Hope Kindness Forgiveness Aspiration Love Courage Trust Respect Friendship

Drake Primary School and Little Pirates

Reception Science ('The Natural World' ELG) Curriculum Overview 2024-2025

<table>
<tr><th>Term</th><th>Autumn
(14 weeks)</th><th>Spring
(12 weeks)</th><th>Summer
(12 weeks)</th></tr>
<tr><td>Longitudinal Study: BioBlitz</td><td colspan="3">A BioBlitz creates a snapshot of the variety of life (plants, fungi & animals) found in a specific location.
Explore the Reception Forest School area, to see what plants, animals and fungi are living there. Repeat every term.
Drake > CURRICULUM DEV > Science > 2024/25> BioBlitz</td></tr>
<tr><td>Theme</td><td>Person
  </td><td>Blossom
  </td><td>Planet
  </td></tr>
<tr><td>ELG</td><td colspan="3">Understanding the World
ELG: The Natural World
Children at the expected level of development will:
Explore the natural world around them, making observations and drawing pictures of animals and plants.
Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</td></tr>
<tr><td rowspan="2">Focus</td><td>Humans - my family</td><td>Sound, light & Earth and space</td><td>Materials machines</td><td>Forces- floating & sinking</td><td>River habitats & animals</td><td>States of matter</td><td>Plants- planting & growing</td><td>Woodland habitats & animals</td><td>Plants- trees & leaves</td><td>Human growth</td><td>Fruit & vegetables</td></tr>
<tr><td colspan="4">Physics: Seasonal changes (Autumn)</td><td colspan="3">Physics: Seasonal changes (Winter)</td><td colspan="4">Physics: Seasonal Changes (Spring and Summer)</td></tr>
<tr><td>Science focus</td><td colspan="4">Biology: Humans:</td><td colspan="3">Biology: Animals:</td><td colspan="4">Biology: Plants:
Grow plants</td></tr>
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	▪ Describe people who are familiar to them. ▪ Learn about how to take care of themselves throughout the year. **Physics: Light:** ▪ Explore shadows. ▪ Explore rainbows. **Physics: Sound:** ▪ Listen to sounds outside and identify the source. ▪ Make sounds. **Physics: Seasonal changes:** ▪ Play and explore outside in all seasons and in different weather. ▪ Observe living things throughout the year. **Physics: Forces:** ▪ Explore how to change how things work. ▪ Explore how the wind can move objects. ▪ Explore how objects move in water. **Physics: Earth and space:** ▪ Learn about the Earth, Sun, Moon, planets and stars. ▪ Learn about space travel. **Physics: Seasonal changes:** ▪ Play and explore outside in all seasons and in different weather.	▪ Name and describe animals that live in different habitats. ▪ Describe different habitats. **Biology: Habitats:** ▪ Explore the plants in the surrounding natural environment. ▪ Explore the animals in the surrounding natural environment. ▪ plants and animals in a contrasting natural environment. **Chemistry: Materials:** ▪ Explore a range of materials, including natural materials. ▪ Make objects from different materials, including natural materials. ▪ Observe, measure and record how materials change when heated and cooled. ▪ Compare how materials change over time and in different conditions. **Physics: Seasonal changes:** ▪ Play and explore outside in all seasons and in different weather. ▪ Observe living things throughout the year.	▪ Explore the plants in the surrounding natural environment

	▪ Observe living things throughout the year.		
Common misconceptions	**Humans** Some children may think: • sons look like their fathers and daughters look like their mothers. **Seasonal changes** Some children may think: • it always snows in winter • it is always hot in the summer • all babies and young animals are born in spring • plants only have flowers in the spring and summer • animals sleep during winter • it rains to help the plants grow • when it is hotter, it is because the Sun is closer • God controls the weather. **Light** Some children may think: • shadows are only caused by the Sun • all shadows are black. **Sound** Some children may think: • sounds do not travel through solids and liquids. **Forces** Some children may think: • all light objects float and all heavy objects sink	**Animals** Some children may think: • animals are furry and have four legs • a bee is not an animal because it is an insect • animals adapt to their surroundings, e.g. a brown bear turns white and becomes a polar bear • animals living in the soil breathe by coming to the surface • dragons and other mythical creatures are real animals. **Habitats** Some children may think: • trees are not plants • trees are not living as they do not seem to change or grow • weeds are bad plants. **Materials** Some children may think: • material only means fabric • all plastic/wood etc. is the same.	**Plants:** Some children may think: • trees are not plants • there is a young plant inside a seed or bulb • bulbs are big seeds • big plants grow from big seeds and big bulbs • fruit and vegetables come from the supermarket • plants grow at night or when we are not watching them.

