Curriculum Coherence – Year 2 Science

Term 1

PRIOR LEARNING/STARTING POINT:

Year 1

- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- identify and name a variety of common animals that are amphibians, reptiles, birds and mammals
- identify and name a variety of common animals that are carnivores, herbivores and omnivores
- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)
- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense

INTENT

KNOWLEDGE

-Explore and compare the differences between things that are living, dead, and things that have never been alive.

-Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.

-Identify and name a variety of plants and animals in their habitats, including microhabitats.

-Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

SMSC

Spiritual – learning about the world around them and reflecting on experiences.
Social – cooperating and working together
Moral – opportunities for voting.
Cultural - Studying different scientists and their contributions.

PREPARATION FOR ADULTHOOD

Promote independence.
Opportunities for leadership.
Exposure to aspiring jobs in STEM field.

IMPLEMENTATION

ACTIVITIES

Half term 1

Lesson 1 – explore and compare things that are living, dead and never alive – children to explore this concept. Taken outside to find things for each category and explain how they know this. Links to previous learning with different materials.
Lesson 2 – Using pictures from the last lesson – categorising what they found into different groups.
Lesson 3- explore food chains – within forest school - explore food chains – recap previous learning from year 1 about carnivore's, omnivores and herbivores. Children to investigate the idea of a food chain and what this might mean. Children to find examples of food chains e.g. a spider, what does a spider eat? What eats a spider?
Lesson 4 – habitats – Ipads - Using google earth look at different habitats on earth – arctic, desserts, rainforests. Explore what animals live there. How have they adapted to their habitats?
Lesson 5 – Children to choose one habitat – draw this and the animals that live there. Explaining how animals have adapted to their habitats.
Lesson 6 – micro habitats – within forest school – children to investigate and observe micro habitats. Children take magnifying glasses to the woods to have a look for microhabitats. They record this in a tally chart. Lots of discussing around microhabitats and food chains.

Half term 2 - STEM PROJECT

Lesson 1 – micro habitats – links to art – design your own animal which would live in a microhabitat. Discussions around what they would need to help them survive e.g. a snail has a shell to protect itself.
Lesson 2- make a 'pet rock' – using their designs the children make their own pet rock that could live in a microhabitat.
Lesson 3 – design a microhabitat for their pet rocks to live – children are to design a microhabitat always keeping in mind what the pet needs to survive e.g. water, food source, shelter etc.
Lesson 4 – make our microhabitats. Always keeping in mind what the pet needs to survive e.g. water, food source, shelter etc.
Lesson 5 – make our microhabitats. Always keeping in mind what the pet needs to survive e.g. water, food source, shelter etc.
Lesson 6 – Make our microhabitats. Always keeping in mind what the pet needs to survive e.g. water, food source, shelter etc.

IMPACT

OUTCOMES

I can explore and compare things that are living, dead and never alive.

I can describe where animals get their food.

I can explain food chains.

I can identify animals and their habitats (including microhabitats)

I can demonstrate how animals have adapted to their habitats.

Values

Responsibility (equipment), excellence, quality, cooperation, determination

VOCABULARY

Observing, identify, categorise, explore, evaluate, habitat, microhabitat, food chain, survive, living, dead, never lived.

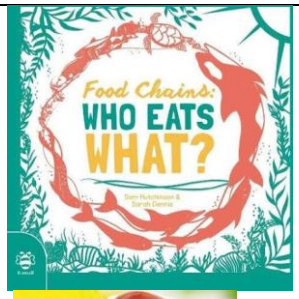
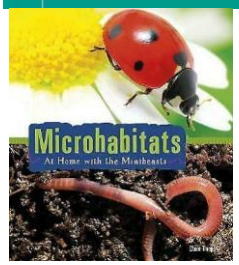
Higher level vocabulary

Similarities, differences, reproduction

READING OPPORTUNITIES

Next steps in learning

Year 3 – links into 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.

		Year 4 – links to recognising that living things can be grouped in a variety of ways. Exploring, classifying and identifying a variety of living things in their local and wider environment and recognising that environments can change and that this can sometimes pose dangers to living things.
SKILLS Working Scientifically is always at the forefront of science teaching with these key areas: • Asking simple questions and recognising that they can be answered in different ways. • Observing closely, using simple equipment • Performing simple tests. • Identifying and classifying. • Using their observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions.	 -	**Key Questions** **What makes an effective habitat?** **Do all animals need the same things to survive?** **Can an animal survive in another animals' habitat?** **What cause habitats to be destroyed?**
LINKS English – Nessie's food chain Forest school – many links, see above. Geography – Links to habitats around the world		

Curriculum Coherence – Year 2 Science

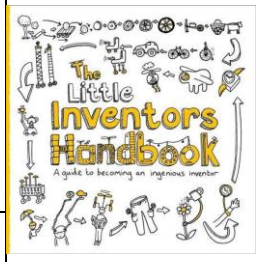
Term 2	

PRIOR LEARNING/STARTING POINT:

Year 1

- distinguish between an object and the material from which it is made
- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- describe the simple physical properties of a variety of everyday materials
- compare and group together a variety of everyday materials on the basis of their simple physical properties

INTENT	IMPLEMENTATION	IMPACT
KNOWLEDGE **- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses** **- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.**	**ACTIVITIES** **Half Term 1** **Lesson 1** – introducing changing shape of materials – recap children's learning from year one on different types of materials. Introduce materials that have the ability to change shape. Use of signs to show bend, twist, stretch and squash. Children to categorise objects they find in the classroom and outside. **Lesson 2** – Changing shape of materials and suitability – links to great fire of London topic	**OUTCOMES** I can explain why different materials can be used to make the same object. I can tell you which properties make some materials suitable for different purposes. I can tell you which properties make some materials unsuitable for different purposes.

