Brough Primary School – Curriculum Intention Plan 2024 - 2025

Subject: Science **Year Group:** Year 3/4	**Area of learning:** Animals including Humans – nutrition, skeleton and muscles.
Links to previous work/Remember when	The children who are now in Year 4 learnt about the digestive system in humans last year, including how we digest food. They also learnt about the different types of teeth and their simple functions. They also spent time learning about food chains and the relationships between producers, predators and prey. The children in Year 3 spent time learning about common animals that would be found in the local environment, the basic parts of the human body, their senses and what the basic needs of all animals are for survival. They also spent time looking t the importance of exercise and nutrition for plants. In the previous unit in the autumn term, all children grouped living things in a variety of ways and explored classification keys, to help group, identify and name a variety of living things. They recognised that environments can change and that this can sometimes pose dangers to living things. This knowledge should be reviewed before starting the new learning to ensure children can recall prior learning/vocabulary. <u>Working Scientifically</u> In the last unit of work in the autumn term, children had experience of asking questions, setting up simple enquiries and making systematic and careful observations. They recorded their findings in a variety of ways and were given opportunity to identify differences and similarities with scientific ideas and processes.

Term	**Year 3/4**	**Key Skills to be taught**
Spring 2025 What the children should know at the end of this series of lessons		● 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. <u>Working Scientifically</u> ● 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.

Vocabulary
Herbivore, carnivore, omnivore, nutrition, diet, food chain, data, table, bar chart, carbohydrates, proteins, dairy, fats, sugars, vitamins, minerals, fibre, growth, repair, health, energy, vertebrate, invertebrate, endoskeleton, hydroskeleton, exoskeleton, bone, skeleton, skull, ribcage, pelvis, femur, muscles, joints, tendons, contract, relax, biceps, triceps, data, scattergram.

Sequence of learning	Learning objective/outcome	Suggested lesson outline
1 Start with the Explorify 'Odd one out' using 'What's for dinner'. Explore what the children know about these foods.	**Learning Objective:** I can 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. **Key Knowledge:** All animals including humans need the right types of food. Some living things are carnivores, some are herbivores and some are omnivores. Foods that we need to understand are carbohydrates, protein, fibre, fats, vitamins, minerals and water. **Working scientifically** i). Asking relevant questions and using different types of scientific enquiries to answer them	**Recap –** Can you remember from earlier work, what all living things do? (MRS GREN). Look together through the starter questions about nutrition. [Film clips on Animal diets and Food Chains (useful revision)](#) **Nutrients and food groups** Living things need food to grow, to be strong and to stay healthy. Animals cannot produce their own food, so must hunt, gather and grow their food. We can sort food into different food groups. Once we know what food groups different foods are in, we can also look at the nutrients represented by each group. *Children cut out and stick the foods on to the relevant section of the Eatwell guide. Discuss any foods that were tricky. In the second activity, children compare two meals, identifying the food groups in each meal and the*

		nutrients they provide. As a challenge, children could decide which was healthier and how to improve the other meal to make it more healthy.
2	**Lesson Objective:** I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. **Key knowledge:** Animals that have backbone are called vertebrates, and those without are called invertebrates. The different types of skeletons are - endoskeleton, hydrostatic skeleton and exoskeleton. We have an endoskeleton. Which type of Skelton an animal has dictates how it moves. **Working Scientifically** i). making systematic and careful observations	**Recap –** Without looking in your books, what can you remember about staying healthy? Can you remember any of the food groups and what nutrients they contain? **Vertebrates, invertebrates and types of skeletons** Remind children about invertebrates and vertebrates. Look at a selection of animals which are invertebrates and invertebrates and sort them into groups. Look at types of skeletons. (, hydro and exo). Move on to look at how different types of skeletons allow movement. *Children complete sorting activity for vertebrates and invertebrates. Children complete a sorting skeleton activity before agreeing together the advantages and disadvantages of each type.*
3&4	**Lesson Objective:** I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. **Key knowledge:** Our skeleton enables us to stand up, move around and we wouldn't be able to eat or drink. Our skeleton protects our organs, allows movement and supports the body. Some bones in the human body are the skull, clavicle, scapula, ribcage, vertebrae, humorous, ulna, radius, femur, tibia, fibula. **Scientific Investigation**	**Recap –** What can you remember about the types of skeletons that we learnt about in the last lesson. Can you name any animals with an endoskeleton, exoskeleton and hydroskeleton? **The human skeleton** Consider how the human skeleton protects the human body. An adult has 206 different bones, 56 of these being in the hands and wrists. We have three different joints (were bones meet). They are ball and socket, hinge and gliding. Explore together the names of some of the common bones. In the second part of the lesson investigate if the length of the femur makes a difference to how far people can jump. Work through the

	- 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 - recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. - using straightforward scientific evidence to answer questions or to support their findings.	investigation planning process, discussing how to keep the test fair, and how many variables should be changed. Record everyone's femur length then go on to measuring the jumps. *Children complete a planning sheet to identify the dependent and independent variables. They will also make a prediction to see what they think prior to the test. Children record the length of each other's femur and the distance each person jumps. Children order their results. Children decide what the investigation results tell us.*
5	**Learning Objective:** To identify that humans and some animals have skeletons and **muscles for support, protection and movement.** **Key knowledge:** Voluntary muscles are muscles which we chose to move. Involuntary muscles are muscles that work without you thinking about it. Skeletal muscles – brain moves, smooth muscles and cardiac muscles brain doesn't need to send a message. Skeletal muscles work in pairs – once contracts while the other expands. **Scientific Investigation** using straightforward scientific evidence to	**Recap –** Types of skeletons and vertebrates and invertebrates. What bone names can you remember? Where are they on your skeleton? **Muscles for support, protection and movement** Look at muscles in detail. Discuss voluntary and involuntary muscles and look at examples of each one. Why, for example, are the cardiac muscles involuntary? Look at how muscle examples work; use animations and real life examples with the children modelling. [Film clip showing how muscles work in pairs](#) from www.bbc.co.uk. *Children make a moving arm model and then record a diagram of a moving muscle. Finally, children write a description of how a muscle works using target vocabulary.*

	answer questions or to support their findings.	
6	**Learning Objective:** To demonstrate what has been learnt about animals including humans.	**ASSESSMENT LESSON** Children will complete an assessment task, which could be summative, or it could be a quiz style assessment or written task which draws on the knowledge learnt.

Learning Outcome/product
Children will know the food groups and the types of nutrients that is found in each group. They will know the different types of skeletons and the importance of the human skeleton. They will know the names of some of the bigger bones in the human body. They will know how the skeleton and muscles support, protect and allow movement.

Assessment records	**List only those children who have not achieved the expected outcomes.**