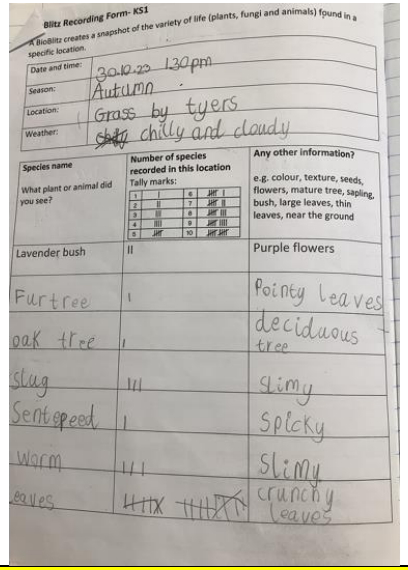
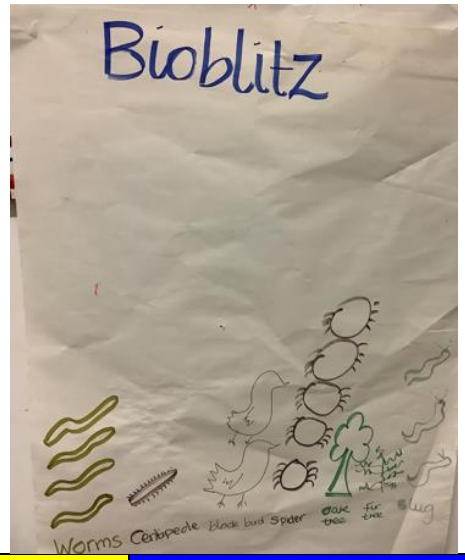
Hope Kindness Forgiveness Aspiration Love Courage Trust Respect Friendship

Drake Primary School and Little Pirates

Year 2 Science Curriculum Overview 2024-2025

<table>
<tr><th>Term</th><th>Autumn
(14 weeks)</th><th colspan="2">Spring
(12 weeks)</th><th>Summer
(12 weeks)</th></tr>
<tr><td>Longitudinal Study: BioBlitz</td><td colspan="4">A BioBlitz creates a snapshot of the variety of life (plants, fungi & animals) found in a specific location.
Count the plants, animals and fungi that are in the Key Stage 1 playground. Make a pictogram of the results. Repeat every term.
Drake > CURRICULUM DEV > Science > 2024/25> BioBlitz
 


</td></tr>
<tr><td>Theme</td><td>People
  </td><td colspan="2">Explore
  </td><td>Connections
  </td></tr>
<tr><td>Science focus</td><td>Chemistry: Everyday Materials</td><td>Biology: Animals, including humans</td><td>Biology: Plants</td><td>Biology: Living things and their habitats</td></tr>
</table>

Science National Curriculum	**Chemistry: Uses of everyday materials** ● 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.	**Biology: Animals, including humans** ● 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.	**Biology: Plants** ● 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.	**Biology: Living things and their habitats** ● 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 micro-habitats. ● 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.
Key Concepts	**Uses of everyday materials** All objects are made of one or more materials that are chosen specifically because they have suitable properties for the task. For example, a water bottle is made of plastic because it is transparent allowing you to see the drink inside and waterproof so that it holds the water.	**Animals, including humans** Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be	**Plants** Plants may grow from either seeds or bulbs. These then germinate and grow into seedlings which then continue to grow into mature	**Living things and their habitats** All objects are either living, dead or have never been alive. Living things are plants (including seeds) and animals. Dead things include dead animals and plants and parts of plants and animals that are no longer attached e.g. leaves and twigs, shells, fur, hair and feathers (This is

