curriculum subjects	Kapow Primary units Key stage 2 - Year 5/6 Cycle B						
	Life cycles and reproduction	Unbalanced forces	Classifying big and small	Circuits, batteries and switches	Evolution and inheritance	Human timeline	Making connections - coming soon!
Art and design	Drawing observational drawings of the structures in a flower.		Using clay to model the invertebrate groups.			Producing agamographs to represent the changes that occur when humans grow from a baby to an adult.	
D & T		Designing the windmill of a wind-powered turbine.		Using electrical circuits to build devices for a specific purpose; designing using suitable diagrams and symbols and constructing.			
Geography					Comparing the living conditions and factors that affect survival in different habitats.		
History					Comparing primary and secondary sources, their role as evidence and the degree of trust.		
RSE/PSHE						Identifying key changes that occur in boys and girls as a result of puberty, including menstruation.	

Version history

This page shows updates that have been made to this document.

Date	Update
12.08.24	First published.
26.08.24	EYFS information added (p.3-4).
02.09.24	Added links to published units.