Key Skills

Subject-specific vocabulary Knowledge and understanding Working scientifically

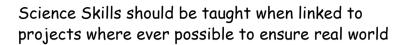
Pensans Primary School

Science Skills should be taught when linked to projects where ever possible to ensure real world



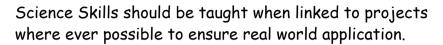
SCIENCE

	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	Know some names of plants. Begin to say how they are different from each other. Start to describe the features of plants.	Identify and name a variety of common wild and garden plants. Identify and describe the basic structure of a plant (root, stem, leaves and flowers).	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Describe the basic structure of a variety of common flowering plants and trees (root, stem, leaves and flowers, roots, trunk, branches).	Observe and describe how seeds and bulbs grow into mature plants. Describe how plants need water, light, and suitable temp to grow and stay healthy.	Identify/describe the functions of different parts of flowering plants (inc. roots, stem/trunk, leaves and flower). 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 (inc. pollination, seed formation and seed dispersal).	N/A	N/A	N/A





Animals including humans	Observe and describe features of animals and plants. Know that animals and plants are living Say how animals and plants are different.	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	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 & omnivores. Describe/compare the structure of common animals (inc. fish, reptiles, amphibians, birds, 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.	Notice that animals, including humans, have offspring which grow into adults. Find out and describe the basic needs of animals for survival (water, food, air). Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.	Identify and describe how animals, including humans, need the right types and amount of nutrition, that they cannot make their own food but that they get nutrition from what they eat. Identify 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, prey, herbivores, carnivores and omnivores. Explain how a feeding relationship occurs in a variety of habitats.	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, drugs and lifestyle on the way bodies function. Describe the way in which nutrients and water are transported within animals including humans.
Evolution and inheritance					about living things that inhabi	,	years ago.	
	Identify how anima	ls and plants are adopte	d to suit their environm	ent in different ways	and that adaptation may lead	to evolution.		





Materials	Begin to say	Distinguish between	Distinguish between	Identify and	Rocks	States of matter	Properties and changes	N/A
	similarities and	an object and the	an object and the	compare the uses	Compare and group	Compare and group	of materials	
	differences	material from which	material from which	(suitability) of a	together different	materials into solids,	Compare/group everyday	
	between	it is made.	it is made.	variety of everyday	types of rocks on the	liquids and gases.	material based their	
	materials.		67 17 (50 (60 (60 (60 (60 (60 (60 (60 (60 (60 (6	materials (inc. wood,	basis of their	The state of the s	properties, including	
		Identify and name a	Identify and name a	metal, plastic, glass,	appearance and simple	Observe and explain	their hardness, solubility,	
		variety of everyday	variety of everyday	brick, rock, paper,	their physical	that some materials	transparency,	
		materials, including	materials, including	cardboard) for	properties.	change state when	conductivity (electrical	
		wood, plastic, glass,	wood, plastic, glass,	particular uses.		heated/cooled and	and thermal), and	
		metal, water, and	metal, water and		Describe in simple	measure or research	response to magnets.	
		rock.	rock.	Find out how the	terms how fossils are	the temp at which this		
				shapes of solid	formed when things	happens in degrees	Give reasons, based on	
		Describe the simple	Describe the simple	objects made from	that have lived are	Celsius (°C)	evidence from	
		physical properties	physical properties	some materials can	trapped within rock.	555.55 (5)	comparative and fair	
		of a variety of	of a variety of	be changed by		Identify the part	tests, for the particular	
		everyday materials.	everyday materials.	squashing, bending,	Relate simple physical	played by evaporation	use of everyday materials	
		crei yaay marenas.		twisting and	properties of some	and condensation in	(inc. wood, metal and	
		Compare and group	Compare and group	stretching.	rocks to their	the water cycle and	plastic)	
		together a variety	together a variety		formation	associate the rate of	Explain how some	
		of everyday	of everyday		(igneous/sedimentary)	evaporation with	materials will dissolve in	
		materials on the	materials on the		,,	temperature.	liquid to form a solution	
		basis of their simple	basis of their simple		Recognise that soils are		Describe how to recover	
		physical properties.	physical properties.		made from rocks and		a substance from a	
		physical proper ries.			organic matter to form		solution.	
					igneous, sedimentary		Solution.	
					and metamorphic rock.		Use knowledge of solids,	
							liquids and gases:describe	
							how mixtures might be	
							separated (filtering,	
							sieving and evaporating).	
							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 (inc.	
							changes associated with	
							burning and action of acid	
							on bicarbornate of soda).	



