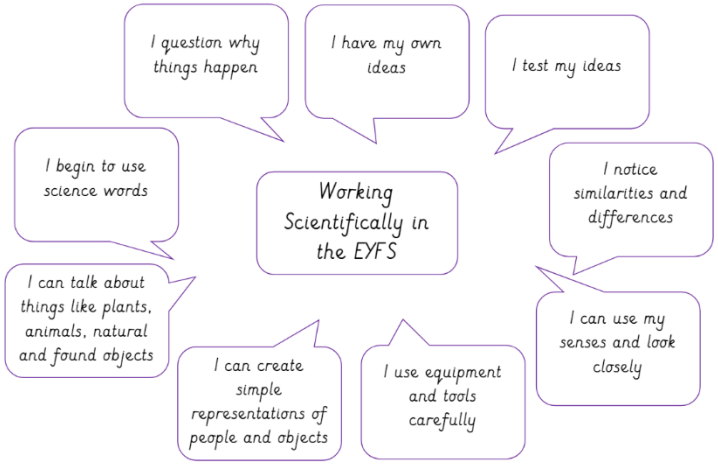
Every child Every chance Every day

Weddington's vision is for all to thrive. 'Weddy' graduates will venture into the wider world as curious, courageous and confident individuals, who are equipped with the tools for continued success

Progression Document **Science**

Year Group	Topic	Key NC Science Objectives/Knowledge	Key Vocabulary	Working Scientifically
EYFS	**Communication and Language**	• Ask questions to find out more and to check what has been said to them. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts	**The senses, unwell, well,**	
	Personal, Social and Emotional Development	• Learn how to take care of ourselves. • Describe people who are familiar to us.	**Food, drink, teeth, brushing, healthy,**	
	Understanding the World	• Name and describe animals that live in different habitats. • Explore animals and plants. • Explore how things move and act in water. • Explore various types of sounds. • Play and explore in all seasons. • Look and compare different materials.	**Weather, seasons, rough, smooth, shiny, hard, animal, changes.**	
Year 1	**Animals including Humans** **Ourselves**	• identify, name, draw and label the basic parts of the human body. • Describe part of the body is associated with each sense.	**Senses, herbivores, omnivores, carnivores, fish, amphibians, reptiles, mammals**	• asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying

	Animals and Humans **Our Pets**	• identify and name a variety of common animals including fish, amphibians, reptiles, birds 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 (fish, amphibians, reptiles, birds and mammals, including pets)	**Senses, herbivores, omnivores, carnivores, fish, amphibians, reptiles, mammals**	• using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions
	Everyday Materials **Let's Build**	• 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 the 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	**soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through**	
	Everyday Materials **Marvellous Materials**	• distinguishes 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 the simple physical properties of a	**soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through**	

		variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties.		
	Seasonal Changes **Wonderful Weather**	• observe changes across the four seasons. • observe and describe weather associated with the seasons and how day length varies.	**weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, sun, sunrise, sunset, day length**	
	Plants **What's Growing in our Gardens?**	• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • identify and describe the basic structure of a variety of common flowering plants, including trees.	**Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud**	
Year 2	**Animal Life Cycles** **Healthy Animals**	• notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts	**offspring, reproduction, growth, survive, survival, water food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish, vegetables, bread, rice, pasta, dairy)**	• 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

		of different types of food, and hygiene	
	Animal Life Cycles **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. • Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other	**living, dead, never been alive, suited, suitable, basic needs, food chain, shelter, survive, survival, names of local habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold,**
	Uses of Everyday Materials **Materials Matter**	• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**opaque, transparent and translucent, reflective, non-reflective, flexible, rigid. Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching**
	Uses of everyday Materials **Squash, bend, twist, stretch**	• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	**opaque, transparent and translucent, reflective, non-reflective, flexible, rigid. Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching**

