

Spring – Cycle A – UKS2

Prior Learning - EYFS

- living things and the places in which they live
- language related to their senses
- introduced to the terms 'carnivore' and 'herbivore' when studying the diets of animals
- identify common features of animals
- explore the life cycles of animals including frogs and chickens

Prior Learning – KS1

- identify that humans are a type of animal, known as a mammal
- name body parts and recognise common structures between humans and other animals
- acknowledge senses, the body parts associated with each sense and their role in keeping us safe
- understand basic needs of humans for survival (including the importance of exercise, nutrition and good hygiene)
- explore how human offspring grow and change over time

Prior Learning – LKS2

- understand the importance of nutrition for humans and other animals
- explain the role of a skeleton and muscles
- identify animals with different types of skeleton
- describe the human digestive system
- explore teeth types and their functions
- make links to animals' diets and construct food chains to show the flow of energy

Project: <u>Human Reproduction and Ageing</u>	Learning Objective	Skills	Knowledge	Resources
Introductory Knowledge: Life cycle vocabulary Lesson 1	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	Compare the life cycles of animals, including a mammal, an amphibian, an insect and a bird.	A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages: embryo, juvenile, adolescent and adult. Amphibians' life cycles include the stages: egg, larva (tadpole), adolescent and adult. Some	<ul style="list-style-type: none"> • Dictionaries

			<p>insects' (butterflies, beetles and bees) life cycles include the stages: egg, larva, pupa and adult. Birds' life cycles include the stages: egg, baby, adolescent and adult.</p> <p>Vocabulary used to describe stages of a life cycle include foetus, infant, juvenile, adolescent and adult. Vocabulary used to describe processes in a life cycle include birth, growth, puberty and reproduction.</p>	
Engage: Animal life cycles Lesson 2	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	Compare the life cycles of animals, including a mammal, an amphibian, an insect and a bird.	A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages: embryo, juvenile, adolescent and adult. Amphibians' life cycles include the stages: egg, larva (tadpole), adolescent and adult. Some insects' (butterflies, beetles and bees) life cycles include the stages: egg, larva, pupa and adult. Birds' life cycles include the stages: egg, baby, adolescent and adult.	<ul style="list-style-type: none"> tablets
Engage: Classifying mammals Lesson 3	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	Compare the life cycles of animals, including a mammal, an amphibian, an insect and a bird.	A mammal is a vertebrate, which means it has a backbone. The five key mammalian characteristics of mammals are that they produce milk to feed their young, are warm blooded, give birth to live young, have fur or hair and breathe air with lungs.	
Engage: Typical mammalian life cycles Lesson 3	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	Compare the life cycles of animals, including a mammal, an amphibian, an insect and a bird.	The processes in mammalian life cycles are birth, growth, puberty and reproduction. The stages in mammalian life cycles are embryo, juvenile, adolescent and adult. The length of time for each stage and process varies between different mammals.	
Engage: Relationship between mammalian gestation and mass Lesson 4	Record data and results of increasing complexity using scientific diagrams.	Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models).	<p>Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams.</p> <p>A scatter graph is used when we have two sets of data, called variables, and we want to see a relationship between them. If there is a relationship between the variables, it is called a</p>	<ul style="list-style-type: none"> Tablets Rulers