Seasonal			Observe changes					
Changes			across the four					
Changes			seasons.					
			Observe and					
			describe weather					
			associated with the					
			seasons and how day					
			length varies.					
Living	Talk about the	Observe changes	N/A	Explore & compare	N/A	Recognise that living	Describe the differences	Describe how
	features of their	across the four		the differences		things can be grouped	in the life cycles of a	living things are
things and	immediate	seasons.		between things that		in a variety of ways.	mammal, an amphibian, an	classified into
their	environment			are living, dead and			insect and a bird.	broad groups
habitats		observe and		things that have		Explore and use	to a common transport or so a	according to
nabirars	Say how	describe weather		never been alive.		classification keys to	Describe the life	common
	environments	associated with the		Triantify that much		help group, identify	processes of	observable
	vary from one to	seasons and how day		Identify that most		and name a variety of	reproduction in some	characteristics
	another	length varies.		living things live in habitats that they		living things in the	plants and animals.	and based on
				are suited to.		local and wider		similarities and
				are suited to.		environment.		differences (inc.
				Describe how		-0.4 has 100 has 0.7 had		micro-organisms,
				different habitats		Recognise that		plants and
				provide for the		environments can		animals).
				basic needs of		change and that this		
				different kinds of		can sometimes pose		
				animals and plants		dangers to living		
				and how they depend		things.		
				on each other.		(A)		
				Identify and name a				
				variety of plants and				
				animals in their				
				habitats (inc. micro-				
				habitats).				
				Describe how				
				animals obtain their				
				food from plants and				
				other animals				
				(simple food chain).				
				Identify and name				
				different sources of				
				food.				
	-			1				



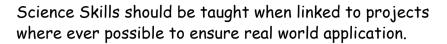
Light and	N/A	N/A	Light	N/A	Light	Sound	N/A	Light
sound						Identify and name how		Recognise that
Sound			Identify/name		Recognise that they	sounds are made,		light appears to
			sources of light		need light in order to	associating some of		travel in straight
			Explain what		see things and that	them with something		lines.
			darkness is.		dark is the absence of	vibrating.		0.0000000
					light.			Use the idea
			Compare a variety		3000000 12000000000000000000000000000000	Recognise that		that light travels
			of sources of light.		Notice that light is	vibrations from sounds		in straight lines
					reflected from	travel through a		to explain that
			Describe the		surfaces.	medium to the ear.		objects are seen
			features of day and		Recognise that light			because they
			night.		from the sun can be	Find patterns between		give out or
					dangerous and that	the pitch of a sound		reflect light into
			Describe the		there re ways to	and features of the		the eye.
			movement of the		protect their eyes.	object that produced		
			sun across the sky.		CONTRACTOR OF THE PROPERTY OF	it.		Explain that we
					Recognise that shadows			see things
					are formed when the	Find patterns between		because light
					light from a light source	the volume of a sound		travels from
					is blocked by a solid	and the strength of		light sources to
					object.	the vibrations that		our eyes of from
						produced it.		light sources to
					Investigate and find			objects and then
					patterns in the way the	Recognise that sounds		our eyes.
					size of shadows change.	get fainter as the		
					Commence of the Commence of th	distance from the		Using the idea
						sound source		that light travels
						increases.		in straight lines,
								explain why
								shadows have
								the same shape
								as the object
								that cast them.
								Explain that
								light can be
								broken into
								colours and
								different
								colours can be
								combined to
								appear as a new
								colour.



Earth and	N/A	N/A	N/A	N/A	N/A	Explain that the sun is	Describe the movement	N/A
расе						the centre of our solar	of earth and other	
space						system.	planets relative to the	
							sun in the solar system.	
						Discuss and		
						understand the terms	Describe the movement	
						star, galaxy, milky way	of the moon relative to	
						and universe.	the earth.	
						Identify the four	Describe the sun, earth	
						seasons and link this to	and moon as	
						changes in sunlight and	approximately spherical	
						weather.	bodies.	
						Begin to understand	Use the idea of the	
						the movement of the	Earth's rotation to	
						earth around the sun	explain day and night and	
						and the moons	the apparent movement	
						movement around the	of the sun across the sky.	
						earth.		
Forces	N/A	N/A	N/A	Describe how things	Compare how things	N/A	Explain that unsupported	N/A
				move at different	move on different		objects fall towards the	
and				speeds, speed up and	surfaces (friction).		Earth because of the	
Magnets				slow down.	M 10		force of gravity (drag	
					Understand that some		force).	
					forces need contact			
					between two objects		Identify the effect of	
					and that magnetic		gravity, air resistance,	
					forces can act at a		water resistance and	
					distance.		friction that act between	
					B. CASS TOP S.		moving surfaces.	
					Explain the force of			
					gravity.		Know how to measure the	
							size of a force using	
					Explore push and pulls		Newtons.	
					as a force.			
					7.25		Recognise that some	
					Magnets		mechanisms (inc. levers,	
					Describe how magnets		pulleys and gears) allow a	
					have two poles - one		smaller force to have a	
					that attracts and one		greater effect.	
					that repels.			
							Explain how scientists	
					Predict and observe how		such as Galileo Galilei and	