SMSC **Spiritual –** learning about the world around them and reflecting on experiences. **Social** – cooperating and working together **Moral** – opportunities for voting. **Cultural** - Studying different scientists and their contributions.	**PREPARATION FOR ADULTHOOD** Promote independence. Opportunities for leadership. Exposure to aspiring jobs in STEM field.	– Which parts of a fire engine need to be able to change shape, e.g. a fire hose has to be able to bend. **Lesson 3** – changing shape of materials – links to IT (photo's before and after) - children to experiment with different materials and changing their shape. **Lesson 4** – suitability – recap children's learning of different materials. Children to predict most suitable material for different situations. Predicting with spoons and different liquids, which spoon is suitable for a hot drink for example. **Lesson 5** – suitability – experimenting spoons experiment. **Lesson 6** – suitability – evaluating spoons experiment. **Half term 2** **Lesson 1 –** suitability of materials – trip to St Albans – looking at properties of materials. **Lesson 2** – evaluation of trip. **Lesson 3** – Preparation for egg day (STEM) – design (invent) suitable protection for an egg. **Lesson 4** – build our inventions **Lesson 5** – EGG DAY! (STEM) test out our inventions **Lesson 6** – evaluate our inventions.	
VOCABULARY Observation, prediction, investigation, designing, testing, concluding, squashing, bending, twisting, stretching, Higher Level Vocabulary Absorbent, brittle, conductive, soluble, permeable, impermeable **SKILLS** Working Scientifically is always at the forefront of science teaching with these key areas: • Asking simple questions and recognising that they can be answered in different ways. • Observing closely, using simple equipment • Performing simple tests. • Identifying and classifying. • Using their observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions.		**READING OPPORTUNITIES**  	**NEXT STEPS IN LEARNING** Year 3 • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Year 4 • compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)
Values Responsibility (equipment), excellence, quality, cooperation, determination	**Key Questions** **Why are materials different?** **Can a material change shape?**		

Curriculum Coherence – Year 2 Science

Term 3

PRIOR LEARNING/STARTING POINT:

Year 1

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- identify and describe the basic structure of a variety of common flowering plants, including trees

INTENT

KNOWLEDGE

-Observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
-Notice that animals, including humans, have offspring which grow into adults
-Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
-Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

VOCABULARY

Plant, observe, changes, findings, leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem.

Higher level vocabulary

Germination, seedling, sprout, deciduous, evergreen, reproduction

SKILLS

Working Scientifically is always at the forefront of science teaching with these key areas:

• Asking simple questions and recognising that they can be answered in different ways.
• Observing closely, using simple equipment
• Performing simple tests.
• Identifying and classifying.
• Using their observations and ideas to suggest answers to questions.
• Gathering and recording data to help in answering questions.

IMPLEMENTATION

ACTIVITIES

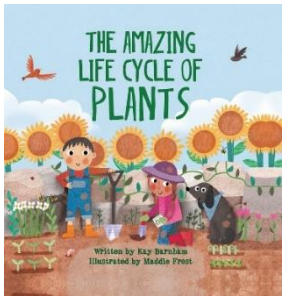
Half term 1 - animals

Lesson 1 – How animals grow.
Lesson 2 – growth enquiry, growing and changing.
Lesson 3 – recap animals basic needs
Lesson 4 – Healthy eating
Lesson 5 – Exploring exercise
Lesson 6 – Hygiene, potential talk from pharmacist.

Half term 2

Lesson 1 – Observing plants
Lesson 2 – plant growth investigation – comparison to animals.
Lesson 3 - plant growth investigation – focus on life cycle
Lesson 4 – Plant growth investigation – relook at what a plant needs to grow, look at variables (no sunlight, no water etc.)
Lesson 5 – Plant growth investigation – conclusions/findings.
Lesson 6 – Plants we eat.

READING OPPORTUNITIES



IMPACT

OUTCOMES

I can observe plants and trees growth.

I can record what I see,

I can draw and measure what I observe.

I can label the main parts of plants and trees.

I can write what I have found out from my investigation.

Values

Responsibility (equipment), excellence, quality, cooperation, determination

NEXT STEPS IN LEARNING

Year 3

- Children will be moving onto labelling the parts of plants in more detail.
- Children will be looking at more variables and how this differs from plant to plant.
- Moving onto seed dispersal and pollination.
- Moving onto nutrition

Year 4

- Changing habitats and how changing environments can affect plants and animals.
- Moving onto digestive system.

SMSC

Spiritual – learning about the world around them and reflecting on experiences.

PREPARATION FOR ADULTHOOD

Promote independence. Opportunities for leadership. Exposure to aspiring jobs in STEM field.

Key Questions

How and why do plants and different species grow?
Why do differently species grow differently?
What do we need to stay healthy and strong?
Do humans grow the same as plants or animals?

Social – cooperating and working together **Moral** – opportunities for voting. **Cultural** - Studying different scientists and their contributions.		