	When choosing what to make an object from, the properties needed are compared with the properties of the possible materials, identified through simple tests and classifying activities. A material can be suitable for different purposes and an object can be made of different materials. Objects made of some materials can be changed in shape by bending, stretching, squashing and twisting. For example, clay can be shaped by squashing, stretching, rolling, pressing etc. This can be a property of the material or depend on how the material has been processed e.g. thickness.	young, such as babies or kittens, that grow into adults. In other animals, such as chickens or insects, there may be eggs laid that hatch to young or other stages which then grow to adults. The young of some animals do not look like their parents e.g. tadpoles. All animals, including humans, have the basic needs of feeding, drinking and breathing that must be satisfied in order to survive. To grow into healthy adults, they also need the right amounts and types of food and exercise. Good hygiene is also important in preventing infections and illnesses.	plants. These mature plants may have flowers which then develop into seeds, berries, fruits etc. Seeds and bulbs need to be planted outside at particular times of year and they will germinate and grow at different rates. Some plants are better suited to growing in full sun and some grow better in partial or full shade. Plants also need different amounts of water and space to grow well and stay healthy.	a simplification, but appropriate for Year 2 children.) An object made of wood is classed as dead. Objects made of rock, metal and plastic have never been alive (again ignoring that plastics are made of fossil fuels). Animals and plants live in a habitat to which they are suited, which means that animals have suitable features that help them move and find food and plants have suitable features that help them to grow well. The habitat provides the basic needs of the animals and plants – shelter, food and water. Within a habitat there are different micro-habitats e.g. in a woodland – in the leaf litter, on the bark of trees, on the leaves. These micro-habitats have different conditions e.g. light or dark, damp or dry. These conditions affect which plants and animals live there. The plants and animals in a habitat depend on each other for food and shelter etc. The way that animals obtain their food from plants and other animals can be shown in a food chain.
Common misconceptions	**Uses of everyday materials** Some children may think: • only fabrics are materials • only building materials are materials • only writing materials are materials • the word rock describes an object rather than a material	**Animals, including humans** Some children may think: • an animal's habitat is like its 'home'	**Plants** Some children may think: • plants are not alive as they cannot be seen to move • seeds are not alive	**Living things and their habitats** Some children may think: • an animal's habitat is like its 'home' • plants and seeds are not alive as they cannot be seen to move • fire is living • arrows in a food chain mean 'eats'.

	• solid is another word for hard.	• all animals that live in the sea are fish • respiration is breathing • breathing is respiration.	• all plants start out as seeds • seeds and bulbs need sunlight to germinate.	
Possible activities	**Uses of everyday materials** • Classify materials. • Make suggestions about alternative materials for a purpose that are both suitable and unsuitable • Test the properties of materials for particular uses e.g. compare the stretchiness of fabrics to select the most appropriate for Elastigirl's costume, test materials for waterproofness to select the most appropriate for a rain hat	**Animals, including humans** • Ask people questions and use secondary sources to find out about the life cycles of some animals. • Observe animals growing over a period of time e.g. chicks, caterpillars, a baby. • Ask questions of a parent about how they look after their baby. • Ask pet owners questions about how they look after their pet. • Explore the effect of exercise on their bodies. • Classify food in a range of ways, including using the Eatwell Guide. • Investigate washing hands, using glitter gel.	**Plants** • Make close observations of seeds and bulbs. • Classify seeds and bulbs. • Research and plan when and how to plant a range of seeds and bulbs. • Look after the plants as they grow – weeding, thinning, watering etc. • Make close observations and measurements of their plants growing from seeds and bulbs. • Make comparisons between plants as they grow.	**Living things and their habitats** • Explore the outside environment regularly to find objects that are living, dead and have never lived. • Classify objects found in the local environment. • Observe animals and plants carefully, drawing and labelling diagrams. • Create simple food chains for a familiar local habitat from first-hand observation and research. • Create simple food chains from information given e.g. in picture books (Gruffalo etc.).

Scientists https://pstt.org.uk/unique-resources/a-scientist-just-like-me/	**Materials** Danial Azahan (Malaysian mechanical engineer) 	**Animals including Humans** Tanesha Aleen (American zoologist) 	**Plants** Kelsey Bryes (English  evolutionary biologist)	**Living Things and Their Habitats** Kelsey Barnhill (English deep-sea ecologist) 
Arts enrichment opportunities	**Uses of Everyday Materials** Clay- squash, bent, twist, stretch Engineering- triangles make a structure strong	**Animals including Humans** Draw life cycle of ladybird, frog, butterfly etc. Microscopic images of germs/bacteria	**Plants** Observational sketch	**Living Things and Their Habitats** Draw a habitat for an animal
Books you could use **https://www.stem.org.uk/teaching-science-through-stories**		**Once there were giants (Martin Waddell)**- Support children to understand that all animals, including humans, have offspring which grow into adults. **The tiny seed (Eric Carle)-** lifecycle of a plant		**Little Red Riding Hood (traditional tale)**- As Little Red Riding Hood is set in a wood, it makes a lovely starting point for finding out about habitats and food chains. **The Gruffalo (Julia Donaldson)-** can support children to learn more about habitats and to identify and name a variety of plants and animals in different habitats, including micro-habitats. **The Bog Baby (Jeanne Willis)-** a story about the ethical care of wildlife and the appropriate habitats for wild creatures.
Trips / Visitors / Experiences	What materials can we find in the school grounds?	Frederick's Wood to explore plants		School grounds / local area walk to look for habitats and microhabitats. Lackford Lakes trip

