Subject: Science	Unit Title: Animals including humans	Year Group: 3	Half-Term: 3

National Curriculum Links:
(Link to TT statements)

- Identify that humans and some other animals have skeletons and muscles for support, protection and movement.
- 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.

Precise Knowledge:
(*What is the child language knowledge that you want the children to know? Link to KARM cards/ classroom displays)*

Animals, unlike plants which can make their own food, need to eat in order to get the nutrients they need. Food contains a range of different nutrients – carbohydrates (including sugars), protein, vitamins, minerals, fats, sugars, water – and fibre that are needed by the body to stay healthy. A piece of food will often provide a range of nutrients.

Humans, and some other animals, have skeletons and muscles which help them move and provide protection and support.

Precise Skills:
(What is the child language skills that you want the children to be able to show?)

- Can name the nutrients found in food
- Can state that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients
- Can name some bones that make up their skeleton, giving examples that support, help them move or provide protection
- Can describe how muscles and joints help them to move
- Can classify food into those that are high or low in particular nutrients
- Can answer their questions about nutrients in food, based on their gathered evidence
- Can talk about the nutrient content of their daily plan
- Use their data to look for patterns (or lack of them) when answering their enquiry question
- Can give similarities e.g. they all have joints to help the animal move, and differences between skeletons

Possible Misconceptions:
(Combat misconceptions early, plan ahead for potential errors in the classroom and analyse what misunderstandings may occur that could potentially prevent learners from fully grasping a concept)

Some children may think:

- certain whole food groups like fats are 'bad' for you
- certain specific foods, like cheese are also 'bad' for you
- diet and fruit drinks are 'good' for you
- snakes are similar to worms, so they must also be invertebrates
- invertebrates have no form of skeleton.

Key Vocabulary *(Think about the link to KARM cards and classroom display)*	**Tier 1** *(everyday, commonly used)*	**Tier 2** *(academic, across topics and content)*	**Tier 3** *(subject specific)*
	Nutrition, nutrients, water, skeleton, bones, muscles, joints, support, protect, move,	skull, ribs, spine, carbohydrates, sugars, protein, vitamins, fibre, fat	minerals

Prior Learning:
(What has gone before that links to this unit learning that needs reactivating prior to building to the new learning? KARM cards)

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals, including humans)
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals, including humans)
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans)
- Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (Y2 - Animals, including humans)
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)

Future Learning:
(Where is this learning building to? Identify the next learning intentions so appropriate references can be made whilst teaching the unit.)

Linked Texts: *(Steps to Read, Guided Reading, Reading Spine)*	**LOTC Opportunities:**	**Potential Visits/Visitors**	**Education for a Connected World:** *(Online safety etc)*

Lesson Objective /Outcome Know/Show	**Metacognition and Self-Regulated Learning**		**Questioning**	**Personal Development Connections**
	Retrieval Practice	**Instruction**		

Lesson 1 **Know** Know what constitutes a healthy diet (including understanding calories and other nutritional content). 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.	There are five main food groups that should be eaten regularly as part of a balanced diet: fruit and vegetables; carbohydrates (potatoes, bread, rice and pasta); proteins (beans, pulses, fish, eggs and meat); dairy and alternatives (milk, cheese and yoghurt) and fats (oils and spreads). Foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet. Humans have to get nutrition from what they eat. It is important to have a balanced diet made up of the main food groups, including proteins, carbohydrates, fruit and vegetables, dairy products and alternatives, and fats and spreads. Humans need to stay hydrated by drinking water.	Discuss with the children the phrase 'healthy, balanced diet'. Explain that we can divide foods into groups according to the nutrients that they provide. Share the Healthy, balanced diet presentation with the children to introduce the food groups and the Eatwell guide. Give pairs of children the Food groups sorting cards to sort into the five food groups: proteins; carbohydrates; fruit and vegetables; dairy and alternatives and oils and spreads. Discuss their groupings and correct any misconceptions.		*(Highlight and annotate where appropriate)* Display opportunities/working wall SMSC (IN. CIA) BV EDI
Lesson 2 Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	Plants and animals are living things. Plants have different parts to help them survive and reproduce, including roots, stems, flowers, fruit and leaves. Plants	Provide children with the What I know about template and give them time to work individually, in pairs or in small groups to add notes, keywords or phrases to each of the sections. Invite children to share their notes under each of the headings and encourage discussion and debate and address initial misconceptions. Share the Facts about living		*(Highlight and annotate where appropriate)* Display opportunities/working wall SMSC (IN. CIA)

