Year: 4 Term: 1a Cornerstones Unit: Food and the Digestive System

National Curriculum Progression

Y1	Y2	Y3	Y4	Y5	Y6
Animals, including Humans i. identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals ii. identify and name a variety of common animals that are carnivores, herbivores and omnivores iii. describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) **Animals, including Humans** iv. identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**Living things and their Habitats** i. explore and compare the differences between things that are living, dead, and things that have never been alive ii. 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 iii. identify and name a variety of plants and animals in their habitats, including microhabitats iv. 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. **Animals, including Humans** i. notice that animals, including humans, have offspring which grow into adults ii. find out about and describe the basic needs of animals, including humans, for survival (water, food and air) iii. describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Animals, including Humans** i. 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 **Animals, including Humans** i. 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 ii. identify that humans and some other animals have skeletons and muscles for support, protection and movement.	**Living things and their Habitats** i. recognise that living things can be grouped in a variety of ways ii. explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment iii. recognise that environments can change and that this can sometimes pose dangers to living things. **Animals, including Humans** iii. construct and interpret a variety of food chains, identifying producers, predators and prey. **Animals, including Humans** i. describe the simple functions of the basic parts of the digestive system in humans ii. identify the different types of teeth in humans and their simple functions	**Living things and their Habitats** i. describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird ii. describe the life process of reproduction in some plants and animals. **Animals, including Humans** i. describe the changes as humans develop to old age.	**Living things and their Habitats** i. 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 ii. give reasons for classifying plants and animals based on specific characteristics. **Evolution and Inheritance** i. recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago ii. recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents iii. identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. **Animals, including Humans** i. identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood ii. recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function iii. describe the ways in which nutrients and water are transported within animals, including humans

Scientific Enquiry Skills

Asking Questions	Investigating	Gathering and Recording Data	Presenting and Analysing Findings
♣ 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.

Key Vocabulary – Unit Specific	Key Vocabulary – Scientific Enquiry
food chains – animals, habitat, producer, green plant, primary consumer **(prey),** secondary consumer **(predator/prey),** tertiary consumer **(predator) – construct, interpret** **habitats change over time - natural influence, human influence, extreme weather, unseasonable weather, habitat destruction, pollution, risk, environmental change, impact - explain** **digestive system – mouth, oesophagus, stomach, rectum, digestion, chewing food, saliva,** stomach acid**,** small intestine**, nutrients, absorbed,** large intestine**, undigested waste, stored, excretion, anus - describe** **teeth - incisors, canines, premolars, molars, cutting, tearing, grinding, chewing, oral hygiene, teeth brushing, limiting sugary foods, dentist – identify, describe**	**questions, explain, scientific enquiry** **equipment - measuring tape, hand lens, trundle wheel, ruler, data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C), and metre sticks, rulers or trundle wheels (millimetres, centimetres, metres), accurate measurements** **observe, observations, compare, group, classify,feature, similarities, differences, make simple connections, measure, systematic** **tests, instructions, method, prediction, investigation, comparative test, fair test, variable, constant** **results, information, investigate, investigation, noticing patterns and relationships, conclusion, evidence** **record, data, table, charts, Venn diagram, labelled diagrams, graphs, timeline, key, explain**

	Conceptual Learning Goals - Core Knowledge	Procedural Learning Goals - Skills
Substantive Knowledge	a. Know that food chains show what animals eat within a habitat. All food chains start with a producer, which is typically a green plant. The producer is eaten by a primary consumer (prey), which is eaten by a secondary consumer (predator/prey), which is eaten by a tertiary consumer (predator). b. Know that habitats change over time, either due to natural or human influences. Natural influences include extreme or unseasonable weather. Human influences include habitat destruction or pollution. These changes can pose a risk to animals and plants that live in the habitat. c. Know that the main parts of the digestive system are the mouth, oesophagus, stomach, and rectum. The mouth starts digestion by chewing food and mixing it with saliva. The oesophagus transports the chewed food to the stomach, where it mixes with stomach acid and gets broken down into smaller pieces. In the small intestine, nutrients from the food are absorbed by the body. In the large intestine, water is absorbed by the body. The remaining undigested waste is stored in the rectum before excretion through the anus. d. Know that there are four different types of teeth: incisors, canines, premolars and molars. Incisors are used for cutting. Canines are used for tearing. Premolars and molars are used for grinding and chewing. e. Know that regular teeth brushing, limiting sugary foods and visiting the dentist are important for good oral hygiene.	a. Know how to construct and interpret a variety of food chains. b. Know how to explain how unfamiliar habitats can change over time and what influences these changes. c. Know how to describe the simple functions of the basic parts of the digestive system in humans d. Know how to identify the four different types of teeth in humans and describe their functions e. Know how to look after teeth and describe what damages them.
Disciplinary Knowledge	f. Know that questions can help us find out about the world and can be answered using scientific enquiry. g. Know that equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C), and metre sticks, rulers or trundle wheels (millimetres, centimetres, metres). h. Know that scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant. i. Know that an observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time. j. Know that results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected. k. Know that data can be recorded and displayed in different ways, including tables, charts, timelines, keys, graphs and labelled diagrams.	f. Know how to ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them. g. Know how to make accurate measurements in standard units, using a range of equipment. h. Begin to know how to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately. i. Begin to know how to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections. j. Know how to use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions. k. Know how to gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).

Scientific Enquiries:

Observing changes Over Time	Noticing Patterns	Grouping and Classifying Things	Carrying out Simple Comparative and Fair Tests	Finding Things Out using Secondary Sources of Information
Toothpaste investigation	What would happen if … scenarios – changes in ecosytems	Record Food Chains	Compare functions of the 4 types of teeth Toothpaste investigation	What do we know about food chains? Research an ecosystem – living features (animals and plants), non-living features (landscape and climate) and threats by human and natural events What happens to food we eat? Ask an expert about teeth and oral hygeine

Assessment Criteria

Disciplinary Knowledge and Skills - using appropriate scientific language from the national curriculum:

- ask relevant questions and using different types of scientific enquiries to answer them
- setup simple practical enquiries, comparative and fair tests
- make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gather, record, classify and present data in a variety of ways to help in answering questions
- record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identify differences, similarities or changes related to simple scientific ideas and processes
- use straightforward scientific evidence to answer questions or to support their findings.

Substantiative Knowledge and Skills

- name and describe the functions of the main parts of the digestive system
- construct and interpret food chains
- explain how environmental changes may have an impact on living things

Resources

- Range of information sources about habitats and ecosystems
- Teeth models (optional)
- Mirrors
- Teeth models, toothbrush and plaque disclosing tablets (optional)
- Range of information sources about teeth and oral hygiene (optional)
- Uncooked chickens' eggs
- Range of adult and children's toothpastes containing different percentages of fluoride, and at least one with no fluoride
- Beakers
- Measuring cylinders
- Distilled vinegar