		I		I	manusta attacet es		Teaca Nawton habad to	
					magnets attract or		Isaac Newton helped to	
					repel each other and		develop the theory of	
					attract some materials		gravitation.	
					and not others,			
					depending on which			
					poles are facing.			
					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.			
Electricity	N/A	N/A	N/A	N/A		Identify common		Associate the
						appliances that run on		brightness of a
						electricity.		lamp or the
								volume of a
						Construct a simple		buzzer with the
						series circuit,		number and
						identifying and naming		voltage of
						its basic parts (inc.		batteries (cells)
						batteries, wires, bulbs,		used in the
						switches and buzzers).		circuit.
						Identify whether or		Compare and give
						not a lamp will light in a		reasons for
						simple series circuit,		variations in how
						based on whether or		components
						not the lamp is part of		function (inc. the
						a complete loop with a		brightness of a
						battery.		bulb, loudness of
								buzzers and
						Recognise that a		position of
						switch opens and		on/off
						closes a circuit and		switches).
						associate this with		
						whether or not a lamp		Use recognised
						lights in a simple		symbols when
						circuit.		representing a
								simple circuit
						Recognise that some		diagram knowing
						common conductors		the names of all





						and insulators and		
								components.
						associate metals with		
						being good conductors.		Identify what
						70000		causes a short
								circuit or a
								circuit to fuse.
Working	N/A	Ask simple questions	Ask simple questions	Observe closely	Ask relevant questions	Ask relevant questions	Plan different types of	Plan different
Scientific		and recognising that	and recognising that	using simple	using different types of	using different types	scientific enquiries to	types of
		they can be	they can be	equipment.	scientific enquiries to	of scientific enquiries	answer questions,	scientific
-ally		answered in	answered in		answer.	to answer.	including recognizing and	enquiries to
		different ways.	different ways.	Perform simple			controlling variables	answer
(to be				tests, make	Set up simple practical	Set up simple practical	where necessary.	questions,
•		Observe closely,		predictions, measure	enquiries, comparative	enquiries, comparative		including
delivered		using simple	Observe closely	and evaluate	and fair tests.	and fair tests using a	Take measurements,	recognizing and
through		equipment.	using simple	findings.		range of equipment.	using a range of	controlling
teaching of			equipment.		Begin to make accurate		equipment, with	variables where
subject		Perform simple	20 20 10 10	Identify and	measurements using	Begin to make accurate	increasing accuracy,	necessary.
-		tests.	Perform simple	classify.	standard units (inc. data	measurements using	taking repeat readings	
content			tests and evaluate		loggers).	standard units (inc.	when appropriate.	Take
and not to		Identifying and	the findings.	Record findings:		data loggers and		measurements,
be taught		classifying.		drawings, diagrams,	Record findings using	thermometers).	Record data and results	using a range of
separately)			Identify and	photographs, simple	simple scientific		using scientific diagrams	equipment, with
separarely)		Use observations	classify.	prepared formats,	language, drawings,	Record findings using	and labels, classification	complete
		and ideas to suggest		such as tables and	labeled diagrams, bar	simple scientific	keys, tables, scatter	accuracy, taking
		answers to	Record findings:	charts, tally charts	charts and tables.	language, drawings,	graphs, bar and line	repeat readings
		questions.	drawings, diagrams,	and displays.		labeled diagrams, bar	graphs.	when
			photographs, simple		Report findings from	charts and tables.		appropriate.
		Gather and record	prepared formats,		investigations including	D	Use test results to make	
		data to help in	such as tables and		written explanations of	Report findings from	predictions to set up	Record data and
		answering questions.	charts, tally charts		results and conclusions,	investigations including oral and written	further comparative	results using
			and displays.		displays or		tests.	scientific
					presentations.	explanations of results	Daniel and anima	diagrams and
					Use results to draw	and conclusions,	Report and present	labels, classificiation
					simple conclusions and	displays or presentations.	findings from enquiries, including conclusions,	
						presentations.		keys, tables,
					suggest improvements	Use acceptant down	causal relationships and	scatter graphs,
					and predictions for	Use results to draw	explanations of degrees of trust in tests, in oral	bar and line
					setting up further	simple conclusions,		graphs.
					tests.	make predictions for	and written forms.	C
					Look for shull-states	new values and suggest		Continue to use
					Look for similarities and	improvements.		test results to
					differences or changes	Use steelebate and		make prediction
					in data in order to draw	Use straightforward		to set up furthe
					conclusions.	scientific evidence to		comparative

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		Use straightforward	answer questions or to	tests.
		scientific language to	support findings (using	
		answer questions or to	secondary sources).	Report and
		support findings.		present findings
				from enquiries,
	The state of the s			including
				conclusions,
				causal
				relationships and
				explanations of
				degrees of trust
				in tests, in oral
				and written
				forms.
				Identify
				scientific
				evidence that
				has been used to
				support or
				refute ideas or
				arguments.

Blue text signifies statutory requirements.