



## Year 6 Progression of Skills

Biology				
Big Idea	Programmes of study	Working towards expectations	Meeting expectations	Exceeding expectations
Living things can be classified according to observable features	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.	The child can identify the broad groups into which living things are classified, e.g. mammals.	The child can use similarities and differences in observable features to decide how living things should be grouped, e.g. a cat is a mammal because it is warm blooded and gives birth to live young.	The child can explore why some living things, such as the duck billed platypus, don't neatly fit into one group.
	Give reasons for classifying plants and animals based on specific characteristics.	The child can state how plants and animals can be classified using specific characteristics.	The child can explain why certain features are useful in classifying living things, e.g. backbones in animals and flowers in plants.	The child can explain why other features are less useful as a basis for classification, such as size or colour.
Living things exhibit variation and these may lead to evolution	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.	The child can recognise that fossils provide information about living things from millions of years ago, e.g. understand that they are preserved remains of extinct living things.	The child can use fossils as evidence that living things have changed over time, e.g. explain that these have died out and others have taken their place.	The child can suggest possible reasons for changes to living things over time, e.g. why penguins can't fly but are good at swimming.
	Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.	The child can recognise that living things produce offspring of the same kind, but normally offspring vary, e.g. that puppies have common features but are not identical.	The child can recognise that offspring normally vary from each other and from their parents, e.g. that puppies vary from each other and from their parents.	The child can recognise that selective breeding may result in offspring with certain features, e.g. pedigree dogs with a certain shape or colour.
	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	The child can identify ways in which certain animals and plants are adapted to suit their environment in different ways.	The child can describe examples of a living thing that has adapted to live in a particular habitat and evolved as a result, e.g. a polar bear or cactus.	The child can give examples of living things that have evolved in different ways, e.g. different types of finch.



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The human body has a number of systems, each with its own function	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	The child can name the main parts of the human circulatory system, e.g. heart, arteries, veins.	The child can describe what heart, blood vessels and blood do, e.g. carry oxygen to all parts of the body.	The child can explain some characteristics of the heart, blood vessels and blood, e.g. explain that the arteries are thicker because they carry blood at a higher pressure.
	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	The child can recognise that diet, exercise, drugs and lifestyle impact on the way the body functions, e.g. knowing that exercise changes the body.	The child can suggest how their bodies are affected by substances and actions, e.g. that a high fat diet coupled with little exercise is likely to lead to obesity.	The child can explain how decisions about lifestyle can affect the quality of life, e.g. recognise that making excessive use of convenience foods may introduce more additives into the diet.
	Describe the ways in which nutrients and water are transported within animals, including humans.	The child can describe that nutrients and water are transported within humans.	The child can describe with aid of diagrams the route that water takes within animals, e.g. through the human body.	The child can compare the ways in which nutrients and water are transported in two animals that are quite different.



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Physics				
Big Idea	Programmes of study	Working towards expectations	Meeting expectations	Exceeding expectations
Light & sound can be reflected & absorbed and enable us to see and hear	Recognise that light appears to travel in straight lines.	The child can recognise that light travels from one point to another.	The child can represent light using straight line ray diagrams.	The child can recognise that even when light changes in direction, the path is still continuous.
	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.	The child can recognise that some objects reflect light.	The child can draw diagrams using straight lines showing light travelling to the eye.	The child can draw diagrams using straight lines showing light reflecting off objects and 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.	The child can describe how light travels from light sources to our eyes.	The child can explain how we can see an object by referring to light travelling into the eye.	The child can refer to the idea that some objects may be better reflectors than others.
	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	The child can relate the shape of shadows to the shape of the object that makes them.	The child can draw a diagram showing an object, shadow and light to relate object shape to shadow shape.	The child can use a diagram to explain that although a shadow is the same shape as the object, it may not be the same size.
Electricity can make circuits work and can be controlled to perform useful	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit.	The child can recognise that changing the number and voltage of cells may alter the operation of a circuit.	The child can explain how number and voltage of cells affects the lamp or buzzer.	The child can relate the number or voltage of cells to the number and operation of bulbs or buzzers that can be run from them.
	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.	The child can identify the function and operation of different components.	The child can explain the use of switches, how bulbs can be made brighter and buzzers made louder.	The child can explain the effect of changing the order of the components in a circuit
	Use recognised symbols when representing a simple circuit in a diagram.	The child can understand that components can be represented by symbols.	The child can represent a circuit that has been constructed using symbols.	The child can design circuits using symbols.



