SJB Science Curriculum

Succeeding, Enjoying, Belonging

	ELG's	How this is achieved in EYFS - Nursery	Science KS1	
			Year 1	Year 2
Specific Area of Learning **Understanding the World**	**Physical Development** **3 to 4 year olds will be learning to:** • Make healthy choices about food, drink, activity and toothbrushing **Understanding the World** **3 to 4 year olds will be learning to:** • 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 • 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 the different forces they can feel • Talk about the differences between materials and changes they notice	• Discussions at snack time and lunch time of the importance of healthy choices • P.E lessons that encourage getting dressed and undressed independently. • Discussion in P.E lessons about changes to the body during exercise • Naming body parts through songs – Heads, shoulders, knees and toes. • Small world play and role play for different animals and habitats, talking about pets at home. • Exploring minibeasts, shells etc and recording our observations. • Real life experiences of life cycles (caterpillars in nursery) • Look at Planet Earth - why is it special? • Experiment with light and dark. Where does light come from?	Animals, including humans Plants Seasonal changes Everyday materials Living things and their habitats Uses of everyday materials	
	The Natural World ELG **Early Learning Goal at the end of EYFS:** **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.**	• Going on walks to in the school grounds to compare and learn about the seasons. • Look at nocturnal animals • Look at photos and videos to compare seasons and discuss. • Look at and compare seasonal seeds and fruits • Planting seeds and plants • Creating bug hotels • Observational drawings of plants • Artwork created using natural materials encouraging close observation of features • Observe natural decay of plants and discuss changes over time. • Water tray activities to explore water, ice, and materials that float and sink. • Light box • Changes of state e.g. playdough, clay, baking bread, Halloween potions • Messy play, e.g. gloop, jelly, bubbles.		

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	ELG's	How this is achieved in EYFS - Reception	Science KS1	
			Year 1	Year 2
Specific Area of Learning **Understanding the World**	**Physical Development** **Children in Reception will be Learning to:** • Know and talk about the different factors that support their overall health and wellbeing **Children in Reception will be Learning to:** • Explore the natural world around them • Describe what they see, hear and feel whilst being 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	• Discussions at snack time and lunch time of the importance of healthy food choices. • Direct teaching of 'Healthy Living' topic • P.E lessons that encourage getting dressed and undressed independently. • Discussion in P.E lessons about changes to the body during exercise - increased breath, heart beat, colouring etc • Increased range of body parts to be named– e.g. joints (elbow, knee, hip, neck), • Small world play and role play for different animals and habitats, link to globe • Compare and contrast 2 environments eg arctic and desert • Exploring minibeasts, shells etc and recording our observations. • Real life experiences of life cycles (chicks in reception).	Animals, including humans Plants Seasonal changes Everyday materials Living things and their habitats Uses of everyday materials	
	The Natural World ELG Early Learning Goal at the end of EYFS: 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.	• Going on walks to observe the local environment and to compare and learn about the seasons. • Look at photos and clips to compare seasons and discuss. • Look at and compare seasonal seeds and fruits • Planting seeds and plants • Creating bug hotels • Observational drawings of plants • Artwork created using natural materials encouraging close observation of features • Observe natural decay of plants and discuss changes over time. • Making boats from various materials and testing them. • Water tray activities to explore water, ice, and materials that float and sink. • Changes of state e.g. playdough, clay, baking. • Messy play, e.g. gloop, jelly, bubbles.		

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Year 1			
	Y1 Seasonal change - 1. What are the four seasons? 2. What's the weather like in Autumn, Winter, Spring and Summer? 3. Why does day become night? **Y1 Plants -** 1. What are the parts of a plant? 2. What are wild plants and where do you find them? 3. What are garden plants and where do find you them? 4. What makes a tree? 5. What trees live around my school? 6. What's the difference between trees?	**Y1 Animals, including humans-** 1. What is an animal? 2. What types of animals are there? - Mammals, Birds 3. What types of animals are there? - Amphibians, Reptiles, Fish 4. What is similar and what is different? 5. What does food tell us about an animal? 6. What makes me an animal? What senses do I have? **Y1 Animals including Humans Revisit- 3 sessions**	**Y1 Everyday materials -** 1. What are materials? 2. What are things made of in school? 3. How can I describe materials? 4. Which materials are waterproof, and which are not? 5. Which materials are transparent, and which are opaque? 6. What's the best material for the job? Why? **Y1 Plants Revisit - 2 sessions**
	• 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		

