What does Science look like in EYFS?

The Journey Begins…

In F1 and F2. our natural curiosity is encouraged, and we get to explore and experience the world through play. Science is part of the strand 'Understanding the World', and focuses on things we may encounter in our daily lives. We are supported to question what we see, and are helped to explain our ideas using what we know. All of the experiences we have in EYFS will help give use the knowledge and understanding we'll need for the science we'll do in KS1.

We use talk to connect our ideas, explain what is happening and anticipate what might happen next.

Biology-related experiences

Animals

Food

Health and safety

We observe the effects of activity on our bodies.

We practice some appropriate safety measures without direct supervision.

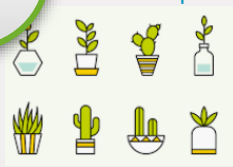
Insects

We are beginning to use more complex sentences to link our thoughts (e.g. using and, because).

We show some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.

We build up a vocabulary that reflects the breadth of our experiences.

Plants



We question why things happen and give explanations. We ask e.g. who, what, when, how.

Weather and the seasons

Physics-related experiences

Our body and the senses

We understand that equipment and tools have to be used safely.

We show an interest in objects and technological toys with knobs or pulleys.

Machines

We are confident to speak to others about our own interests and opinions.

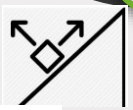
Forces

Space

Chemistry-related experiences

Materials

We show understanding of the need for safety when tackling new challenges, and we consider and manage some risks.



We use talk to organise, sequence and clarify our thinking, ideas, feelings and events.

…Ready for KS1

Hillocks Primary Academy

Diverse Academies

What does Science look like in KS1?

The Journey Continues...

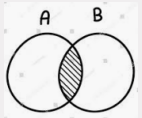
In Years 1 and 2, we realise that science is how we come to understand the world around us. We learn about things we experience everyday, such as our bodies, the natural world and materials. We are taught to observe objects, materials and living things carefully and we describe what we see. We ask simple questions about the things we notice and we recognise that they can be answered in different ways.

Edward Jenner

We use simple, non-standard measurements in practical tasks.

Marie Curie

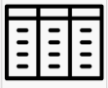
We can identify simple patterns and/or relationships.



Biology

- Growth and care of animals
- All about me – body parts and senses
- All about me – the function of internal systems
- Diet and health

We can identify and classify familiar objects, materials and creatures.



We use our observations and ideas to suggest answers to questions.

We can explain, with help, what we think we have found out.

We gather and recording data to help us answer questions.

- Common plants – identifying and naming
- Growth and care of plants
- Environments and habitats
- Seasonal changes – plants and animals

In Forest Schools, we'll continue to develop our understanding of the natural world.

We can observe something closely and describe changes over time.

Mae Jemison

We use simple equipment, such as hand lenses or egg timers to take measurements, make observations and carry out simple tests.

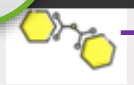
We do things in the correct order when performing a simple test and begin to recognise when something is unfair.

Physics

We'll have the opportunity to meet lots of animals.

We use simple scientific language.

- Exploring everyday materials – naming and forces
- Seasonal changes - weather
- Chemistry
- Uses of everyday materials - properties



We follow instructions to complete a simple test individually or in a group.

John Dunlop

...Ready for LKS2

Hillocks Primary Academy

Diverse Academies

What does Science look like in LKS2?

The Journey Continues...

In Years 3 and 4. we become accurate and careful observers and recorders of both our investigations and findings. We know a range of ways our scientific questions can be answered, and we're supported to test out our own ideas. We learn how to create tables and graphs of our data, and can write clearly about what we've experienced and noticed during class enquiries.

Louis Pasteur

Biology

- What makes us? – brain, muscles, skeleton
- Food and digestion (including teeth)
- Life cycles of plants
- Nature and the environment – human impact

We can discuss enquiry methods and describe a fair test.

We begin to see patterns and relationships between ideas and information.

We record our findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.

Rachel Carson

We ask relevant questions and are supported in carrying out different types of scientific enquiries to answer them.

We use our prior knowledge to pose questions, independently, about the world around us.

We can set up simple practical enquiries, comparative and fair tests

We make systematic and careful observations.

Anders Celcius

Physics

- Electricity – simple circuits
- Light
- Classifying living things and their habitats

We can create our own simple keys.

We take accurate measurements using standard units, using a range of equipment, including thermometers and measuring cylinders.

