Learning in EYFS

Science

In planning and guiding what children learn, practitioners will reflect on the different rates at which children are developing and adjust their practice appropriately, referring to the Characteristics of Effective Teaching and Learning
These are: **playing and exploring** – children investigate and experience things, and 'have a go'; **active learning** – children concentrate and keep on trying if they encounter difficulties, and enjoy their achievements for their own sake; **creating and thinking critically** – children have and develop their own ideas, make links between ideas, and develop strategies for doing things.
In addition, the Prime Areas of Learning (Personal, Social and Emotional Development, Communication and Language and Physical Development) underpin and are an integral part of children's learning in all areas.

Science		
Three and Four-Year-Olds	Communication and Language	• Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
	Personal, Social and Emotional Development	• Make healthy choices about food, drink, activity and tooth brushing.
	Understanding the World	• Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family's history. • Explore how things work. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice.
Reception	Communication and Language	• Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts.
Reception	Personal, Social and Emotional Development	• Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian

	Understanding the World		• Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them.
ELG (On track – meeting ARE)	Communication and Language	Listening, Attention and Understanding	• Make comments about what they have heard and ask questions to clarify their understanding.
	Personal, Social and Emotional Development	Managing Self	• Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.
	Understanding the World	The Natural World	• 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.

Autumn **Understanding the World**	Spring **Understanding the World**	Summer **Understanding the World**
• Children can observe changes in the local environment throughout autumn and winter • Children know that there are four seasons. • Children can name the seasons and discuss features of each. • Children know and can describe different weathers. • Children know how to keep their bodies healthy, e.g. eating healthy food, exercising, screen-time, etc. • Children know the names of body parts. • Children can explore using their five senses. • Children can observe their own features	• Children know that plants grow from a seed. • Children know that plants need water, soil and sun to grow. • Children can explore and describe some different materials. • Children can use their senses to describe different materials. • Children will explain why they have chosen the materials they have. • Children will explore mirrors, magnifying glasses and magnets. • Children know that some things can change, e.g. water into ice, chocolate can be melted, etc. Ice melting experiment.	• Children will make observations of different animals and be able to use specific vocabulary to describe them. • Children know how plants grow and can explain this to an adult. • Children will grow their own plant from a seed. • Children know that some things can change, e.g. water into ice, chocolate can be melted, etc. Children will be able to explain and describe these changes. • Children observe, comment on and make recordings of a lifecycle (chicks and butterflies).

Scientific Enquiry (also linked to CofETL)

• Provide children with have frequent opportunities for outdoor play and exploration.
• Encourage interactions with the outdoors to foster curiosity and give children freedom to touch, smell and hear the natural world around them during hands-on experiences.
• Encourage focused observation of the natural world.
• Listen to children describing and commenting on things they have seen whilst outside, including plants and animals.
• Encourage positive interaction with the outside world, offering children a chance to take supported risks, appropriate to themselves and the environment within which they are in.

Assessment

- Can children talk about and draw what they can see?
- Can children describe their environment and comment on contrasting environments from books?
- Can children describe what changes in each season?

Vocabulary

- **Plants:** tree, petals, trunk, fruit, branch, roots, leaves, bulb, flowers, seed, stem
- **Animals including humans:** human, face, hair, leg, elbow, arm, head, toes, ear, hands, eye, fingers, ankle, wrist, hips, back, knee, mouth, nose, animal, fish, birds
- **Seasons:** Summer, Spring, Autumn, Winter, day, dark, light, night, season, moon, sun

Continuous Provision – available throughout the day for both focussed and self-chosen learning

- Experience, observe and talk about different plants and their features
- Interesting objects that the children can observe and find out how they work
- Explore objects using their senses to find out about how things feel, look, sound, taste and smell
- After physical experiences, observe adults and then use vocabulary to describe:
  taste – bitter, sweet, salty, sour, tangy
  sound – loud, quiet, shout, whisper, hum, ring, bang, rustle
  texture – soft, hard, spiky, smooth, sharp, sticky, rough, gooey
  smell – perfume, fresh linen, manure, sweet, flowery
- Junk materials to build and construct models
- Ways of joining – tape, glue, staples, string, split pins, clips, paperclips, pipe cleaners
- Range of tools – scissors, food preparation tools, peeler, grater, rolling pin, safety scissors, safety knives, clay tools, playdoh tools, hole punch
- Construct with purpose in mind – create something which links to the learning/topic
- Paper and pencils/pens/crayons for making designs before constructing
- Paper and pencils/pens/crayons for drawing a simple picture of their model. Sticky notes for labels
- Discussions with the children about how they made their model, what they used and how they would improve it next time

Areas of Continuous Provision

Indoors

- Construction Area – Building using different materials
- Creative – range of opportunities to explore, observe and talk about materials and their properties – man made or natural. Materials: soft, hard, rough, smooth, fluffy, bumpy, slimy, sticky, wet, dry, stiff, bendy, crunchy. Role Play – senses in Home Corner. Different smelling flowers, fruit and vegetables to try at the kitchen table, different musical instruments for lullabies
- Malleable/Playdoh – make own malleable materials and encourage to change how they appear (e.g. add glitter to homemade playdoh)
- Snack –
- Small World – interact with objects that move by pulling, pushing, wheeled vehicles, toys with moving parts. Discuss how they move and why they move
- Mark Making/Writing – recording observations and findings – 'being a scientist'
- Reading – Use books, photographs and technology to find out about the world in which they live
- Sand – explore the texture of wet and dry sand. What is the best for making patterns in? What is best for a toy truck to lift? Explore real sand compared to mouldable sand, water resistant sand, etc. Explore the movement of sand using different equipment. Explore separating sand mixed with different objects e.g. sequins, rice, buttons or pebbles
- Water/Mud Kitchen – Explore different ways in which water moves. Explore how water changes when different things are added e.g. oil, Geli Baff, food colouring, etc..

Outdoors

- Large Construction – explore and talk about the way our bodies move using vocabulary such as faster, slower, fast, slowly. Compare and contrast movement when building using construction materials. Talk about movements over/under construction materials
- Role Play – science lab
- Water – drainpipes, tubes, plastic bottles, pipettes, funnels, coloured water, glitter, separating mixtures
- Outdoor/Woodland – natural materials to be provided: leaves, sticks, logs, pebbles, stones

Outdoor Learning

- Welly walks
- Farm trip
- Litter picking
- Snow walk
- Melting snow/ice outdoors
- Keeping hot chocolate warm outside
- Bird watching
- Explore club

Key Questions – provide opportunities to develop curiosity, where adults can model questions and children can ask questions.

Describe

- *What is it like?*
- How does ____ look, taste, feel, sound, smell?
- Can you show me…?
- Can you tell me about…?
- Can you tell me which…?
- Can you describe…?

- *What's happening?*
- What's happening here?
- What happens when you…?
- Can you tell me what…?
- How does that work?
- What did you notice when you…?

- *Compare and contrast:*
- What is the same about…?
- What is different…?
- Which ones…?

Why?

- *Why it happened?*
- Why did…?
- Why do you think…?
- Why do you think… is happening/happened?
- Can you tell me why…?
- Tell me why…?

I Wonder

- *What could we do next?*
- I wonder if…?
- What if…?
- What will happen if we…?
- How can you make…?
- How can you show…?
- How could we find out if…?
- Can you find another way that will…?
- Can you think of another way…?
- How could we improve…?
- Can you create/invent/design…?