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Year 2

Y2 Living things and their habitats -

1. What is alive and what is not?
2. What do all living things have in common?
3. Where do plants and animals live?
4. What plants and animals live in our local environment?
5. What are food chains? How are they connected?
6. Why do plants and animals need each other?

Y2 Uses of everyday materials -

1. What are materials used for? Categorise and compare wood, metal, plastic and glass.
2. What are materials used for? Categorise and compare ceramics, rock, paper and card, and fabric.
3. What happens when we squash, bend, twist or stretch a material?
4. What's the right material for the job?
5. What's the best absorbent material?
6. Who invented waterproofing?

Y2 Living Things & habitats Revisit - 3 sessions

Y2 Materials Revisit - 3 sessions

Y2 Plants -

1. How do seeds germinate and what happens?
2. What happens when bulbs sprout?
3. What do plants need to thrive and be healthy?
4. What can happen if plants don't get the things they need?
5. What do I notice about plants around the school? How are they healthy? How are they unhealthy?
6. Show what you know How do seeds and bulbs grow? What do plants need to be healthy?

Y2 Animals, including humans -

1. REMEMBER: what is an animal?
2. How do animals change as they mature?
3. How do we change as we mature?
4. What do all animals need to stay alive?
5. Keeping healthy: why do we exercise?
6. Keeping healthy: why do we eat different types of food?

Y2 Plants and Animals, including humans Revisit - 3 sessions

- 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

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Year 3			
	Y3 Rocks and fossils - 1. How are rocks formed? 2. What types of rocks are there? 3. Can rocks change? 4. How can we test a rock to see if it is limestone or chalk? 5. Is soil just dirt? What makes soil? 6. How are fossils formed? **Y3 Animals, including humans -** 1. What effect does the food we eat have? 2. Where is my skeleton and what does it do? 3. Where are my muscles and what do they do? **Y3 Rocks and fossils Revisit - 3 sessions**	**Y3 Forces and magnets -** 1. What are contact forces? 2. How do surfaces affect the motion of an object? 3. How does friction affect moving objects? 4. What is a non-contact force? How is this different to a contact force? 5. How do magnets attract and repel? 6. Which materials are magnetic? Forces and magnetism summary **Y3 Light** - 1. Do we need light to see things? Remember: what are light sources and what are not light sources? 2. How are shadows formed? 3. What happens to the size of a shadow when the object moves closer to, or away from, the light source?	**Y3 Plants -** 1. What are the parts of a flowering plant? What do they do? 2. Do all plants need the same things to thrive and grow? 3. How do leaves make food for the plant? 4. How does water move through a plant? 5. What do flowers do? 6. What is pollination?
	• Ask relevant questions • Set up simple, practical enquiries and comparative and fair tests • Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests • Identify differences, similarities or changes related to simple, scientific ideas and processes		

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Year 4			
	Y4 Living things and their habitats - 1. What are the characteristics of living things? 2. What animals are vertebrates? 3. What animals are invertebrates? 4. What groups are plants classified in? 5. What is classification? How do I use a key? 6. What happens if the environment in a habitat changes? **Y4 Electricity -** 1. What appliances use electricity? What sort of power makes them work? 2. What are the components in a simple series circuit? – what happens when a circuit is open or closed? 3. What are the effects of changing circuit components and batteries?	**Y4 Animals, including humans -** 1. What teeth do humans have? What do they do? 2. How does our mouth and teeth help digestion? What's the process? 3. Can teeth tell us what animals eat? **Y4 Animals, including humans -** 1. What are the parts of the digestive system? What do they do? 2. How does digestion work? 3. What's the process? **Y4 Animals, including humans -** 1. What are food chains How do they work? 2. How do I construct and interpret a food chain? 3. How are teeth, digestion and food chains connected?	**Y4 States of matter -** 1. What is matter? What does 'state' mean? 2. What are solids, liquids and gases? 3. Melting: how do materials change state? 4. Evaporating: how do materials change state? 5. Condensing: how do materials change state? 6. Summary: how do materials change their state of matter? **Y4 Sound** - 1. What is sound? 2. How does sound travel? 3. What is the pitch and loudness of sound?
	• Ask relevant questions • Set up simple, practical enquiries and comparative and fair tests • Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests • Identify differences, similarities or changes related to simple, scientific ideas and processes		

