KEY KNOWLEDGE PROGRESSION DOCUMENT – Science (Biology)

Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
All living things and their habitats	• SBN.1 know the name of some living things that are within the immediate natural environment **(S)** • SBN.2 know how to observe plants, animals, natural and found objects **(P)** • SBN.3 know how to care for living things and the environment **(P)**	• SBR.1 know and describe similarities and differences in relation to living things **(S)** • SBR2 know and describe the habitat of familiar woodland animals **(S)** • SBR.3 know and describe patterns and changes in nature **(S)** • SBR.4 know how human actions impact on the environment **(S)**		• SB2.1 know the differences between things that are living, dead and things that have never been alive **(S)** by exploring and comparing **(D)** • SB2.2 know 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 **(S)** • SB2.3 know and name a variety of plants and animals in their habitats, including microhabitats (both familiar and less familiar habitats (e.g. woodland/ocean) **(S)** • SB2.4 know how animals obtain their food from plants and other animals, using food chains, and identify and name different sources of food **(S)**		• SB4.1 know that living things can be grouped in a variety of ways **(S)** • SB4.2 know how to use classification keys **(P)** in order to group, identify and name a variety of living things in their local and wider environment **(D)** • SB4.3 know that environments can change and that this can sometimes pose dangers to living things **(S)**	• SB5.1 know the differences in the life cycles of a mammal, amphibian, insect and bird **(S)** • SB5.2 know the life process of reproduction in some plants and animals **(S)**	• SB6.1 know that living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals **(S)** • SB6.2 know how to classify plants and animals based on specific characteristics and give reasons for this **(D)**	• SB7.1 know how to construct food chains and food webs to investigate feeding relationships **(D)** • SB7.2 know how to classify within vertebrate and invertebrate groups **(D)** • SB7.3 know how to classify within the five different Kingdoms **(D)**

Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Animals, including humans	• SBN.4 know how to explore natural materials, using their senses **(P)** • SBN.5 know how to meet own care needs, (e.g. brushing teeth, using the toilet, washing and drying their hands thoroughly) **(P)** • SBN.6 know how to make healthy food and drink choices **(P)** • SBN.7 know how to look after teeth **(P)** • SBN.8 know how exercise makes us feel **(S)** • SBN.9 know what an animal is and talk about the life cycle **(S)**	• SBR.5 know and talk about the different factors that support overall health and wellbeing, (e.g. regular physical activity, healthy eating, having a good sleep routine) **(S)** • SBR.6 know the importance of oral hygiene **(S)** • SBR.7 know how to describe what they see, hear and feel **(P)** • SBR.8 know **(S),** observe and discuss the changes that occur in the life cycle of an animal **(D)**	• SB1.1 know and name a range of animals using fish, amphibians, reptiles, birds and mammals **(S)** • SB1.2 know and name a variety of common animals using what they eat (carnivore, herbivore and omnivore) **(S)** • SB1.3 know the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) by describing and comparing **(D)** • SB1.4 know, name, draw and label basic parts of the human body which can be seen **(S)** • SB1.5 know the five senses and which part of the body is associated with each one **(S)**	• SB2.5 know that young animals, including humans, grow into adults **(S)** • SB2.6 know the basic needs of animals, including humans, for survival (water, food, air) **(S)** • SB2.7 know why exercise, a balanced diet and good hygiene are important for humans **(S)**	• SB3.1 know 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 **(S)** • SB3.2 know humans and some other animals have skeletons and muscles for support, protection and movement **(S)**	• SB4.4 know the simple functions of the basic parts of the digestive system in humans **(S)** • SB4.5 know the different types of teeth in humans and their simple functions **(S)** • SB4.6 know how to construct and interpret a variety of food chains, identifying producers, predators and prey **(D)**	• SB5.3 know the changes as humans develop to old age **(S)**	• SB6.3 know and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood **(S)** • SB6.4 know the impact of diet, exercise, drugs and lifestyle on the way human bodies function **(S)** • SB6.5 know the ways in which nutrients and water are transported in animals, including humans **(S)**	• SB7.4 know the different parts of animal and plant cells **(S)** • SB7.5 know the different kind of specialised cells, their functions and adaptations **(S)** • SB7.6 know the differences between sexual and asexual reproduction **(S)** • SB7.7 know how females get pregnant and the stages of embryo development **(S)**

