EYFS Essential Science Vocabulary

Main Area (Essential Key Words)	Additional Vocabulary
Animals	• body parts (head, arms, hands, fingers, legs, feet, toes) • body parts linked to senses (eyes, nose, mouth, ears, hands) • animal • human • bird • fish
Plants	• tree (trunk, branch) • flower (stem, petals) • leaf • roots • seed • bulb • fruit • vegetables
Materials	• material • wood • glass • paper • plastic • metal • rock • fabric • property words (hard, soft, shiny, rough, smooth)
Seasons	• season • summer • spring • autumn • winter • day • night • sun • moon • light • dark
Experiment	• find out • explain • change

YEAR 1 **National Curriculum Objectives**	**ESSENTIAL KNOWLEDGE** (KS1 Interim Statements)
Seasonal Changes • observe the apparent movement of the sun during the day • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies	• describe seasonal changes
Animals Inc. Humans • identify and name a variety of common animals that are birds, fish, amphibians, reptiles and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles and mammals, including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	• name and locate parts of the human body, including those related to the senses • describe and compare the observable features of animals from a range of groups • group animals according to what they eat
Plants • identify and name a variety of common plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees	• No interim statements for Y1.
Identifying Everyday Materials • distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock • describe simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties	• distinguish objects from materials, describe their properties • identify and group everyday materials

Working Scientifically

ESSENTIAL SKILLS

Using appropriate scientific language from the NC pupils can:

- ask their own questions about what they notice
- use different types of scientific enquiry to gather and record data, using simple equipment where appropriate, to answer questions:
  - observing changes over time
  - noticing patterns
  - grouping and classifying things
  - carrying out simple comparative tests
  - finding things out using secondary sources of information
- communicate their ideas, what they do and what they find out in a variety of ways.

YEAR 2 National Curriculum Objectives	**ESSENTIAL KNOWLEDGE** (KS1 Interim Statements)
Living Thing & 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 microhabitats • 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.	• identify whether things are alive, dead or have never lived • describe how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships • name different plants and animals and describe how they are suited to different habitats
Animals Inc. Humans • notice that animals, including humans, have offspring which grow into adults • find out about & describe the basic needs of animals, inc. humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different food types, and hygiene	• describe the importance of exercise, a balanced diet and hygiene for humans • describe the basic needs of animals for survival and the main changes as young animals, including humans, grow into adults
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 /stay healthy	• describe the basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plants
Uses of Everyday Materials • identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard. • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	• compare materials' suitability for different uses

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*STATUTORY DATA INPUT:
Content and Working Scientifically data to be reported to LEA (summer term) along with reading, writing and maths.

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YEAR 3 National Curriculum Objectives	**ESSENTIAL KNOWLEDGE** (KS2 Interim Statements)
Light • recognise light is needed in order to see things and that dark is the absence of light. • notice that light is reflected from surfaces. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Recognise that shadows are formed when the light from a light source is blocked by a solid object. • Find patterns in the way that the size of shadows change.	• use the idea that light from light sources is needed for the formation of shadows and know why shadows of the same size object can be different sizes.
Forces & Magnets • compare how things move on different surfaces • notice that some forces need contact between two objects and some forces act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.	• describe the effects of simple forces that act at a distance (magnetic forces, including those between like and unlike magnetic poles)
Animals Inc. Humans • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • identify that humans & some animals have skeletons & muscles for support, protection and movement	• name and describe the musculoskeletal system
Plants • identify & describe the functions of different parts of flowering plants: roots, stem, leaves & flowers • explore the requirements for plant life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant • investigate the way in which water is transported within plants • explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	• name, locate and describe the functions of the main parts of plants, including transporting water and nutrients • describe the requirements of plants for life & growth
Rocks & Soils • compare & group together different kinds of rocks on the basis of appearance & simple physical properties. • describe in simple terms how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter.	• describe how fossils are formed • group and identify rocks in different ways according to their properties, based on first-hand observation
Working Scientifically ESSENTIAL SKILLS	Using appropriate scientific language from the NC pupils can: • describe and evaluate their own and others' scientific ideas related to topics in the NC (including ideas that have changed over time), using evidence from a range of sources • ask their own questions about the scientific phenomena that they are studying, and select the most appropriate ways to answer these questions, recognising and controlling variables where necessary (i.e. observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests, and finding things out using a wide range of secondary sources) • use a range of scientific equipment to take accurate and precise measurements or readings, with repeat readings where appropriate • record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • draw conclusions, explain and evaluate their methods and findings, communicating these in a variety of ways • raise further questions that could be investigated, based on their data and observations.