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Year 5

Y5 Living things and their habitats -

1. Life cycle differences – what's the difference between a mammal and an amphibian?
2. Life cycle differences – what's the difference between an insect and a bird?
3. What is similar and what is different between the life cycles of a mammal, an insect, an amphibian and a bird?
4. Summer birds – who was Maria Merion and what did she do?
5. The science of life - how do living things reproduce?
6. Plants and animals: what's the life process of reproduction?

Y5 Living things and their habitats Revisit - 3 sessions

Y5 Earth and space -

1. What are the planets in our solar system?
2. How does our view of the Moon change in a lunar month?
3. How does our view of the Moon change in a lunar month?
4. Why does the rotation of Earth result in night and day?
5. Why is the Earth's tilt (axis) responsible for the seasons?
6. Review and summarise - present what you know about Earth and Space

Y5 Animals, including humans -

1. What is the human timeline?
2. How do we change into adults?
3. How does human and animal lifespan compare?

Y5 Properties and changes of materials -

1. What properties do materials have? How do we use them?
2. What is a solution and what is a mixture?
3. How can we separate materials from a mixture?
4. How can we separate materials from a solution?
5. What changes are reversible?
6. What changes are irreversible?

Y5 Forces -

1. Remember gravity When is friction helpful and when is it not?
2. What's the effect of air resistance?
3. What's the effect of water resistance?
4. How do levers help us?
5. How do pulleys and gears help us?
6. Who was Galileo Galilei?

- Plan enquiries, including recognising and controlling variables where necessary
- Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models
- Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions
- Present findings in written form, displays and other presentations
- Use test results to make predictions to set up further comparative and fair tests
- Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments

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Year 6

Y6 Living things and their habitats -

1. Who was the scientist Carl Linnaeus and what did he do?
2. How do we classify vertebrates?
3. How do we classify invertebrates we know?
4. How do we classify invertebrates we don't know?
5. How do we classify invertebrates we don't know?
6. Apply it: what animals can I classify? What animals and plants exist in my local environment?

Y6 Light -

1. How does light travel?
2. What colour is light made of?
3. Reflection - how does light help us to see objects?
4. Which surfaces make the best reflectors?
5. Why do we see objects as a particular colour?
6. What happens to the appearance of objects when placed in water?

Y6 Animals, including humans -

1. What is blood made of and why do we need it?
2. Why do our bodies need nutrients and how are they transported?
3. What is our circulatory system?
4. What is our heart like inside?
5. How does it work?
6. Who influenced what we know about our circulatory system?
7. What can we do to keep healthy?
8. What can we do to keep healthy?
9. Present and explain what we know about the circulatory system, nutrients and keeping healthy

Y6 Electricity -

1. What is electricity? How does it work? How do we build and represent a series circuit?
2. What are the components in a series circuit? How does the number of cells and voltage affect components in a circuit?
3. What are the effects and consequences of changing circuit components and batteries?

Y6 Evolution and inheritance -

1. How have living things changed over time? How do we know?
2. How has life evolved over time?
3. What is DNA and what does it do?
4. Are all offspring identical to their parents?
5. Darwin and Wallace – what evidence did they share to argue the case for evolution?
6. Survival of the fittest - how have animals adapted and evolved to suit their environment?

Y6 Animals, including humans -

1. Remember circulation and digestion: how are these two systems connected?
2. Where are the kidneys and what do they do?
3. How do kidneys keep us healthy?

- Plan enquiries, including recognising and controlling variables where necessary
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