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Working Scientifically					
Process	Sub- process	Programmes of study	Working towards expectations	Meeting expectations	Exceeding expectations
Planning investigations	Children can plan an enquiry	Plan different types of scientific enquiries to answer questions.	The child can, with support, can answer questions using evidence gathered from different types of scientific enquiry.	The child can answer questions using evidence gathered from different types of scientific enquiry, e.g. operation of circulatory system from experiment, survey and secondary research.	The child can suggest which type of enquiry is likely to be more successful at providing answers to a particular question.
	Children can identify and manage variables	Recognise and control variables where necessary.	The child can, with prompting, identify and manage variables.	The child can identify and manage variables, e.g. distances and sizes in shadow formation.	The child can identify and manage variables and recognises variables that cannot be easily managed.
Conducting experiments	Children can use equipment to take measurements	Take measurements using a range of scientific equipment.	The child can, following discussion of alternatives, select appropriate equipment, e.g. measuring jug to measure volume.	The child can use appropriate equipment, such as meter rule, to take measurements, such as distance travelled by light.	The child can recognise limitations of available equipment, e.g. accuracy of balance.
	Children explore how to improve the quality of data	Take measurements with increasing accuracy and precision.	The child can take measurements that are precise as well as accurate.	The child can consider how by modifying instrument or technique, measurements can be improved, e.g. when recording route of light rays.	The child can evaluate different techniques, with reference to accuracy and precision.



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	Children understand the role of repeat readings	Take repeat readings when appropriate.	The child can know how to process repeat readings.	The child can identify situations in which taking repeat readings will improve the quality of evidence, e.g. investigating the behaviour of components in a circuit.	The child can explain why repeatedly taking repeat readings is of little value.
Record evidence	Children record work with diagrams and label them.	Record data and results of increasing complexity using scientific diagrams and labels.	The child can start to use labelled diagrams to show more complex outcomes.	The child can use labelled diagrams to show complex outcomes, e.g. relating specific adaptations of organisms to environmental factors.	The child can explain why a labelled diagram may be particularly effective
	Children can display data using labelled diagrams, keys, tables and bar charts	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar charts .	The child can, with prompting, use various ways to record complex evidence.	The child can use various ways, as appropriate, to record complex evidence, e.g. in the construction of a key to aid plant identification.	The child can evaluate various ways of recording complex data.
	Children can display data using line graphs	Record data and results of increasing complexity using line graphs.	The child can use a line graph to record basic data.	The child can use line graphs to display complex data, e.g. size of object in relation to the size of the shadow it casts.	The child can explain the advantages of using line graphs.
Report findings	Children process findings to develop conclusions and identify casual relationships.	Report and present findings from enquiries, including conclusions and causal relationships.	The child can, with prompting, write a conclusion using evidence and identifying causal links.	The child can write a conclusion using evidence and identifying causal links, e.g. in the design of a periscope.	The child can suggest possible limits to causal relationships.
	Children use displays and presentations to report on findings.	Report and presents findings from enquiries in oral and written forms such as displays and other presentation.	The child can with support, display and present key findings from enquiries orally and in writing.	The child can display and present key findings from enquiries orally and in writing, e.g. deciding how well classifications fit unfamiliar animals and plants.	The child can evaluate the best way of displaying and presenting key findings.



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	Children explain confidence in findings	Report and present findings from enquiries, including explanations of, and degree of, trust in results	The child can, with support, indicate why some results may not be entirely trustworthy.	The child can, in conclusions, indicate how trustworthy they are, e.g. in relating brightness of bulb to voltage supplied.	The child can, in conclusions, indicate, if appropriate, why the results may not be entirely trustworthy.
Conclusions and predictions	Children can draw conclusions.	Identify scientific evidence that has been used to support or refute ideas or arguments.	The child can show how evidence supports a conclusion.	The child can identify how an idea is supported or refuted by evidence, e.g. selective breeding to produce animals or plants with desirable characteristics.	The child can suggest how factors other than evidence may support or oppose an idea.
	Children can develop investigation further.	Use test results to make predictions to set up further comparative and fair tests.	The child can suggest further relevant comparative or fair tests.	The child can use evidence to suggest further comparative or fair tests that would develop the investigation, e.g. in the design of rear view mirrors for cars.	The child can evaluate which further comparative or fair tests would be particularly useful.