YEAR 4 National Curriculum Objectives	**ESSENTIAL KNOWLEDGE** (KS2 Interim Statements)
Electricity • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying/naming its basic parts, including cells, wires, bulbs, switches & buzzers. • identify whether or not a lamp will light in a simple series circuit based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens/closes a circuit & associate this with whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors.	• No interim statements for Y4.
Sound • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear. • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it. • recognise that sounds get fainter as the distance from the sound source increases	• describe the relationship between the pitch of a sound and the features of its source; and between the volume of a sound, the strength of the vibrations and the distance from its source • use the idea that sounds are associated with vibrations, and that they require a medium to travel through, to explain how sounds are made and heard
Animals Inc. Humans • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions. • construct and interpret a variety of food chains, identifying producers, predators and prey	• name and describe the functions of the main parts of the digestive system
Living Thing & Their Habitats • recognise that living things can be grouped in a variety of ways. • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. • recognise that environments can change and that this can sometimes pose dangers to living things.	• construct and interpret food chains • explain how environmental changes may have an impact on living things
States of Matter • compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	• describe the characteristics of different states of matter and group materials on this basis; • describe how materials change state at different temperatures, using this to explain everyday phenomena, including the water cycle

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YEAR 5 National Curriculum Objectives	**ESSENTIAL KNOWLEDGE** (KS2 Interim Statements)
Earth & Space • describe the movement of the earth, and other planets, relative to the sun in the solar system • describe the movement of the moon relative to the earth • describe the sun, earth and moon as approximately spherical bodies • use the idea of the earth's rotation to explain day and night and the apparent movement of the sun across the sky	• describe the shapes & relative movements of the Sun, Moon, Earth and other planets in the solar system; and explain the apparent movement of the sun across the sky in terms of the Earth's rotation and that this results in day and night
Forces • explain that unsupported objects fall towards the earth because of the force of gravity acting between earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognize that some mechanisms, including levers, pulleys & gears, allow a smaller force to have a greater effect	• describe the effects of simple forces that involve contact (air and water resistance, friction) and gravity • identify simple mechanisms, including levers, gears and pulleys, that increase the effect of a force
Animals Inc. Humans • describe the changes as humans develop to old age (link to school policy on sex education)	• describe and compare different reproductive processes and life cycles in animals
Living Thing & Their Habitats • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals (sexual / asexual)	• name, locate and describe the functions of the main parts of plants, including those involved in reproduction
Properties & Changes of Materials • compare and group together everyday materials on the basis of properties, e.g. their hardness, solubility, transparency, conductivity (electrical/thermal) and response to magnets • know that some materials dissolve in liquid to form a solution & describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • demonstrate that dissolving, mixing and changes of state are reversible changes • explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	• group and identify materials • justify the use of different everyday materials for different uses, based on their properties • identify, with reasons, whether changes in materials are reversible or not • identify and describe what happens when dissolving occurs in everyday situations; and describe how to separate mixtures and solutions into their components

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YEAR 6 National Curriculum Objectives	**ESSENTIAL KNOWLEDGE** (KS2 Interim Statements)
Light • recognise that light appears to travel in straight lines • use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • use the idea that light travels in straight lines to explain why shadows have the same shape as objects that cast them	• use the idea that light from light sources, or reflected light, travels in straight lines and enters our eyes to explain how we see objects • describe why shadows are certain shapes
Electricity • associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • use recognised symbols when representing a simple circuit in a diagram	• use simple apparatus to construct and control a series circuit, and describe how the circuit may be affected when changes are made to it; and use recognised symbols to represent simple series circuit diagrams
Animals Inc. Humans • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • describe the ways in which nutrients and water are transported within animals, including humans	• name and describe the circulatory system • describe the effects of diet, exercise, drugs and lifestyle on how the body functions
Evolution & Inheritance • recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary & are not identical to parents • identify how animals & plants are adapted to suit their environment in different ways & that adaptation may lead to evolution	• use the basic ideas of inheritance, variation and adaptation to describe how living things have changed over time and evolved • provide evidence for evolution
Living Thing & Their Habitats • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics.	• use the observable features of plants, animals and micro-organisms to group, classify and identify them into broad groups, using keys or other methods

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