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			correlation. If there is no relationship between the variables, it is called no correlation.	
Engage: Human life cycle Lesson 4	Record data and results of increasing complexity using scientific diagrams.	Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models).	Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams. Humans are mammals and have a mammalian life cycle.	
Develop: Human gestation stage Lesson 5	Describe the changes as humans develop to old age.	Describe the changes as humans develop from birth to old age.	Humans go through characteristic stages as they develop towards old age. These stages include baby, infant, toddler, child, adolescent, young adult, adult and senior citizen. Puberty is the transition between childhood and adulthood. Gestation is the length of time the young of a mammal develops inside the female's body before birth. The human gestation period is around 40 weeks. During this time, the organs, limbs and senses develop, and the foetus grows until it is ready to be born.	
Develop: Human juvenile stage	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding.	A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. Juveniles go through rapid growth, change and development over time. They become taller, talk and walk, learn new skills, such as reading and writing, and change from wholly dependent babies to more independent school children.	<ul style="list-style-type: none"> clipboards
Develop:	Know key facts about puberty and the changing adolescent body,	Explain why personal hygiene is important during puberty. View progression	Good personal hygiene (washing, wearing clean clothes and brushing teeth) can prevent disease or illness. Puberty is the period during which adolescents reach sexual maturity and	<ul style="list-style-type: none"> hoops camera or tablet

Human adolescent stage Lesson 6	particularly from age 9 through to age 11, including physical and emotional changes.	Describe the changes as humans develop from birth to old age.	become capable of reproduction. It causes physical and emotional changes. Humans go through characteristic stages as they develop towards old age. These stages include baby, infant, toddler, child, adolescent, young adult, adult and senior citizen. Puberty is the transition between childhood and adulthood.	
Develop: Human growth charts Lesson 7	Use test results to make predictions to set up further comparative and fair tests.	Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. Human growth charts are line graphs that show the predicted growth of juveniles and adolescents up to 18.	<ul style="list-style-type: none"> rulers
Develop: Human sexual reproduction Lesson 7	Describe the life process of reproduction in some plants and animals.	Describe the process of human reproduction. View progression Describe the life process of reproduction in some plants and animals.	Humans reproduce sexually, which involves two parents (one female and one male) and produces offspring that are different from the parents. Reproduction is the process of producing offspring and is essential for the continued survival of a species. There are two types of reproduction: sexual and asexual. Sexual reproduction involves two parents (one female and one male) and produces offspring that are different from the parents. Asexual reproduction involves one parent and produces offspring that is identical to the parent. During human sexual reproduction, a female egg is fertilised by a male sperm.	<ul style="list-style-type: none">
Develop: Human adult ageing Lesson 8	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Ask a wide range of relevant scientific questions that broaden their understanding of the world around them and identify how they can answer them.	Questions can help us find out about the world and can be answered using a range of scientific enquiries. As humans age, many of the body's systems gradually decline, leading to the changes seen in older people. These changes include the loss of eyesight and hearing, greying hair, wrinkled	<ul style="list-style-type: none"> Tablets Books on human ageing

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			skin, weakened bones, joints and muscles, heart problems, memory loss, and brain function problems.	
Innovate: Reporting and concluding Step 1 (30mins)	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding.	A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.	<ul style="list-style-type: none"> laptops Graph paper
Innovate: Reporting and concluding Step 2 (20mins)	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	<p>Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding.</p> <p>Within a group, decide which observations to make, when and for how long, and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect.</p>	<p>A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.</p> <p>An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time.</p>	<ul style="list-style-type: none">
Innovate: Reporting and concluding Step 3 (2hours)	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	<p>Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models).</p> <p>Take increasingly accurate measurements in standard units, using a range of chosen equipment.</p>	<p>Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams.</p> <p>Specialised equipment is used to take measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C), and measuring tapes (millimetres, centimetres, metres).</p>	

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Innovate: Reporting and concluding Step 4 (30mins)	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models).	Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams.	
Innovate: Reporting and concluding Step 5 (1hour)	Use test results to make predictions to set up further comparative and fair tests.	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected.	Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions	

Links within other projects:	Learning Objective	Skills	Knowledge
Geography: Sow, Grow and Farm Allotment Life Lesson 1: Allotment Habitat	Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.	Describe, using their knowledge of food chains and webs, what could happen if a habitat had a living thing removed or introduced.	Population changes in a habitat can have significant consequences for food chains and webs. A food web is a set of interconnected food chains that show how animals rely on plants and other animals for food.
Geography: Sow, Grow and Farm Allotment Life Lesson 2: Animal Life Cycles	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	Compare the life cycles of animals, including a mammal, an amphibian, an insect and a bird.	A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages: embryo, juvenile, adolescent and adult. Amphibians' life cycles include the stages: egg, larva (tadpole), adolescent and adult. Some insects' (butterflies, beetles and bees) life cycles include the stages: egg, larva, pupa and adult. Birds' life cycles include the stages: egg, baby, adolescent and adult.

