Science – Biology (Substantive Knowledge)				
	EY & KS1	**KS2**	**KS3**	**KS4**
Green Pathway	Know the names of simple animals. Know simple features of natural environment (plants). Know similarities and differences between animals. Know similarities and differences between plants Know the basic parts of a human body (head, eye, ear, nose, mouth, arm, leg, hand, foot, body).	Know names of common wild and garden plants and identify them. Know basic structure of plants and identify their parts. Know how seeds and bulbs grow into plants, observing and describing their growth. Know plants need water, light and the correct temperature to grow. Know functions of the different parts on flowering plants (roots, stem/trunk, leaves and flowers). Know requirements of plants for life and growth (air, water, nutrients from soil) and how these vary plant to plant. Know the way water is transported within plants through investigations. Know the life cycle of flowering plants (pollination, seed formation and seed dispersal). Know names of common animals and identify them. Know terms carnivore, herbivore and omnivore and which animals correlate to these. Know structure of common animals, describing and comparing these. Know animals (including humans) have offspring which grow into adults. Know the names of basic body parts and its associated sense, being able to name, draw and label these. Know the basic needs of animals (including humans) – water, food, air. Know importance of exercise for humans, healthy eating and personal hygiene. Know differences between living, dead and things which are non-living. Know that living things live in habitats which suit the needs of different animals and plants, naming these. Know how a simple food chain works involving animals and plants. Know that animals, including humans, need the right types and amount of nutrition which comes from the food they eat. Know that humans and other animals have skeletons and muscles for support, protection and movement.	Know that living things can be grouped in a variety of ways. Know classification keys help group, identify and name a variety of living things in their local and wider environment. Know environments can change which can pose dangers to living things at times. Know a variety of food chains, including producers, predators and prey. Know the differences in the life cycles of mammals, amphibians, insect and a bird. Know the reproduction process in some plants and animals. Know living things are classified into broad groups according to characteristics based on similarities and differences (including microorganisms, plants and animals) and give reasons for classifications. Know simple functions of the basic parts of the digestive system in humans. Know the different types of teeth in humans and their functions. Know the changes which occur in humans as they develop to old age. Know main parts of the human circulatory system and functions of the heart, blood vessels and blood. Know the impact of diet, exercise, drugs and lifestyle on body functions. Know ways in which nutrients and water and transported within animals, including humans. Know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Know that living things produce offspring of the same kind, however the offspring normally vary and are not identical to their parents. Know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	**AQA ELC Science** *Biology Component 1 – The Human Body:* Know that the human body is composed of structures called organs, which are organised into organ systems that carry out all of the key processes of life. Know these systems all require energy, which is contained in food and released in the cell by respiration. Know the organ systems are responsible for delivering food and oxygen to the cells and taking away waste. Know all these key processes, including reproduction, are coordinated by the nervous system and a hormone system. Know a healthy body can be maintained by a balanced diet, exercise and a healthy lifestyle. Know health can be damaged by microbes, which can cause infectious diseases. Know the body can defend itself against most diseases but will sometimes need drugs in order to alleviate the symptoms and speed recovery. *Biology Component 2 - Environment, evolution and Inheritance:* Know life on Earth is dependent on photosynthesis to fix carbon dioxide and produce the organic molecules used as the fuels for respiration and life processes. Know living organisms interact with one another and their environment in many different ways. Know human behaviours may have beneficial or detrimental effects on natural populations and the environment. Know the chemicals in the environment are continually cycling through the natural world. Know life on Earth has evolved over time by natural selection, which accounts for biodiversity and how organisms are related. Know the characteristics of living things depend on both their environment and their genome. Know humans can now use genetic engineering to modify organisms.