KS1 Working Scientifically National Curriculum	• 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.			
Enquiry suggestions	**Materials** **Comparative / fair testing** Which shapes make the strongest paper bridge? Which material would be best for the roof of the little pig's house? **Research** How have the materials we use changed over time? How are plastics made? **Observation over time** How long do bubble bath bubbles last for? Would a paper boat float forever? What will happen to our snowman? **Pattern Seeking** Do magnetic materials always conduct electricity? **Identifying, grouping and classifying** Which materials are shiny and which are dull? Which materials will let electricity go through them, and which will not? **Scientific Discovery** What is a mechanical engineer? What does Danial Azahan do as a mechanical engineer?	**Animals, including humans** **Comparative / fair testing** Do bananas make us run faster? Do amphibians have more in common with reptiles or fish? **Research** What food do you need in a healthy diet and why? What do you need to do to look after a pet dog/cat/lizard and keep it healthy? **Observation over time** How much food and drink do I have over a week? How does a tadpole change over time? **Pattern Seeking** Which age group of children wash their hands the most in a day?	**Plants** **Comparative / fair testing** Do cress seeds grow quicker inside or outside? **Research** How does a cactus survive in a desert with no water? **Observation over time** What happens to my bean after I have planted it? **Pattern Seeking** Do bigger seeds grow into bigger plants? **Identifying, grouping and classifying** How can we identify the trees that we observed on our tree hunt? **Scientific Discovery** What does Kelsey Bryes work as an	**Habitats** **Comparative / fair testing** Is there the same level of light in the evergreen wood compared with the deciduous wood? **Research** How does the habitat of the Arctic compare with the habitat of the rainforest? **Observation over time** How does the school pond change over the year? **Pattern Seeking** Which habitat do worms prefer –where can we find the most worms? What conditions do woodlice prefer to live in? **Identifying, grouping and classifying** How would you group things to show which are living, dead, or have never been alive? How would you group these plants and animals based on what habitat you would find them in? **Scientific Discovery** What is a deep-sea ecologist?

		Identifying, grouping and classifying Which offspring belongs to which animal? **Scientific Discovery** How does Tanesha Aleen look after animals?	evolutionary biologist involve?	
A.R.E. / skills progression **(possible evidence)**	**Uses of everyday materials** • Can name an object, say what material it is made from, identify its properties and make a link between the properties and a particular use • Can label a picture or diagram of an object made from different materials • For a given object can identify what properties a suitable material needs to have • Whilst changing the shape of an object can describe the action used • Can use the words flexible and/or stretchy to describe materials that can be changed in shape and stiff and/or rigid for those that cannot • Can recognise that a material may come in different forms which have different properties • Can sort materials using a range of properties • Can explain using the key properties why a material is suitable or not suitable for a purpose • Can begin to choose an appropriate method for testing a material for a particular property	**Animals, including humans** • Can describe how animals, including humans, have offspring which grow into adults, using the appropriate names for the stages • Can state the basic needs of animals, including humans, for survival • Can state the importance for humans of exercise, eating the right amounts of different types of food, and hygiene • Can name foods in each section of the Eatwell Guide • Can describe, including using diagrams, the life cycle of some	**Plants** • Can describe how plants that they have grown from seeds and bulbs have developed over time • Can identify plants that grew well in different conditions • Can spot similarities and difference between bulbs and seeds • Can nurture seeds and bulbs into mature plants identifying the different requirements of different plants	**Habitats** • Can sort into living, dead and never lived • Can give key features that mean the animal or plant is suited to its micro-habitat • Using a food chain can explain what animals eat • Can explain in simple terms why an animal or plant is suited to a habitat e.g. the caterpillar cannot live under the soil like a worm as it needs fresh leaves to eat; the seaweed we found on the beach cannot live in our pond because it is not salty • Can find a range of items outside that are living, dead and never lived • Can name a range of animals and plants that live in a habitat and micro-habitats that they have studied • Can talk about how the features of these animals and plants make them suitable to the habitat • Can talk about what the animals eat in a habitat and how the plants provide shelter for them • Can construct a food chain that starts with a plant and has the arrows pointing in the correct direction