Chemistry

- Sound
- Forces and magnets
- States of matter – solids, liquids, gases
- Rocks – the rock cycle

We use straightforward scientific evidence to answer questions or to support our findings.

We can identify differences, similarities or changes related to simple scientific ideas and processes.

We can make decisions about how to carry out enquiries, including recognising when a fair test is necessary and begin to identify variables.

We can draw, with help, a simple conclusion based on evidence from an enquiry or observation.

Albert Einstein

We make decisions about what to observe during an investigation.

We use recorded data to make predictions, pose new questions and suggest improvements for further enquiries.

We can gather, record, classify and present data in a variety of ways to help us answer questions

...Ready for UKS2

Hillocks Primary Academy

Diverse Academies

What does Science look like in UKS2?

The Journey Continues...

In Years 5 and 6, we become independent scientists. We learn to use our prior knowledge to create hypotheses, thinking carefully about what we already know and applying knowledge of increasing complexity. We have reached the point in our journey where we will make our own decisions about how to investigate and present a range of scientific concepts.

We can select the most appropriate line of enquiry to investigate.

We ask thoughtful questions about our results.

Mary Anning

We can take accurate measurements, using a range of scientific equipment.

Charles Darwin

Sir David Attenborough

Biology

Circulatory system, bacteria, viruses and health.

Human life cycle

Evolution and inheritance

Ecosystems and habitats

The classification system

Plant reproduction and structures

Physics

Earth and space

Light – reflection, refraction and optics

Electricity

Forces – resistance, gears, levers and pulleys

Chemistry

Reversible and irreversible changes

We decide how long to take measurements for, and will check our results with additional readings.

We use and develop keys to identify, classify and describe living things and materials.

We can identify and explain patterns seen in the natural environment.

Dame Jane Goodall

We can identify and explain causal relationships in data and identify evidence that supports or refutes our findings, selecting fact from opinion.

UKS2 build links with University of Nottingham – science days

Nicolaus Copernicus

We can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs.

Katherine Johnson

We are able to recognise and control variables in tests.

We write clear conclusions of our findings.

We use relevant scientific language and illustrations to discuss, communicate and justify our scientific ideas.

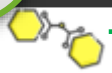
Carl Linnaeus

Y5 build links with SCA – chemistry lessons in the lab

We plan and carry out comparative and fair tests, making systematic and careful observations.

Sir Isaac Newton

Galileo Galilei



We can use our test results and observations to make predictions or set up further tests.

We are able to discuss how scientific ideas develop over time.

...Ready for KS3

Hillocks Primary Academy

Diverse Academies

Science

Hillocks Primary Academy

	KS1 Years 1 & 2	LKS2 Years 3 & 4	UKS2 Years 5 & 6
Significant scientists	Mae Jemison; Marie Curie; John Dunlop; Charles Macintosh	Louis Pasteur; Anders Celsius; Albert Einstein; Rachel Carson	Carl Linnaeus; Galileo Galilei; Mary Anning; Charles Darwin
Animals including humans	Growth & care; Diet & health; All about me—body parts and senses	What makes us? Brains, muscles & skeleton; Classification; Digestion & teeth; Nutrition	Human life cycle; The classification system; Bacteria & viruses; Circulatory system
Ecology and Conservation	Environments & habitats	Human impact; Interdependence	Ecosystems; Climate Change
Evolution and inheritance		What are fossils?	Adaptation & variation; Tree of Life; The fossil record
Plants	Common plants – deciduous & evergreen; Growth & care- basic needs	Life cycles (including seed dispersal.); Vascular & non-vascular	Reproduction & structures
Space	The moon; Names of planets		Gravitational force; Planetary Motion; The Big Bang
Electricity	Safety with electricity & appliances; Series circuits	Circuit symbols; Series & parallel; Conductors & insulators	More complex circuits; Circuit diagrams with standardised symbols
Forces	Pushes, pulls and twists	Magnetism; Friction	Resistance in air & water; Gears, levers & pulleys
Seasonal Changes	Effects of seasons on animals & plants; Weather		
Light		Formation of shadows; Light sources; How does light travel?	Reflection, refraction & optics; The structure of the eye
Sound		How do we hear?; The structure of the ear; How does sound travel?	
Rocks and soils		The rock cycle; Weathering & erosion	
States of matter & materials	Properties of materials; Uses of everyday materials	Solids, liquids & gases; Freezing & melting; The water cycle	Reversible & irreversible changes