

## Writtle Infant School: Science Progression Map - Key Stage 1

	Year 1	Year 2
<b>Working Scientifically</b>	<ul style="list-style-type: none"> <li>• <i>asking simple questions and recognising that they can be answered in different ways</i></li> <li>• <i>observing closely, using simple equipment</i></li> <li>• <i>performing simple tests</i></li> <li>• <i>identifying and classifying</i></li> <li>• <i>using their observations and ideas to suggest answers to questions</i></li> <li>• <i>gathering and recording data to help in answering questions</i></li> </ul> <p>→ Know that we can ask questions about the world and that when we observe the world to answer these questions, this is science</p> <p>→ Set up a test to see e.g. Is your arm span the same size as your height? Do plants grow bigger if watered with milk, coke or water?</p> <p>→ Know that we can use magnifying glasses to observe objects - minibeasts, plants and trees</p> <p>→ Know that we can use measures (within Y1 mathematical limits) to help find out more about the investigations undertaken</p> <p>→ Know that we can write down numbers and words or draw pictures to record what we find</p> <p>→ With help, observe changes over time eg seed race, watering a plant with different liquids</p> <p>→ Begin to use scientific language</p> <p>→ With help, record and communicate findings in a range of ways</p> <p>→ Use simple equipment to make measurements</p> <p><b>Key Vocabulary</b> Properties, observe, test, magnifying glass, object, record, equipment, why, find out</p>	<ul style="list-style-type: none"> <li>• <i>asking simple questions and recognising that they can be answered in different ways</i></li> <li>• <i>observing closely, using simple equipment</i></li> <li>• <i>performing simple tests</i></li> <li>• <i>identifying and classifying</i></li> <li>• <i>using their observations and ideas to suggest answers to questions</i></li> <li>• <i>gathering and recording data to help in answering questions</i></li> </ul> <p>→ Know that we can ask questions about the world and that when we observe the world to answer these questions, this is science</p> <p>→ Know that we can use equipment such as thermometers to help observe changes to local environment as the year progresses</p> <p>→ Know that we can test our questions to see if they are true</p> <p>→ Know how to set up a fair test and do so when finding out about how seeds grow best</p> <p>→ Classify or group things according to a given criteria, e.g. deciduous and coniferous trees</p> <p>→ Know that we can write down numbers and words or draw pictures to record what we find</p> <p>→ Use measures (within Year 2 mathematical limits) to help find out more about the investigations they are engaged with</p> <p>→ Make observations and comparisons using simple equipment, following simple instructions</p> <p><b>Key Vocabulary</b> Properties, observe, test, magnifying glass, object, record, equipment, measure, check, fair test, predict, thermometer, temperature</p>
<b>Biology</b> Living Things and their Habitats	<ul style="list-style-type: none"> <li>• <i>identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals</i></li> <li>• <i>identify and name a variety of common animals that are</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>explore and compare the differences between things that are living, dead, and things that have never been alive</i></li> <li>• <i>identify that most living things live in habitats to which they are</i></li> </ul>

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### Animals Including Humans

*carnivores, herbivores and omnivores*

- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds 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.

- Know names of some minibeasts found in school grounds eg woodlouse, spider, ladybird, slug, worm
- Know that a trout is an example of fish, a frog is an example of an amphibian; a lizard is an example of a reptile; a robin is an example of a bird; a rabbit, a tiger, a meerkat and a human are examples of a mammal
- Know that herbivorous animals eat plants; a carnivorous animal eats other animals; omnivorous animals eat both animals and plants
- Know that a tiger is an example of a carnivore; that a rabbit is an example of a herbivore; know that many humans are examples of omnivores (though not vegetarians)
- Know that fish, amphibians, reptiles, birds and mammals are similar in that they have internal skeletons; these are known as vertebrates, which means they are animals that have a backbone
- Know that fish are different in having gills so that they can breathe underwater and scaly skin
- Know that amphibians are different in that they begin their lives with gills but then develop lungs and breath on land
- Know that reptiles are different in that they breath air and have scaly skin
- Know that birds are different to other animals in that they have feathers and wings
- Know that mammals are different to other animals in that they have fur/hair and they feed milk to their young
- Know that feet, legs, arms, hands, head, skin, ears, eyes, nose, mouth, skull, torso and tongue are part so the body and identify

*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.
  - 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 of different types of food, and hygiene.
- Know that living things move, grow, consume nutrients and reproduce; that dead things used to do these things, but no longer do; and that things that never lived have never done these things.
  - Know that animals are adapted to their environments I.e. thickness of skin and texture of skin.
  - Know that plants are adapted to their environment
  - Know that woodland, wetland and grassland are examples of microhabitats
  - Know that animals live in microhabitats.
  - Know that plants absorb energy from the Sun; that this energy is consumed by herbivorous animals; and that carnivorous animals eat other animals.
  - Know that this is a food chain.
  - Know that the arrows on a food chain show the direction that the energy travels
- Know that animals, including humans, need food, water and air to survive
  - Know that animals, including humans, are born from their mother and grow into adult animals. (offspring)