Gather, record, classify and present data in a variety of ways to help in answering questions.	need sunlight, warmth, nutrients, water, air and space to grow and be healthy. There are six main animal groups: amphibians, birds, fish, invertebrates, mammals and reptiles. Animals can be carnivores that eat meat, herbivores that eat plant parts or omnivores that eat meat and plant parts. All animals, including humans, need food, water, air, shelter, sleep and space to reproduce and survive. Animals, including humans, have different body parts with different functions. Some body parts, such as eyes and ears, help animals to sense their surroundings.	things presentation, with children adding additional notes to their templates as they watch. To finish the lesson, provide small groups or pairs of children with the Facts about living things quiz to complete together. A Facts about living things answer sheet is provided for them to mark their work.		BV EDI
Lesson 3 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. Ask relevant questions and using different types of scientific enquiries to answer them.	Nutrition is the life process of making or finding food to eat. Nutrition allows plants and animals to grow, stay healthy, and survive. Humans are omnivores. The fossils of ancient humans' teeth show that humans have always been omnivores. Today, some humans	Revisit the definitions of carnivore, herbivore and omnivore and ensure children are clear on the differences. Show children the What animals eat video and after viewing, discuss the different characteristic features of familiar carnivores, herbivores and omnivores. Encourage children to consider how we know that humans are omnivores based on our features using information from the video to support their thinking. Discuss what an omnivorous diet means for humans, then share the Human diet presentation. After sharing, ask, 'Do you have any questions about the human diet that you'd		*(Highlight and annotate where appropriate)* Display opportunities/working wall SMSC (IN. CIA) BV EDI

	choose not to eat an omnivorous diet but follow a vegetarian or vegan diet. Humans can suffer from malnutrition, meaning poor nutrition, if they do not eat the right amounts and the right types of food. Malnutrition can cause health problems.	like to answer?' Stimulate good questioning by giving some examples, then invite children to write questions on sticky notes. Support them in choosing a question to research before providing them with a wide range of information sources to find the answer. Work with small groups to help them carry out their research, then encourage them to write an answer to their scientific question for display.		
Lesson 4 Set up simple practical enquiries, comparative and fair tests.	Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge.	Explain to the children that they are going to carry out a test to compare the fattiness of different foods. Show them the foods they will be testing, referring to the practical resources, and ask them to make initial predictions based on their prior knowledge, ranking the foods from most to least fatty and recording their predictions in the first column of the table on the Fatty foods recording sheet. After predicting, provide children with the Fatty foods investigation. Support them in carrying out the tests and recording their observations on their recording sheets. Bring the children together and discuss their results before asking them to complete the questions on their recording sheets.		*(Highlight and annotate where appropriate)* Display opportunities/working wall SMSC (IN. CIA) BV EDI
Lesson 5 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.	In the UK, wild animals' diets change during the year. What they eat depends on the season because certain foods become available and unavailable in different seasons. Usually, food becomes available in	Revisit the terms carnivore, herbivore and omnivore and invite children to share animals, including pets, in each group, how they know and what they eat. Explain that in the wild, animals' diets change over the year as the seasons change due to certain foods becoming available or unavailable. Provide children with one of the Seasonal changes in animals' diets information sheets and the Seasonal changes in		*(Highlight and annotate where appropriate)* Display opportunities/working wall SMSC (IN. CIA) BV EDI

	the spring and abundant in summer, when many animals eat a lot to prepare for the lack of food in autumn and winter. Animals can hibernate, use their fat reserves, store and hide food, or migrate to warmer climates to find food to survive winter. Animals cannot make their own food and need to get nutrition from the food they eat. Carnivores get their nutrition from eating other animals. Herbivores get their nutrition from plants. Omnivores get their nutrition from eating a combination of both plants and other animals.	animals' diets recording sheet. Challenge them to use the information to complete the table on their recording sheet. Model this if needed before the children start. After completing their recording sheets, pair children up who studied different animals and encourage them to share their findings. Provide them with A3 copies of the Venn diagram template to record similarities and differences between the two studied animals, again modelling this if needed before they start their comparisons. Invite children to share their observations and comparisons with the class, encouraging them to use appropriate vocabulary.		
Lesson 6 Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Describe how humans need the skeleton and muscles for support, protection and movement.	Humans have a skeleton and muscles for movement, support and protecting organs. Major bones in the human body include the skull, ribs, spine, humerus, ulna, radius, pelvis, femur, tibia and fibula. Major muscle groups in the human body include the biceps,	Display the The human skeleton picture card and ask, 'Do you know what this picture shows?' Invite children to share their knowledge of skeletons and bones, then share the The human skeleton presentation to help them learn more about the major bones and their important functions. Provide pairs of children with a set of Skeleton word cards printed onto sticky labels and challenge them to label the location of their bones. Invite them to share their labelling and take photographs as a record. Correct any errors, then provide each child with a The human skeleton		*(Highlight and annotate where appropriate)* Display opportunities/working wall SMSC (IN. CIA) BV EDI