<p>Geography: Sow, Grow and Farm</p> <p>Allotment Life Lesson 3: Plant Life Cycles</p>	<p>Describe the life process of reproduction in some plants and animals.</p>	<p>Group and sort plants by how they reproduce.</p> <p>Describe the life process of reproduction in some plants and</p>	<p>Flowering plants reproduce sexually. The flower is essential for sexual reproduction. Other plants reproduce asexually. Bulbs, corms and rhizomes are some parts used in asexual reproduction in plants.</p> <p>Reproduction is the process of producing offspring and is essential for the continued survival of a species. There are two types of reproduction: sexual and asexual. Sexual reproduction involves two parents (one female and one male) and produces offspring that are different from the parents. Asexual reproduction involves one parent and produces offspring that is identical to the parent.</p>
<p>Geography: Sow, Grow and Farm</p> <p>Allotment Life Lesson 4: Dissection</p>	<p>Describe the life process of reproduction in some plants and animals.</p>	<p>Label and draw the parts of a flower involved in sexual reproduction in plants (stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal)</p>	<p>Parts of a flower include the stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal. Pollination is when the male part of a plant (pollen) is carried, by wind, insects or other animals, to the female part of the plant (carpel). The pollen travels to the ovary, where it fertilises the ovules (eggs). Seeds are then produced, which disperse far away from the parent plant and grow new plants.</p>
<p>Geography: Sow, Grow and Farm</p> <p>Allotment Life Lesson 5: Growing</p>	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>	<p>Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding.</p>	<p>A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.</p>
<p>Geography: Sow, Grow and Farm</p> <p>Growing and Farming in the UK Lesson 4: Impact on modern farming</p>	<p>Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.</p>	<p>Research and describe different farming practices in the UK and how these can have positive and negative effects on natural habitats. Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.</p>	<p>Farming in the UK can be divided into three main types: arable (growing crops), pastoral (raising livestock), mixed (arable and pastoral). Intensive farming in the past has resulted in the loss of habitats.</p> <p>Modern farming methods, such as excessive tillage, monoculture, removal of hedgerows, use of synthetic fertilisers and chemical pesticides, irrigation technologies and autumn planting, all impact on wildlife and the natural environment.</p>

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Gaps:

- Term and concept of gestation
- Creating scatter graphs
- Life cycle of other animals that aren't mammals.

Key Vocabulary:

acne	compare	evidence	human	mammal	positive	reptile	sweat
adolescent	conception	fallopian tube	hygiene	menopause	correlation	research	table
adult	conclusion	female	infant	metamorphosis	prediction	results	test
ageing	correlation	fertilisation	insect	method	process	review	testicle
aggression	data	findings	investigation	mood swing	puberty	scatter graph	umbilical cord
amphibian	describe	fish	juvenile	negative	pubic hair	self-esteem	urethra
anomaly	deterioration	foetus	larva	correlation	pupa	semen	uterine lining
bird	development	gestation	life cycle	observe	question	sexual	uterus
birth	diagram	growth	lifespan	offspring	reaction time	reproduction	vagina
blastocyst	egg	growth spurt	line graph	ovary	record	sexually mature	variable
breast	embryo	hatching	line of best fit	pattern	reproduction	sperm	vertebrate
cell	emotion	hormone	male	penis	reproductive	spreadsheet	warm blooded
cold blooded	equipment			period	organ	stage	
					reproductive system		