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	<p>them</p> <ul style="list-style-type: none"> <li>→ Know the five senses are touch, smell hear, see, taste</li> <li>→ Know which body part is associated with each sense e.g. that eyes are associated with sight, ears with sound, nose with smell, tongue with taste and skin with touch.</li> </ul> <p><b>Key Vocabulary</b> Senses (touch, see, taste, hear, smell), growth, habitat, fish, reptile, amphibian, bird, mammal, offspring, carnivore, herbivore, omnivore, vertebrate, skeleton, torso, ears, nose, mouth, hands, feet, head, skull, tongue</p>	<ul style="list-style-type: none"> <li>→ Know the basic food groups: fruit and vegetables, carbohydrates, protein, dairy, fat and sugary foods</li> <li>→ Know that more than half of our diet should be made up of carbohydrates, fruit and vegetables</li> <li>→ Know that fats and sugary foods should be eaten rarely and in small amounts</li> <li>→ Know that people need to exercise often to help their body stay strong and fit</li> <li>→ Know that keeping clean, including washing and brushing teeth, is an important part of staying healthy</li> </ul> <p><b>Key Vocabulary</b> Birth, living, once lived, never alive, dead, decay, energy, microhabitat, life cycle, food chain, source, nutrients, producer, consumer, environment, adapt, oxygen, air, rest, water, exercise, reproduction, adult, hygiene, young, growth, carbohydrate, protein, fat, vitamins</p>
<p><b>Biology</b> Plants</p>	<ul style="list-style-type: none"> <li>● <i>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</i></li> <li>● <i>identify and describe the basic structure of a variety of common flowering plants, including trees</i></li> <li>→ Know a rose bush, a sunflower and a dandelion by sight</li> <li>→ Know an oak tree, a silver birch tree, a willow and a horse chestnut tree by sight</li> <li>→ Know that evergreen trees maintain their leaves throughout the year and that deciduous trees shed their leaves in autumn</li> <li>→ Know that a flowering plants consist of roots, stem, leaves and flowers, and that a tree's stem is called a trunk</li> </ul> <p><b>Key Vocabulary</b> Growth, deciduous, evergreen, flower, plant, tree, branch, roots, stem, leaf, trunk, bulb, petal, fruit, seed</p>	<ul style="list-style-type: none"> <li>● <i>observe and describe how seeds and bulbs grow into mature plants</i></li> <li>● <i>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</i></li> <li>→ Know that seeds and bulbs need to be buried underground in soil and that they will grow into adult plants under the right conditions (water, warmth)</li> <li>→ Know that plants absorb energy from the sun and that plants deprived of light, food or air will not grow and will die.</li> <li>→ Know that plants reproduce to make new plants.</li> <li>→ Know that cacti and pine trees are examples of plants adapted to their environment – thick skin keeps a store of water safe; sharp spikes keep animals from stealing the water, pine trees have thick bark and pine cones to protect against cold winters</li> </ul> <p><b>Key Vocabulary</b> Bulb, seed, temperature, drought, nutrients, conditions</p>

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<p><b>Chemistry Materials</b></p>	<ul style="list-style-type: none"> <li>● <i>distinguish between an object and the material from which it is made</i></li> <li>● <i>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</i></li> <li>● <i>describe the simple physical properties of a variety of everyday materials</i></li> <li>● <i>compare and group together a variety of everyday materials on the basis of their simple physical properties</i></li> </ul> <p>→ Know from observation how to distinguish between materials made of wood, plastic, glass, metal, water, rock</p> <p>→ Know that an object is made from/of a material</p> <p>→ Know that materials can be hard, soft, strong, weak, absorbent, heavy, light, solid and runny, smooth and rough; these descriptions denote the properties of a material</p> <p>→ Compare and group together a variety of everyday materials on the basis of their physical properties</p> <p><b>Key Vocabulary</b> Absorb, property, wood, plastic, glass, metal, water, rock, man-made, natural, hard, strong, rough, bendy, solid, smooth, light, soft, transparent, waterproof</p>	<ul style="list-style-type: none"> <li>● <i>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses</i></li> <li>● <i>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</i></li> <li>● <i>Know that materials can have useful properties for a given job (including being waterproof, strong, hard, soft, flexible, rigid, light or heavy.)</i></li> </ul> <p>→ Know that many types of plastic are waterproof, that steel (a type of metal) is strong, that rock is hard, that cotton wool is soft, that rubber is flexible, that rock is rigid, that polystyrene (a type of plastic) is light and that iron (a type of metal) is heavy</p> <p><b>Key Vocabulary</b> Recap Y1 vocabulary and also brick, paper, cardboard, suitable, suitability, surface, stretch, twist, flexible, rigid</p>
<p><b>Seasonal Changes</b></p>	<ul style="list-style-type: none"> <li>● <i>observe changes across the 4 seasons</i></li> <li>● <i>observe and describe weather associated with the seasons and how day length varies.</i></li> </ul> <p>→ Know that days are longer in the summer and shorter in winter</p> <p>→ Know that weather changes through the year, getting hotter in the summer and colder in the winter</p> <p>→ Know that the winter is likely to bring ice on the ground when water freezes due to the cold</p> <p>→ Know the four seasons and key changes that occur.</p> <p>→ Observe and describe weather associated with the seasons and</p>	

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	<p>how the day length varies</p> <p><b>Key Vocabulary</b> Freezing, melting, clouds, wind, snow, ice, Spring, Summer, Autumn, Winter, temperature, weather, seasons</p>	
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