	• objects made of the same material will always float or sink. **Earth and space** Some children may think: • the Earth is flat • the Moon and Sun are discs • stars are a pointed 'star' shape • the Moon appears only at night • at night, the Sun is turned off • at night, the Sun goes behind the clouds.		
Working scientifically	**Humans** Classification • Sort images of people according to their characteristics. Researching using secondary sources • Find out information from visitors (dentist, nurse etc.). Pattern seeking • Are taller children faster? • Are taller children stronger? **Light** Comparative testing • Compare the shape of shadows made by different objects. Classification • Which objects/materials make dark shadows? Observing over time • How do the Sun and shade change during the day? • How does a toy's shadow change during the day? Researching using secondary sources • Find out about shadows.	**Animals** Classification • Sort animals according to where they live. Researching using secondary sources • Learn how animals from a different habitat are cared for. • Learn about animals in a different habitat. **Habitats** Classification • Name and describe plants and animals they find in the school grounds. Pattern seeking • Look for minibeasts in different areas of the school grounds. • Look for plants in different areas of the school grounds. **Materials** Comparative testing • How does popcorn made in a microwave compare to popcorn made on a fire? • How quickly do ice cubes melt in different areas of the playground? • How are pizza bases different when made with different flours?	**Plants** Comparative testing • Compare how quickly different seeds/bulbs germinate. • Compare how different vegetable tops grow. Observing over time • How does a plant change as it grows? • What happens to fruit, vegetables and flowers when left over time? Researching using secondary sources • Look at seed and bulb packets to learn how to plant and care for them.

	• Find out about rainbows. **Sound** Comparative testing • How does rain sound different when it lands in different containers? Observing over time • Listen to the siren of an emergency vehicle as it approaches and moves away. **Seasonal changes** Classification • Which clothes are suitable for each season? Observing over time • How does a puddle change over time? • How does a snowman change as it melts? • How does the natural world change with the seasons? Researching using secondary sources • Find out about how animals behave in different seasons. • Find out about the weather and seasons. **Forces** Comparative testing • How many cubes/small plastic animals can fit in different 'boats'? • Compare how cars move down ramps/gutters. • Compare how wheels turn when sand or water is poured through. • Compare how objects fall. • Compare how objects fall with and without parachutes. • Compare how different balls bounce. • Compare how things move when blown.	• How does a loaf cook differently in different tins? • How do cupcakes cook if they have different amounts of mixture? Observing over time • How does the block of ice change over time? • How does a snowman change over time? • How does cake mixture/bread dough change as it is cooked?	

	• Compare how a marble moves through different liquids. • Compare how different paper aeroplanes fly. **Earth and space** Comparative testing • Make and testing air-propelled rockets to find out which is the 'best'. Pattern seeking • Find simple patterns in how light levels and temperature change with the movement, or obscuring of, the Sun. Research using secondary sources • Find out about the Solar System, stars and space travel. • Find out about nocturnal animals.		
What you could do	**Humans:** Opportunities to describe people who are familiar to them • Talking about themselves, friends, family and community using photographs • Using mirrors to look at their faces • Creating pictures or collages of themselves, friends, family and community • Making hand and footprints using paint • Making fingerprints using ink pads Using a 'magic' mirror which shows everything about them and getting children to describe themselves and how they are special • Sharing books about different types of families Opportunities to learn about how to take care of themselves • Demonstrating and talking about how they look after themselves	**Animals:** Opportunities to learn about animals from a different habitat • Sharing books about animals in the local area and animals in other countries e.g. jungle, polar regions, desert, ocean • Looking at pictures of animals in different habitats • Watching videos of animals in different habitats • Playing games involving matching animals to their habitats • Playing with small world animals in different habitats • Visiting the zoo, focusing on animals that live in different habitats • Caring for pets from a different habitat e.g. tropical fish • Creating pictures of animals in their habitats • Pretending to be animals	**Plants:** • Encourage children to talk about the range of seeds, bulbs, plants and gardening tools they saw on their trip to the garden centre. • Encourage children to talk about the seeds they gathered from the ground from the surrounding natural environment, from pieces of fruit and plants they have grown. • Remind children not to damage the plants in any way and only gather seeds from the ground. • Encourage children to describe and compare seeds and bulbs, including any patterns on them that they notice.