		• find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching		
	Plants **Ready, Steady, Grow!**	• 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 and stay healthy.	**light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling**	
	Habitats **Gardens and Allotments**	• 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.	**living, dead, never been alive, suited, suitable, basic needs, food chain, shelter, survive, survival, names of local habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold, sources of food, food chain.**	
Year 3	**Animals including Humans** **Keeping Healthy**	• Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make	**Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles,**	• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests

		their own food; they get nutrition from what they eat • Identify that humans and some other animals have skeletons and muscles for support, protection and movement	**joints, support, protect, move, skull, ribs, spine**	• making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings
	Light **Light and Shadows**	• recognise that they need light 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 an opaque object • find patterns in the way that the size of shadows changes.	**Light, dark, sources of light, reflection/reflected, shadows, opaque, sun, moon,**	
	Rocks **Rocks and Fossils**	• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe in simple terms how fossils are formed when things that have lived are trapped within rock	**rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, soil, types of soil (e.g. peaty, sandy, chalk, clay)**	

		• recognise that soils are made from rocks and organic matter		
	Forces and Magnets **Amazing Magnets**	• compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic forces can 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	**Attract, repel, poles, force, gravity, magnetic, friction, metal**	
	Plants (requirements for life and growth, naming and function of parts) **Roots and Shoots**	• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • explore 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	**photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport**	

		• investigate the way in which water is transported within plants		
	Plants (flowers, pollination and seeds) **Artful flowers, fruits and seeds**	• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	**photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport**	
Year 4	**Electricity 4E** **It's Electric!**	• identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and 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 and closes a circuit and 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	•	• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings
	States of Matter **States of Matter Scientists**	• compare and group materials together, according to whether they are solids, liquids or gases	**solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling**	

		• observe that some materials change state when they are heated or cooled, and measure or research 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.	**point, evaporation, condensation, temperature, water cycle**
	Sound **Listen Up!**	• 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	**source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud**
	Living Things and their Habitats **Name that living thing**	• 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	**Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate**

		things in their local and wider environment		
	Animals, including humans **Excuse me, are these your teeth?**	• 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	**digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain**	
	Living things and their habitats Help our Habitats!	• recognise that environments can change and that this can sometimes pose dangers to living things	**Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate**	
Year 5	**Earth & Space 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	**Names of all planets, spherical, Solar System, rotate, star, orbit.**	• Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Recording results using scientific diagrams and labels • Using test results to make predictions to set up further comparative and fair tests • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Identifying scientific evidence that has been used to support or refute ideas or arguments

	Forces **May the forces be with you**	• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	**Force, gravity, air resistance, water resistance, friction, mechanisms, levers, pulleys, gears**	
	Properties and changes of materials **Music festival materials**	• Compare and group together everyday materials on the basis of their properties, including their hardness, transparency, and conductivity (electrical and thermal) • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	**Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change.**	
	Properties and changes of materials **Changing materials education pack**	• Compare and group together everyday materials on the basis of their properties, including their solubility and response to magnets • Know that some materials will dissolve in liquid to form a solution, and describe how	**Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change.**	

		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 • 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.		
	Living Things and their Habitats **The art of living**	• 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.	**Life cycle, changes, off-spring, reproduction,**	
	Animals (including humans) **Life Explorers**	• Describe the changes as humans develop to old age	**Life cycle, changes, off-spring, reproduction,**	
Year 6	**Light** **Crime lab investigations**	• Recognise that light appears to travel in straight lines • Use the idea that light travels in straight lines to explain that objects are	**Light, plus straight lines, light rays, opaque, sources of light, moon, sun, shadows, reflection/reflected.**	• Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Recording results using scientific diagrams and labels

		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 the objects that cast them		• Using test results to make predictions to set up further comparative and fair tests • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Identifying scientific evidence that has been used to support or refute ideas or arguments
	Electricity **Electric celebrations**	• 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	**Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage**	
	Living Things and their Habitats **Classification Connoisseurs**	• 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	**vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, warm-blooded, cold-blooded, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers, micro-organisms, virus, bacteria.**	

		• Give reasons for classifying plants and animals based on specific characteristics		
	Evolution and Inheritance **Game of Survival**	• 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 and are not identical to their parents • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	**offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils, evolve, evolution**	
	Animals including humans **The Art of being Human**	• 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	**Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle**	

	Consolidation - **Second-look Science –The Science of Sport**	**Living Things and their Habitats** i. 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 **Properties of Materials** i. compare and group together everyday materials on the basis of their properties ii. give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic **Forces** i. explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object ii. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces iii. recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect **Animals including Humans** i. recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function ii. recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents		

		Electricity i. associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit ii. 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 iii. use recognised symbols when representing a simple circuit in a diagram.