Purple Pathway	Begin to know the names of some simple animals. Begin to know simple features of natural environment (plants). Begin to know similarities and differences between animals. Begin to know similarities and differences between plants. Begin to know the basic parts of a human body (head, eye, ear, nose, mouth, arm, leg, hand, foot, body).	Begin to know names of common wild and garden plants and identify them. Begin to know basic structure of plants and identify their parts. Begin to know how seeds and bulbs grow into plants, observing and describing their growth. Begin to know plants need water, light and the correct temperature to grow. Begin to know functions of the different parts on flowering plants (roots, stem/trunk, leaves and flowers). Begin to know requirements of plants for life and growth (air, water, nutrients from soil) and how these vary plant to plant. Begin to know the way water is transported within plants through investigations. Begin to know the life cycle of flowering plants (pollination, seed formation and seed dispersal). Begin to know names of common animals and identify them. Begin to know terms carnivore, herbivore and omnivore and which animals correlate to these. Begin to know structure of common animals, describing and comparing these. Begin to know animals (including humans) have offspring which grow into adults. Begin to know the names of basic body parts and its associated sense, being able to name, draw and label these. Begin to know the basic needs of animals (including humans) – water, food, air. Begin to know importance of exercise for humans, healthy eating and personal hygiene. Begin to know differences between living, dead and things which are non-living. Begin to know that living things live in habitats which suit the needs of different animals and plants, naming these. Begin to know how a simple food chain works involving animals and plants. Begin to know that animals, including humans, need the right types and amount of nutrition which comes from the food they eat. Begin to know that humans and other animals have skeletons and muscles for support, protection and movement.	Begin to know that living things can be grouped in a variety of ways. Begin to know classification keys help group, identify and name a variety of living things in their local and wider environment. Begin to know environments can change which can pose dangers to living things at times. Begin to know a variety of food chains, including producers, predators and prey. Begin to know the differences in the life cycles of mammals, amphibians, insect and a bird. Begin to know the reproduction process in some plants and animals. Begin to know living things are classified into broad groups according to characteristics based on similarities and differences (including microorganisms, plants and animals) and give reasons for classifications. Begin to know simple functions of the basic parts of the digestive system in humans. Begin to know the different types of teeth in humans and their functions. Begin to know the changes which occur in humans as they develop to old age. Begin to know main parts of the human circulatory system and functions of the heart, blood vessels and blood. Begin to know the impact of diet, exercise, drugs and lifestyle on body functions. Begin to know ways in which nutrients and water and transported within animals, including humans. Begin to know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Begin to know that living things produce offspring of the same kind, however the offspring normally vary and are not identical to their parents. Begin to know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	**AIM Qualifications Entry Level in Science** *Animals including Humans:* Know the basic parts of the human body. Know how to identify a variety of common animals. Know the basic needs for survival. Know that animals and humans have offspring and grow. *Plants & Ecology:* Know the basic conditions for growing healthy plants. Know about a variety of plants and trees. Know the basic structure of plants and trees.
Orange Pathway	Be aware of plants and observe them. Be aware of animals and observe them. Be aware of peers and observe them. Be aware of own body parts (through songs and rhymes).	Be aware of plants, exploring them with senses. Know how to match parts of a plant. Be aware of seeds growing into plants. Be aware of seeds/plants needing water to grow. Begin to know how to look after a plant to ensure it grows. Begin to know parts of a plant and be aware of their functions. Know how to match animals (objects/photos). Know names of some familiar animals through gesture/pointing. Be aware of simple body parts by pointing. Be aware of senses and their link to body parts. Be aware of the need for humans to have water, food and air. Be aware of the need for humans to exercise, eat healthily and look after their personal hygiene. Be aware of animals having skeletons.	Be aware of living things being classified into simple groups. Be aware of simple food chains. Be aware of simple life cycles. Be aware of animals and plants ability to reproduce. Be aware of humans having different types of teeth. Be aware of changes from baby to old age in humans. Be aware of the importance of diet, exercise, drugs and lifestyle on our bodies. Be aware of fossils and what they used to represent.	**ASDAN Life Skills Challenge** *All About Me – A Sensory Approach:* Know how to recognise the main external parts of the human body. Know there are internal organs and identify them. Know how to explore objects using their sense of smell. Know how to explore food stuffs using their sense of taste. *Plant Identification - Basic:* Know how to distinguish between plant material and non-plant material. Know basic parts of a plant. Know a dead plant from a living plant. Know which parts are found above the ground and which parts are found below.