Year 3
Humans and other animals

Background Knowledge

Animals, unlike plants which can make their own food, need to eat in order to get the nutrients they need. Foods contain a range of different nutrients – carbohydrates (including sugars), protein, vitamins, minerals, fats, sugars, water and fibre that are all needed to keep the body 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.
Common misconceptions

- 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 be invertebrates.
- Invertebrates have no form of skeleton.

See https://www.hamilton-trust.org.uk/science/year-3-science/animals-including-humans-keeping-healthy/

What children should know/can do

- I can name the parts of the human body I can see.
- I can link the correct part of the human body to each sense.(Year 1)
- I can describe what animals and humans need to survive.
- I can describe why exercise, a balanced diet and good hygiene are important for animals. (Year 2)

National Curriculum objectives	Children's objectives
• 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 • identify that humans and some other animals have skeletons and muscles for support, protection and movement	I can explain the importance of a nutritious balanced diet. I can name different parts of a human skeleton. I can explain and describe the skeletal system a human. I can explain the function of muscles. I can describe the purpose of a skeleton in humans and animals.
<u>Scientific enquiry</u> Asking relevant questions and using different types of scientific enquiries to answer them Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, 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 Using results to draw simple conclusions.	I can ask relevant scientific questions using a range of question stems. I can use my observations and prior knowledge to answer scientific questions. I can think of further questions having completed an enquiry. I can set up a simple scientific enquiry to answer a question. I can measure accurately using standard units. I can use different methods to represent my data including tables and simple bar charts. I can explain my findings both orally and in writing. I can draw simple conclusions.

Assessment

1. Can you make/ draw a skeleton and name some of the bones?
2. Why do we have a skeleton?
3. What are vertebrates and invertebrates? Can you say how their skeletons may differ?
4. Can you explain how your arm can move up and down?
5. Did you find out a pattern in your enquiry? Why might this be the case?
6. Can you sort foods into different groups?

Working Towards	ARE	Exceeding
I can name several bones in the human skeleton including the skull, spine and ribs and name one of its functions. I can sort animals into vertebrates and invertebrates. I know that muscles are needed for movement. I can sort foods into different groups with support. I can work as part of a group to carry out a pattern seeking enquiry recording my results in a simple table. I can explain orally what I have found out.	I can name the main bones in the human skeleton and explain its functions. I can describe the skeletons of different animals including some invertebrates. I know that muscles are needed for movement and explain how they work in pairs. I can sort foods into different groups and explain the need for a balanced diet. I can pose a question to investigate. I can carry out a pattern seeking enquiry recording my results clear and explain if a pattern is evident.	I can name the main bones in the human skeleton and explain its functions confidently. I can describe the skeletons of different animals including some invertebrates and explain how they move. I know that muscles are needed for movement and explain how they work in pairs giving an example. I can sort foods into different groups confidently and use this information to construct a balanced meal explaining its importance. I can pose a question to investigate and suggest the type of investigation that needs to be carried out to answer it. I can carry out a pattern seeking enquiry confidently recording my results clearly in both tables and bar charts and explain if a pattern is evident giving reasons for this.

Key Vocabulary	
Contract- the action of muscles getting shorter. Relax- the action of muscles getting longer. Tendon- connects the muscle to the bone. Joint- place where two bones meet. Bone- hard material that makes the skeleton. Muscle- part of the body that creates movement in an animal. Skeleton- the supportive or protective structure of an animal. Endoskeleton- skeleton is inside the animal. Exoskeleton- skeleton on the outside of the animal. Vertebrates- animals with backbones. Invertebrates- animals without backbones. Herbivores- animals that eat plants. Carnivores- animals that eat meat.	Omnivores- animals that eat animals and plants. Balanced diet- a diet consisting of a variety of foods providing all the nutrients necessary for good health. Nutrient- a substance necessary for health and growth. Spine- the backbone. Skull- the bones protecting the brain. Ribs- the bones protecting your heart and lungs. Pattern seeking- to find a pattern in your results. Measure – to see find out the amount something is. Bar chart – a way of displaying information Investigation – to find something out Result – to record what we have found out Conclusion; To look at our results and explain what we have found out.

Character opportunities	Possible STEM careers linked to unit
Curiosity - asking questions about the world around them Kindness and respect - recognition that not everyone looks the same	Dietician (develops nutritional advice) Dentist (looks after teeth and gums Biomedical engineer (designs biomedical equipment including artificial limbs and organs)

Lesson objectives	Working scientifically	Activities See https://www.hamilton-trust.org.uk/science/year-3-science/animals-including-humans-keeping-healthy/ for all resources
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.	Gather, record, classify and present data in a variety of ways to help answer questions. Record findings using simple scientific language, bar charts, and tables	Get introduced to clients in need of advice on diet, health and exercise and take on the task of becoming a personal trainer (see link above).Tabulate, draw graphs and analyse data from a survey of their client's diet and use it to answer questions.
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.	Gather, record, classify and present data in a variety of ways to help in answering questions. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Continue on the quest as personal trainers by becoming experts on nutrition. Use knowledge of food groups and a balanced diet to design healthy meals by creating lifelike models of food on paper plates.
Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Ask questions and finding answers	This session you will become an expert on bones, joints and skeletons, acquiring scientific vocabulary and understanding whilst playing games and building your very own dancing skeleton string puppet.

Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Gather, record, classify and present data in a variety of ways to help in answering questions. Use straightforward scientific evidence to answer questions or to support findings - pattern seeking enquiry.	Learn how muscles work in pairs and investigate the question 'Do people have stronger muscles because they use them more?' Make predictions, gather data, discuss, display and interpret findings.
Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Set up simple practical enquiries and comparative and fair tests. Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Learn how the diaphragm is used in breathing and build an instrument to measure lung capacity. Plan and carry out an investigation to answer a health and fitness question.

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.	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Identify differences, similarities or changes related to simple scientific ideas and processes.	Test and review all your knowledge on Health and Fitness gained so far. Then it's time to make final preparations before meeting your clients to answer all their Health and Fitness questions in an impressive presentation illustrated with the fabulous research and resources you've produced.
Understand that some animals do not have a skeleton	Gather, record, classify and present data in a variety of ways to help in answering questions	Make a fact file on animals without skeletons