KS2: MEDIUM TERM PLANNER
Y6 Living things and their habitats

Pupils should be taught to:

- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals
- give reasons for classifying plants and animals based on specific characteristics

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships, and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping, and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

‘Working and thinking scientifically’ is described separately at the beginning of the programme of study but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read, spell, and pronounce scientific vocabulary correctly. During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes, and skills through the teaching of the programme of study content:
planning different types of scientific enquiries to answer questions, including recognising, and controlling variables where necessary
taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar, and line graphs
using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships, and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments.

Prior Learning:	**Future Learning:**
• Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats) • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats) • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats) • Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)	• Differences between species (KS3)

Key Questions (*show how content and concepts link*) **Differentiated** Learning Objectives	**Teaching and learning activities** *(linked directly to objectives)*	**Resources** (*to help pupils reach the learning objectives)*	**Written and non -written outcomes** (*assessment including homework's)*
1) What is the importance of Carl Linnaeus on the classification system? SCIENCE CAPITAL: *How does this lesson connect with children in my class? What famous scientist do you know that have interested you?* Science Working scientifically Skills:  Science Enquiry Type **Research**  *Living things can be formally grouped according to characteristics. Plants and*	**Science reasoning task: explorify: Odd one out** Take your turn - Explorify **Activity 1:** PowerPoint- about classification system. **Activity 2:** share facts about C.L **Activity 3:** Research about C.L **Activity 4:** write a biography using the research. **Misconception:** Some children may think: • all micro-organisms are harmful • mushrooms are plants.	**Activity 1:** PowerPoint **Activity 2:** Appliance pictures and Venn Diagram. **Activity 3-** Reading comprehension questions. **Activity 4-** Research and write C.L Biography.	**Assessment:** Pupils able to ask questions. **Homework:** Research key historical figures linked to classification.

animals are two main groups but there are other livings things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. Plants can make their own food whereas animals cannot. Animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates). Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms. Plants can be divided broadly into two main groups: flowering plants; and non-flowering plants.			
2) How can we develop a dichotomous key? (animal) SCIENCE CAPITAL: *How does this lesson connect with children in my class? What do you order?*	**Activity 1:** PowerPoint explain how dichotomous keys work, model key using characteristics. **Activity 2:** create keys using characteristics,	**Activity 1:** PowerPoint How to Make Dichotomous Keys **Activity 2:** various animals and list of characteristics	**Assessment:** Pupils able to identify key characteristics to help create questions.

How do you organise things in cupboards? Science Working scientifically Skills:  Science Enquiry Type **asking questions/classify** *Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other livings things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. Plants can make their own food whereas animals cannot. Animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates). Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms.*	**Misconception:** Some children may think: • all micro-organisms are harmful • mushrooms are plants.		

Plants can be divided broadly into two main groups: flowering plants; and non-flowering plants.			
3) How can we use dichotomous key for plants? SCIENCE CAPITAL: *How does this lesson connect with children in my class? What plants do you see around you? What characteristics do they share?* Science Working scientifically Skills:  Science Enquiry Type **Classify** *Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other livings things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. Plants can make their own food whereas animals cannot.*	**Science reasoning task: explorify: Odd one out** Important habitats - Explorify **Activity 1:** Go on local area walk and collect leaves **Activity 2:** PowerPoint- go through various features of leaves **Activity 3:** create dichotomous keys using key characteristics. **Misconception:** Some children may think: • all micro-organisms are harmful • mushrooms are plants.	**Activity 1:** local area walk map **Activity 2:** PowerPoint Leaf Classification **Activity 3:** templates for classification keys	**Assessment:** Are pupils able to use key characteristics to identify different trees? **Homework:** identify different trees and the characteristics of the leaves.

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4) What characteristics could we use to classify different species? SCIENCE CAPITAL: *How does this lesson connect with children in my class? What are the characteristics of your pet?* Science Working scientifically Skills: 	**Science reasoning task: explorify: Odd one out** Meadow feast - Explorify **Activity 1:** PowerPoint to understand the different characteristics and classification key. **Activity 2:** to discuss in TP different characteristics of chosen animals and to create dichotomous key. **Misconception:**	**Activity 1:** PowerPoint **Activity 2**: animal options and characteristics sheet.	**Assessment:** Able to explain the how the key works?

Science Enquiry Type **Classify** *Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other livings things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. Plants can make their own food whereas animals cannot.* *Animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates). Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups, including*	Some children may think: • all micro-organisms are harmful • mushrooms are plants.		

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5/6) **What are microorganisms?** SCIENCE CAPITAL: *How does this lesson connect with children in my class? Are different circuits useful for different things?* Science Working scientifically Skills:  Science Enquiry Type **Research/ observation /Asking questions/ comparative** *Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other livings things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. Plants can*	**Activity 1:** PowerPoint to explain microorganism **Activity 2:** classify good and bad microorganisms **Activity 3:** Washing hands experiment – spread of germ. Work in small groups to plan experiment. **Activity 4:** Setting up mould experiment. **Misconception:** Some children may think: • all micro-organisms are harmful • mushrooms are plants.	**Activity 1:** PowerPoint / **Activity 2:** Venn diagram and statements . **Activity 3:** Planning proforma	**Assessment:** Are pupils able to use scientific language to explain microorganism?

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