	triceps, abdominals, trapezius, gluteals, hamstrings, quadriceps, deltoids, gastrocnemius, latissimus dorsi and pectorals. A skeleton is a frame of bones that supports the body and gives it shape. Most vertebrates have a similar skeleton with many of the same bones. However, the position and size of the bones vary in each skeleton.	recording sheet to complete. A The human skeleton answer sheet is also provided to mark their work. **Note:** If possible, provide pairs of children with a short length of antler, which is real bone. Encourage them to use a hand lens or digital microscope to examine the inside of the antler, observing the honeycomb pattern and recording by sketching. Ask, 'How hard and heavy is the antler? Can you break, squash or snap it? Can you suggest why it is so strong?'. Antler pieces can be bought from pet shops as dog chews and cut with a hacksaw.		
Lesson 7 Set up and carry out some simple, comparative and fair tests, making predictions for what might happen.	A joint is a place where two or more bones meet and connect. The human skeleton, and the skeletons of other animals, have many bones connected by joints to easily move and bend parts of the body in different directions. Parts of a joint include cartilage, synovial fluid and ligaments. Three types of joints found in the human skeleton are the hinge joint, ball and socket joint and pivot joint. Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an	Ask, 'Why do we have lots of smaller bones in our body rather than single, long bones?' and encourage the children to share their thoughts. Explain that smaller bones help a skeleton bend and be flexible, and the place where bones meet and connect is known as a joint. Share the Joints video to help them learn more and discuss some of their learning. Provide the children with the Joints investigation, and discuss the steps in each test. Encourage them to carry out the tests independently in pairs or small groups, recording their observations on the Joints recording sheet and then answering the questions provided. Invite the children to share their experiences, observations and answers, and relate their learning to real-life examples of the need for joints for humans and other animals. The children can use the Joints answer sheet to check their work.		*(Highlight and annotate where appropriate)* Display opportunities/working wall SMSC (IN. CIA) BV EDI

	investigation based on some prior knowledge.			
Lesson 8 Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Humans have a skeleton and muscles for movement, support and protecting organs. Major bones in the human body include the skull, ribs, spine, humerus, ulna, radius, pelvis, femur, tibia and fibula. Major muscle groups in the human body include the biceps, triceps, abdominals, trapezius, gluteals, hamstrings, quadriceps, deltoids, gastrocnemius, latissimus dorsi and pectorals. Muscles are soft tissues made up of many stretchy fibres. They allow humans to move, breathe and digest food. There are three main types of muscle in the human body: smooth muscle, skeletal muscle and cardiac muscle. Smooth muscles are in organs. Skeletal muscles are attached to the skeleton, working in pairs to pull bones, making them move. Cardiac muscles are in the heart.	Share the video from BBC Teach How do muscles and bones work?, which recaps on facts about bones and joints before introducing muscles and how they generate movement at the joints. Discuss how muscles work in pairs and see if the children can recall the muscle pair mentioned in the video. Share the Muscles recording sheet and invite them to identify the muscle pairs in the diagram provided and identify the movements they bring about. Encourage them to model the movements on their bodies, feeling the muscles relax and contract and naming them as they do so. Encourage the children to record their findings in the table provided then share the Muscles presentation to help them learn more about the muscular system.		*(Highlight and annotate where appropriate)* Display opportunities/working wall SMSC (IN. CIA) BV EDI
Lesson 9 Identify that humans and some other animals have skeletons and	Vertebrates are animals with a spine. Invertebrates are animals	Share and discuss the Skeleton types presentation, which introduces the children to different skeleton types and the advantages and disadvantages of each.		*(Highlight and annotate where appropriate)*

muscles for support, protection and movement. Identify and group animals that have no skeleton, an internal skeleton (endoskeleton) and an external skeleton (exoskeleton).	without a spine. All vertebrates have an endoskeleton meaning their skeleton is found inside their body. Invertebrates have an exoskeleton or no skeleton. An exoskeleton, which means 'outside skeleton', is a hard outer layer that covers the outside of most invertebrates' bodies and protects their soft body parts inside. Some animals have skeletons for support, movement and protection. Endoskeletons are those found inside some animals, such as humans, cats and horses. Exoskeletons are those found on the outside of some animals, such as beetles and flies. Some animals have no skeleton, such as slugs and jellyfish.	Give each child a copy of the Skeleton types cut outs and the Skeleton types recording sheet and ask them to prepare the picture cards ready for sorting. Play the Skeleton types video and encourage the children to observe the body and movements of each animal before sorting the picture cards onto the table provided. Discuss the children's sorting and reasoning for their choices and use the Skeleton types answer sheet to help them mark their work. Ask the children to complete the tasks and the final question on their recording sheets, sharing their answers at the end of the session. **Note:** To consolidate their understanding of invertebrate skeleton types, children could use hand lenses and digital microscopes to observe, sketch and sort a range of invertebrates. Invertebrates can be collected from outside or bought from pet shops as live animal feed, such as earthworms, snails, centipedes, woodlice, grasshoppers and crickets. Remember to return invertebrates outdoors at the end of the session.		Display opportunities/working wall SMSC (IN. CIA) BV EDI

End of Unit Assessment	
Essay	*(Provide the Assessment that will be used for the end of unit assessment – it may be a mix of the examples down the left-hand side – consider the age-range of the children)*
Double-Page Spread	
End Outcome	
Clozed Passage	