	• Talking about other people that look after them • Talking to a dentist, nurse, meal supervisor/school cook, road crossing supervisor etc. • Sharing videos of people who care for us and how we look after ourselves **Seasonal changes:** Opportunities to play and explore outside in all seasons and in different weather • Playing in the rain and snow • Drawing around puddles • Catching rain and hail in buckets • Catching snowflakes on frozen black paper and looking at them with magnifying glasses or an app on a tablet • Making icicles • Using scarves or pinwheels to explore the strength and direction of the wind • Looking at photographs of different seasons and types of weather • Sharing books about different seasons and types of weather Opportunities to observe living things throughout the year • Sharing books about the seasons • Going on seasonal walks to observe key features of the seasons • Making artwork with seasonal found objects • Visiting a canal or pond to look for birds and their young in spring • Visiting a farm to see the young animals in the spring Finding minibeasts in the school grounds at different times in the year	• Naming and describing animals they see in books, pictures, videos or while on a trip • Describing different habitats **Habitats:** Opportunities to explore the plants in the surrounding natural environment • Taking photographs of the plants they find in the school grounds • Observing closely and drawing the plants in the school grounds • Finding plants in the school grounds to match with photographs of them • Looking at aerial views to count the number of trees in the school grounds • Using a map of the school grounds, with pictures of where specific plants can be found, to find those plants • Creating a map to show how to find their favourite plants in the school grounds Opportunities to explore the animals in the surrounding natural environment • Finding minibeasts in the school grounds • Taking photographs of the minibeasts they find in the school grounds • Matching the minibeasts they find to pictures that identify them • Observing the minibeasts closely, using a magnifying glass or app on a tablet • Drawing pictures of the minibeasts • Creating a map to show where they found each type of minibeast • Sharing books about minibeasts • Playing with small world minibeasts • Building minibeast homes Opportunities to explore plants and animals in a contrasting natural environment	

	• Taking photographs of the minibeasts they find in the school grounds at different times in the year • Looking for birds and other animals throughout the year using binoculars • Sharing books and videos about animals that migrate or hibernate over winter, gather food in autumn, build nests and lay eggs in spring etc. • Taking photographs of the plants they find in the school grounds at different times in the year • Observing closely and drawing the plants in the school grounds at different times in the year • Matching animals and plants they find to pictures that identify them **Sound:** Opportunities to listen to sounds outside and identify the source • Going on a sound walk • Closing eyes and listening to the sounds around them when outside • Listening to rain, wind, thunder • Recording sounds when outside • Playing sound identification games • Catching rain in metal buckets or saucepans Opportunities to make sounds • Making noise by blowing on a blade of grass • Making wind chimes • Using voices, instruments and other objects to mimic sounds they hear outdoors **Light:** Opportunities to explore shadows	• Visiting a contrasting natural environment e.g. forest, beach, etc. • Finding and taking photographs of plants and animals in the contrasting natural environment • Sharing non-fiction and fiction books about the contrasting natural environment visited **Materials:** Opportunities to explore a range of materials in a sensory way, including natural materials • Looking for dew, ice, icicles and frost in the playground • Using their senses to explore natural materials in the environment, such as stones, twigs, leaves, feathers, seeds, flowers etc. • Gathering natural materials to make collections Opportunities to make objects from different materials, including natural materials • Making pictures using natural materials they have gathered from the environment • Making dens, nests, bug hotels etc. using natural materials • Making ice pictures by putting water in a shallow tray and adding natural objects gathered from the environment and then leaving them outside to freeze or putting them in the freezer Making junk models with a range of materials, including natural materials they have gathered from the environment Opportunities to compare how materials change • Making popcorn in a microwave and on a fire • Making pizza dough with different flours	