	• Can use their test evidence to select appropriate material for a purpose e.g. Which material is the best for a rain hat?	animals, including humans, and their growth to adults e.g. by creating a life cycle book for a younger child • Can measure/observe how animals, including humans, grow. • Show what they know about looking after a baby/animal by creating a parenting/pet owners' guide • Explain how development and health might be affected by differing conditions and needs being met/not met		
Prior knowledge check	**Concept Questions- Materials:** 1st lesson of the unit: Concept questions- do these collectively as a class. Drake > CURRICULUM DEV > Science > 2024/25> Concept questions **Flashback Questions:** Every lesson- begin with 3 flashback questions- do these collectively as a class. Drake > CURRICULUM DEV > Science > 2024/25> Flashback questions	**Concept Questions- Animals:** 1st lesson of the unit: Concept questions- do these collectively as a class. Drake > CURRICULUM DEV > Science > 2024/25> Concept questions **Flashback Questions:**	**Concept Questions- Plants** 1st lesson of the unit: Concept questions- do these collectively as a class. Drake > CURRICULUM DEV > Science > 2024/25> Concept questions	**Concept Questions- Habitats:** 1st lesson of the unit: Concept questions- do these collectively as a class. Drake > CURRICULUM DEV > Science > 2024/25> Concept questions **Flashback Questions:** Every lesson- begin with 3 flashback questions- do these collectively as a class. Drake > CURRICULUM DEV > Science > 2024/25> Flashback questions

		Every lesson- begin with 3 flashback questions- do these collectively as a class. Drake > CURRICULUM DEV > Science > 2024/25> Flashback questions	**Flashback Questions:** Every lesson- begin with 3 flashback questions- do these collectively as a class. Drake > CURRICULUM DEV > Science > 2024/25> Flashback questions	
Assessment	Autumn mid-term Summative assessment: Head start Progress test A	Spring mid-term Summative assessment: Head start Progress test B		Summer mid-term Summative assessment: Head start Progress test C

YEAR 2 **Vocabulary**	Explore 	People 	Connections 
	Enquiry types: Comparative / fair testing, Research, Observation over time, Pattern Seeking, Identifying, grouping and classifying, Scientific Discovery **Working Scientifically:** Experience, observe, changes, patterns, grouping,	**Enquiry types:** Comparative / fair testing, Research, Observation over time, Pattern Seeking, Identifying, grouping and classifying, Scientific Discovery **Working Scientifically:** Experience, observe, changes, patterns, grouping, sorting, classifying, compare, identify (name), data,	**Enquiry types:** Comparative / fair testing, Research, Observation over time, Pattern Seeking, Identifying, grouping and classifying, Scientific Discovery **Working Scientifically:** Experience, observe, changes, patterns, grouping, sorting, classifying, compare, identify (name), data,

	sorting, classifying, compare, identify (name), data, measure, record, equipment, questions, test, investigate, explore, magnifying glass / hand lens, same, different, questioning, data **Materials:** solid, squash, twist, bend, stretch, push, pull, shape, properties, materials, wood, metal, plastic, glass, brick, rock, paper, cardboard, suitable, unsuitable, purpose, hard/soft, shiny/dull, stretchy/stiff, rough/smooth, bendy/not bendy, waterproof/not waterproof, transparent/opaque/translucent, absorbent/not absorbent, reflective/non-reflective, flexible/rigid	measure, record, equipment, questions, test, investigate, explore, magnifying glass / hand lens, same, different, questioning, data **Plants:** seeds, bulbs, mature plants, bud, growth, grow, habitat, local environment, leaf fall, water, light, warm, shade, cool, temperature, healthy, growth, survive, soil, germinate, stages of growth, reproduction (in plants) **Animals, including humans:** Offspring, survival, baby, toddler, child, teenager, adult, food, water, air, exercise, hygiene, heartbeat, breathing, healthy, nutrition, growth, reproduction (focus on growth, not on how reproduction occurs), egg -chick -chicken, egg -caterpillar-pupa – butterfly, pawn-tadpole- frog, lamb- sheep, germs, disease, food type (examples – meat, fish, vegetables, bread, rice, pasta).	measure, record, equipment, questions, test, investigate, explore, magnifying glass / hand lens, same, different, questioning, data **Habitats:** pond, garden, field, park, woodland, sea shore, river, ocean, forest, rainforest, stones, rocks, logs, leaf litter, habitat (& names of local habitats e.g. pond, woodland etc.), micro-habitat (& Names of micro-habitats e.g. under logs, in bushes etc.), living, dead, never been alive, alive, food chain, producer, prey, predator, adaption, depend, source of food, shelter, healthy, grow, growth, healthy, habitat, local environment, pet, wild animal, insect Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed
Sentence Stems	**Knowledge:** understand that… I wonder if… The picture reminds me of… The most important idea is… An example of…is… I already know that… A type of…is… A…is different from a …because… …is the same as…because they both… …and …both have The science term that describes…is… The word I am thinking of is like… **Working scientifically:** First, I need to find out… I saw…which made me think…		

	I think this was caused by… It would be easier if… How would I be able to check…? I predict that…because… I think…because… This happened because… I will test my prediction by… I have reached the conclusion that… My observations show that… There is a pattern…It shows that… …was caused by…