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Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Plants	• SBN.10 know what a seed is and that it will turn into a plant **(S)** • SBN.11 know how to plant a seed **(P)**	• SBR.9 know how to care for a plant, including water and light **(P)**	• SB1.6 know and name a variety of common wild and garden plants, including deciduous and evergreen trees **(S)** • SB1.7 know the basic structure of a variety of common flowering plants (petals/flowers/fruit, stem, leaves, root, bulb seed), including trees (trunk, branches, leaves) and describe them **(S)**	• SB2.8 know how seeds and bulbs grow into plants by observing and describing **(D)** • SB2.9 know what plants need in order to grow and stay healthy (water, light & suitable temperature) **(S)**	• SB3.3 know and describe the function of different parts of flowering plants: roots, stems, trunk, leaves and flowers **(S)** • SB3.4 know the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant **(S)** • SB3.5 know how water is transported within plants through investigation **(D)** • SB3.6 know the part that flowers play in the life cycle of flowering plants including pollination, seed formation and seed dispersal **(S)**				• SB7.8 know the equation for photosynthesis **(S)** and use it to identify factors needed for plant growth **(D)**

Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Evolution and Inheritance								• SB6.6 know that living things have changed over time and fossils provide information about living things that inhabited the Earth millions of years ago **(S)** • SB6.7 know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents **(S)** • SB6.8 know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution **(S)**	• SB7.9 know the roles that genes and environments have on characteristics **(S)**

Curriculum End Points

The KKPDs are the input to the curriculum. The curriculum end points are the output. Curriculum end points capture the knowledge, skills and understanding that children should have at the end of each year. They build progressively over time so that children leave Year 6 well-prepared for the next stage of education as competent and capable scientist.

For subject leaders, they provide a clear overview of the end of year expectations for each year group, which will support the planning and assessment of the curriculum.

For teachers, they provide further clarity around what children should be able to do at the end of each year, using the knowledge they have gained from being taught the KKPDs. They support teachers to plan activities that help to develop children as effective scientists. They should be used to check what children know and how well they can apply this knowledge across the curriculum.

For children, they ensure that they receive an equitable curriculum which gives them the substantive, procedural and disciplinary knowledge needed to be successful in their future studies.

End points are taken from the National Curriculum Teacher Assessment Framework for Key Stage 1 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1125249/2018-19_teacher_assessment_frameworks_at_the_end_of_key_stage_1.pdf) and Key Stage 2 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1119094/2018-19_teacher_assessment_frameworks_at_the_end_of_key_stage_2.pdf).

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Curriculum end points	Children should be able to... Recall the knowledge specified within the KKPDs for Nursery Identify or point out names of unfamiliar natural items or animals Talk about the natural world using appropriate vocabulary Understand and discuss the features of a life cycle Understand that their behaviour can have an effect on the natural world and that we need to care for our planet (e.g. recycling) Explain how to care for themselves, such as brushing their teeth Sort healthy and unhealthy foods, knowing the impact and effects they have on the body Talk about how seeds grow into plants	Children should be able to... Recall the knowledge specified within the KKPDs for Reception Know and talk about the different factors that support their overall health and wellbeing, drawing on their own experiences. E.g; food choices, hygiene, oral health etc. Identify some similarities and differences between the natural world around them and contrasting environments Identify similarities and differences between living things Understand some important processes and changes in the natural world around them, including the seasons Describe what plants need to survive To take care and protect the natural world e.g: watering the plants in the garden daily etc.	Children should be able to... Recall the knowledge specified within the KKPDs for Year 1 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 their types (e.g. reptiles, mammals, amphibians etc) Compare and contrasts a range of living and non-living things Describe and explain the structure of basic structure of plants/trees	Children should be able to... Recall the knowledge specified within the KKPDs for Year 2 Explain 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 Understand the basic needs of plants for survival and the consequence of changing these Identify whether things are alive, dead or have never lived Discuss how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships Compare and contrast different plants and animals and describe how they are suited to different habitats	Children should be able to... Recall the knowledge specified within the KKPDs for Year 3 Name, describe and explain the functions of the main parts of the musculoskeletal system Describe the requirements of plants for life and growth comparing these amongst different species Explain the life cycle of different plants/trees Name, locate and explain the functions of the main parts of plants and the transporting water and nutrients	Children should be able to... Recall the knowledge specified within the KKPDs for Year 4 Name, describe and explain the functions of the main parts of the digestive system Construct and interpret food chains Group living things in multiple ways using their own criteria Explain how environmental changes may have an impact on living things	Children should be able to... Recall the knowledge specified within the KKPDs for Year 5 Describe and compare different reproductive processes and life cycles in plants and animals, including humans Describe and explain changes as humans grow and age	Children should be able to... Recall the knowledge specified within the KKPDs for Year 6 Describe the effects of diet, exercise, drugs and lifestyle on how the body functions Name, describe and explain the functions of the main parts of the circulatory system Utilise the observable features of plants, animals and microorganisms to group, classify and identify them into broad groups, using keys or other methods Apply the basic ideas of inheritance, variation and adaptation to describe how living things have changed over time and evolved Describe and explain how fossils provide evidence for evolution	Children should be able to... Recall the knowledge specified within the KKPDs for Year 7 Construct food chains and food webs to investigate feeding relationships Classify animals within the different animal kingdoms