	• Looking for shadows created by the Sun on cloudy and non-cloudy days • Drawing around shadows and comparing their shape and size • Making shadows using their bodies, both outside using the Sun and inside using torches • Making shadows using transparent and opaque objects/materials • Putting hands in a beam of light and making shadow shapes • Making shadows using shadow puppets or other objects • Observing a toy outside and noticing how the shadow changes during the day • Observing what areas are sunny and shady at different times in the day • Sharing books about shadows Opportunities to explore rainbows • Making rainbows from sunlight e.g. bubbles, water sprinkler, holographic paper, CDs etc. • Sharing books about rainbows **Forces:** Opportunities to explore how to change how things work • Adapting objects to see if they can be made to float or sink e.g. cutting and peeling fruit and vegetables, reshaping plasticene etc. • Testing how many small objects different foil containers can hold before sinking • Testing how toy cars move down ramps and gutters • Testing how wheels turn when sand or water is poured through them	• Baking bread in different tins or for different times to compare the outcome • Baking cupcakes and removing one after every five minutes • Choosing where to put ice cubes in the playground and observing how quickly they melt • Observing how a large block of ice changes over time, using string to measure around it • Putting wax crayons in different areas of the playground and observing how they change • Making a snowman and observing how it changes over time • Making snowballs and putting them in different parts of the playground and observing how they change over time	

	• Testing how objects fall with and without a parachute attached • Testing how different balls bounce • Making and testing paper aeroplanes • Designing different marble runs or routes for water/sand to travel down gutters or pipes Opportunities to explore how objects move in air • Identifying objects being blown around outdoors • Observing how different objects fall e.g. scarves, feathers • Observing how toys/objects move in the wind e.g. streamers, balloons, pinwheels, bubbles etc. • Comparing the movements of a ball and a balloon when bouncing or throwing and catching Opportunities to explore how objects move in water • Exploring how a marble moves through different liquids in sealed bottles • Observing how sailing boats move through water **Earth and space:** Opportunities to learn about the Earth, Sun, Moon, planets and stars • Observing that the Sun appears to move across the sky • Observing that it is warmer and brighter when the Sun is shining than when it is behind the clouds • Observing that they can see the Moon at night and sometimes in the day • Observing that they can only see the stars at night		

	• Making model planets e.g. with papier-mâché or Modroc and balloons • Modelling a cratered moon landscape with papier-mâché or Modroc • Observing distant objects, including the Moon, with binoculars or a small telescope • Sharing books and video clips about the Earth, Sun, Moon, planets and stars • Talking about what happens and what they can see and hear in the daytime and at night • Sorting small world animals into those that are active in the daytime and those that are active at night Opportunities to learn about space travel • Joining materials to make model rockets, Moon buggies/Mars rovers and space stations • Making and testing simple air-propelled card or plastic bottle rockets • Sharing books and video clips about space exploration including video clips of astronauts walking on the Moon and floating in the space station		
Books you could use	**Humans** Other texts • I Love My Hair by Natasha Anastasia Tarpley • What I Like About Me by Alia Zobel-Nolan **Seasonal changes** Traditional stories and nursery rhymes • Rain, Rain Go Away • Rain on the Green Grass • It's Raining, It's Pouring • I Hear Thunder	**Animals** Other texts • Lost and Found by Oliver Jeffers • Shark in the Park by Nick Sharratt • One Day on our Blue Planet: In the Antarctic by Ella Bailey • Poles Apart by Jeanne Willis • Monkey with a Bright Blue Bottom by Steve Smallman • Walking through the Jungle by Julie Lacome • How many legs? by Kes Gray	**Plants** • Jack and the Beanstalk • The Giant Turnip

	Other texts • Seasons by Anna Pang • Autumn is Here by Heidi Pross Gray • Spring is Here by Will Hillenbrand • One Springy Day by Nick Butterworth • WOW! It's Night-time by Tim Hopgood • Tree - Seasons Come, Seasons Go by Britta Teckentup **Light** Other texts • Suddenly by Colin McNaughton • Where is the Dragon? By Leo Timmers **Sound** Traditional stories and nursery rhymes • One Coconut, Two Coconuts • Pass the Secret Round Other texts • Splish, Splash, Splosh by Mick Manning • Alfie's Weather by Shirley Hughes • Polar Bear, Polar Bear, What Do You Hear? by Eric Carle • The Very Quiet Cricket by Eric Carle • The Very Clumsy Click Beetle by Eric Carle **Forces** Traditional stories and nursery rhymes • Billy Goats Gruff • Gingerbread Man (making boats to cross the river) Other texts • Mr Gumpy's Outing by John Burningham • Mr Archimedes' Bath by Pamela Allen • Who sank the boat? by Pamela Allen • Stickman by Julia Donaldson • Flotsam by David Wiesner • Blown Away by Rob Biddulph **Earth and space**	• What do you do with a tail like this? by Steve Jenkins • The Rainbow Bear by Michael Morpurgo • We're Going on a Bear Hunt by Michael Rosen and Helen Oxenbury • Bears by Sally Morgan • Usborne Beginners Bears by Helen Helbrough **Materials:** • The three little pigs **Habitats** Traditional stories and nursery rhymes • Incey, Wincey Spider • Ladybird, Ladybird Fly Away Home Other texts • Bad-Tempered Ladybird by Eric Carle • Mad About Minibeasts by David Wojtowycz & Giles Andreae • Ben Plants a Butterfly Garden by Kate Petty • Norman the Slug with the Silly Shell by Sue Hendra • Aargh a Spider by Lydia Monks • Insects: A Close-up Look by Peter Seymour • Down at the Cool of the Pool by Tony Mitton • Over and Under the Pond by Kate Messner • Red Knit Cap Girl by Naoko Stoop	

