Brough Primary School – Curriculum Intention Plan 2022 - 2023

<table>
<tr><td colspan="2">Subject: Science
Year Group: Year 3/4</td><td>Area of learning: Animals including Humans – nutrition, skeleton and muscles.</td></tr>
<tr><td>Links to previous work/Remember when</td><td colspan="2">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.</td></tr>
<tr><td>Term</td><td>Year 3/4</td><td>Key Skills to be taught</td></tr>
<tr><td>Spring 2023

What the children should know at the end of this series of lessons</td><td></td><td>• 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</td></tr>
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		• 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, bone, skeleton, skull, ribcage, pelvis, femur, muscles, joints, tendons, contract, relax, biceps, triceps, data, scattergram.

Sequence of learning	**Objectives and suggested details provided by subject leader.**
1	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). Gather, record, classify and present data in a variety of ways to help answer questions. iii). Record findings using simple scientific language, bar charts and tables. • Understand that animals (including humans) can be grouped according to what they eat. • Answer questions on diet by extracting data from a food survey and displaying it in tables and bar charts. • Look for patterns and trends in the data and use this to ask further questions. • Use survey data to answer questions and display it in the form of tables and bar charts. • Look for trends and patterns in the data. Activities 1. Play an active game to reinforce vocabulary and understanding of animal feeding categories. 2. Review data from a food survey to answer a question on either sugar intake or 5 a day portions. 3. Display data in tables and bar charts and use these to look for patterns and trends.

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	Year 3 - Count how many portions of fruit and vegetables their client has each day. Draw a bar graph. **Year 4** - Calculate number of spoonsful of sugar are consumed each day and draw a graph with a suitable scale. Weblinks Film clips on Animal diets and Food Chains (useful revision) from www.bbc.co.uk
2	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). Gather, record, classify and present data in a variety of ways to help answer questions. iii). Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Classify different foods according to their group (e.g. carbohydrates, proteins, dairy and fats). • Know the nutritional properties of each food group and the importance of limiting fats and sugars. • Use knowledge of nutrition and the Eatwell plate to design a balanced meal for a client. • Model the meal to display on a paper plate selecting appropriate materials and techniques. Activities 1. Create a collage of an Eatwell Plate in groups by sorting foods into categories. 2. Create a model of a balanced meal for a paper plate. 3. Use knowledge of nutrition to either make food labels or complete a sheet of health advice. **Year 3** - Work together with the year 4s to create model balanced meals. **Year 4** - Help create the model meals and write labels for each food group to explain its role in the body. Weblinks Brief film clip introducing some of the 5 different food groups from www.bbc.co.uk
3	i) Identify that humans and some other animals have skeletons and muscles for support, protection and movement. iii). Identify differences, similarities or changes related to simple scientific ideas and processes. • Understand that not all animals have an internal skeleton and that the presence of this is an important feature in classifying them. • Know that a skeleton is needed for support, protection and movement. • Learn and communicate knowledge of the skeleton through the construction of a string puppet with moving joints. Activities

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	1. Play themed games to learn associated knowledge and vocabulary (Yr3 &4). 2. Make a skeleton string puppet that has moving joints (Yr3 &4). 3. Reinforce knowledge by naming bones on the puppets (Yr3) or writing an explanatory script (Yr4). 4. Puppeteer a skeleton dance (Yr3 &4). Weblinks Film on human skeleton with skeletons of other animals shown from www.bbc.co.uk Film clip on invertebrate with exoskeletons from www.bbc.co.uk
4	i) Identify that humans and some other animals have skeletons and muscles for support, protection and movement ii). Gather, record, classify and present data in a variety of ways to help in answering questions. iii). Use straightforward scientific evidence to answer questions or to support their findings-pattern seeking enquiry. • Understand how muscles work in pairs to allow movement and maintain posture. • Investigate whether people who do more sport have stronger muscles. • Make decisions on what data to collect and how to tabulate it. • Interpret data using a scattergram. • Know the diaphragm is used in breathing and the lungs transfer oxygen to the blood. • Know that muscles need more oxygen to work hard and this affects breathing rate. Activities 1. Investigate how muscles work in pairs (biceps & triceps) using a bottle of water as a weight (Yr3&4). 2. Collect data to investigate the link between leg muscle strength and either the type of regular exercise (Yr 3) or the amount of regular exercise (Yr 4). 3. With guidance display data as a scattergram and use it to look for a pattern in the data (Yr3&4). Weblinks Film clip showing how muscles work in pairs from www.bbc.co.uk
5	ASSESSMENT LESSON • Complete the quiz assessment individually if that is deemed the best way of assessing the children's understanding. • Complete the quiz as a pair or small group to allow for discussion and shared thinking, if that is deemed the best way to assess knowledge. • Complete the quiz as a whole class prior to undertaking the next task.

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	• Using diagrams to help explain, reflect on their own life and suggest improvements that could be made to improve their health and fitness. Power Points for the quiz are on Google Drive.

Learning Outcome/product
Children will use the knowledge gained to help them answer the quiz assessment, thus demonstrating their knowledge in relation to nutrition, the skeleton and how joints in humans work.

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

Assessment records	**List only those children who have exceeded the expected outcomes.**

End of unit assessment question
E.g. What are the basic requirements of the human to keep it healthy, in terms of nutrition and exercise?