



**Beckers Green Primary School**  
Curriculum Progression Document  
Subject: Science

## A Year 1 scientist at Beckers Green displays these skills:

- Asking simple questions  
*Such as: Why are flowers different colours? Why do some animals eat meat?*
- Observing closely, using simple equipment  
*Magnifying glass, hand lens, binoculars, tape measure, torch*
- Carry out simple tests (as directed by the teacher)  
*Chn will set up equipment to test and know if their test has been successful. Chn are able to verbalise what they have learnt.*
- Identifying and classifying things  
*Teacher led classifications. Chn can group things according to a criteria they have been asked to consider*
- Using their observations and ideas to suggest answers to questions  
*Chn can explain to others what they have found out and draw conclusions from the questions I have asked*
- Gather information to answer questions

## A Year 2 scientist at Beckers Green displays these skills:

- Asking simple scientific questions relevant to the topic  
*Such as: why do some trees lose their leaves in autumn? Why do some animals have underground habitats?*
- Observing closely, using age appropriate equipment  
*Thermometers, rain gauges, weighing scales*
- Carry out simple fair tests (child led testing)  
*How do you think you could find the answer to this question?  
Chn will be exposed to the term 'fair test'*
- Identifying and classifying things  
*Chn will begin to choose their own groups to classify things*
- Using their observations and ideas to suggest answers to questions  
*Chn can explain why their investigation is fair and conclusions from the fair test explaining what they have found out*
- Gather and record information to answer questions

## By the end of KS1, an scientist at Beckers Green has this knowledge:

### YEAR 1

- I know the name some common trees and plants (wild and garden inc deciduous and evergreens.
- I know the basic structure of a variety of common trees and plants
  
- I know a variety of common animals including fish, amphibians, reptiles, birds and mammals. Describe and compare their structure.
- I know the name of a variety of common animals that are carnivores, herbivores and omnivores
- I can name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.
  
- I can distinguish between an everyday object and the material from which it is made
- I know how to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- I can describe the simple physical properties of a variety of everyday materials .
- I know how to compare and group together a variety of everyday materials on the basis of their simple physical properties.

## YEAR 2

- 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.
  
- 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.
- **EVOLUTION AND INHERITANCE:** Recognise that humans resemble their parents
  
- 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.
  
- 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.

## A Year 3 scientist at Beckers Green displays these skills:

- Asking relevant questions and using different types of enquiries to answer them  
*Why does the moon appear in different shapes in the night sky? Where does a fossil come from?*
- Setting up a fair test to compare 2 things and explain why it is fair
- Setting up a simple enquiry to explore scientific questions
- Using observations to answer scientific questions  
*Observing what time of day my shadow is longest. Observing which type of plants grow in different places.*
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  
*Teacher led ideas to record*
- Recording findings  
*Using simple scientific language, drawings, diagrams, keys, and tables*
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Suggest improvements.
- Making simple predictions from questions raised
- Identifying differences and similarities related to simple scientific ideas and processes

## A Year 4 scientist at Beckers Green displays these skills:

- Asking relevant scientific questions, using scientific language and using different types of scientific enquiries to answer them  
*Why are steam and ice the same thing? Why is the liver important in our digestive system? What do we mean by 'pitch' when it comes to sound?*
- Setting up a fair test to compare 2 things with more than one variable and explain why it is fair and what my variables and controls are
- Setting up a simple enquiry to explore scientific questions and evaluate outcomes
- Making careful and accurate observations, including the use of standard units, to answer scientific questions  
*g, cm, ml*
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  
*Child led ideas on recording using charts, matrix, tally depending on what is most sensible*
- Recording findings  
*Using scientific language, labelled diagrams, keys, bar charts, tables, Venn diagrams and Carroll diagrams*
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Make predictions for new values, suggest improvements and raise further questions
- Making prediction with a plausible scientific reason as to why and to amend their predictions according to their findings.
- Identifying differences, similarities or changes related to scientific ideas and processes
- Using straightforward scientific evidence to answer questions or to support their findings

## By the end of Lower KS2, an scientist at Beckers Green has this knowledge:

### YEAR 3

- 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
- Investigate the way in which water is transported within plants
- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
  
- 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 and some other animals have skeletons and muscles for support, protection and movement.
  
- 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.
- 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
- Recognise that soils are made from rocks and organic matter.

#### YEAR 4

- 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
- 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 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.
- 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.
- 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.
- 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.

## A Year 5 scientist at Beckers Green displays these skills:

- 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 accuracy and precision.
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys and bar, scatter and line graphs
- Using test results to make predictions to set up further comparative and fair tests
- Reporting and presenting findings from enquiries, including conclusions, in a variety of different written methods
- Identifying scientific evidence that has been used to support or refute ideas or arguments

## A Year 6 scientist at Beckers Green displays these skills:

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary by designing and creating their own experiments and linking relationship where required..
- Taking measurements, using a range of scientific equipment, with accuracy and precision, understanding when and why second readings are needed.
- Recording data and representing this appropriately in a variety of ways.  
*Children will understand which method of recording is most appropriate for the task in hand*
- Creating new investigations and predictions which take account of what I have previously learnt.
- Analysing the collected data to report and present findings, justifying results in order to accurately evaluate my own work.
- Identifying scientific evidence that has been used to support or refute ideas or arguments and providing counterarguments based on scientific knowledge and theory
- Reading, spelling and pronouncing scientific vocabulary accurately

## By the end of Upper KS2, an scientist at Beckers Green has this knowledge:

### YEAR 5

- Describe the changes as humans develop to old age.
- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- Know that some materials will dissolve in liquid to form a solution, and 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
- 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.
- 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.
- 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.

#### YEAR 6

- 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.
- 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 the objects that cast them
- 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.
- 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.