	Traditional stories, songs and nursery rhymes • Twinkle, Twinkle Little Star Other texts • Whatever Next! by Jill Murphy • Astro Girl by Ken Wilson-Max • Look Up! by Nathan Bryon • How to Catch a Star by Oliver Jeffers • Owl Babies by Martin Waddell		
Trips / Visitors	Church School grounds- sound walk School library	Thetford Town walk Thetford Library	Visit a farm- South Angle farm
Prior knowledge check	Reception Baseline Class discussion	Class discussion	Class discussion
Assessment	Pupil Asset, The Natural World: ▪ Emerging ▪ Expected ▪ Exceeding	Pupil Asset, The Natural World: ▪ Emerging ▪ Expected ▪ Exceeding	Pupil Asset, The Natural World: ▪ Emerging ▪ Expected ▪ Exceeding

YEAR R	**Person** 	**Blossom** 	**Planet** 
	Humans: Model and encourage children to use vocabulary such as:	**Animals:** Model and encourage children to use vocabulary such as:	**Plants:** • plant, leaf, stem, branch, root, bark, flower, petal, seed, berry, fruit, vegetable, bulb, plant,

Vocabulary	• hair (black, brown, dark, light, blonde, ginger, grey, white, long, short, straight, curly), eyes (blue, brown, green, grey), skin (black, brown, white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother, grandfather, cousin, friend, family, boy, girl, man, woman Expose children to supplementary vocabulary such as: • bald, elderly, wrinkles, male, female, freckles **Seasonal changes:** Model and encourage children to use vocabulary such as: • spring, summer, autumn, winter, seasons, sunny, cloudy, hot, warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, windy, rainbow, animals, young, plants, flowers Expose children to supplementary vocabulary such as: • hibernate, migrate, snowflake **Light:** Model and encourage children to use vocabulary such as: • Sun, sunny, light, shadow, shady, clouds, torch, see-through, non-see-through, source, light source Expose children to supplementary vocabulary such as: • casting a shadow, pale, dark, transparent, opaque **Sound:**	• names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice Expose children to supplementary vocabulary such as: • environment, polar regions, ocean, camouflage **Habitats**: Model and encourage children to use vocabulary such as: • plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment e.g. beach, forest Expose children to supplementary vocabulary such as: • environment **Materials:** Model and encourage children to use vocabulary such as: • ice, water, frozen, icicle, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back Expose children to supplementary vocabulary such as: • solid, liquid, gas, most suited	hole, dig, water, weed, grow, shoot, die, dead, soil, names of plants they grow Expose children to supplementary vocabulary such as: • seedling, healthy, unhealthy, strong, sturdy, wilting, decay, mould, life cycle

	Model and encourage children to use vocabulary such as: • sound, noise, listen, hear, music, voices, bird song, traffic, sirens, thunder, high, low, loud, quiet, soft, volume, crackle, thunder, hum, buzz, roar Expose children to supplementary vocabulary such as: • source, crescendo, vibration, pitch **Forces:** Model and encourage children to use vocabulary such as: • float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow, bounce Expose children to supplementary vocabulary such as: • force, rotate, solid, liquid, gravity **Earth and space:** Model and encourage children to use vocabulary such as: • Sun, Moon, Earth, star, planet, sky, day, night, space, round, bounce, float Expose children to supplementary vocabulary such as: • sunrise, sunset, astronaut, astronomer, constellation, orbit, nocturnal, slow-motion, magnify		
Sentence Stems	**Knowledge:** I understand that… I know that… I wonder if… The picture reminds me of… The most important idea is…		**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…?

	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…	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…