Year 5 Progression of Skills

Biology				
Big Idea	Programmes of study	Working towards expectations	Meeting expectations	Exceeding expectations
Life exists in a variety of forms and goes through cycles – Animals	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	The child can explain what a life cycle is, e.g. that kittens grow into cats, have kittens and die.	The child can identify similarities and differences in two different life cycles, e.g. sparrow and butterfly, with reference to eggs and intermediate stages.	The child can suggest similarities in the life cycles of a number of vertebrates, e.g. comparison of dog, human and bird embryos.
	Describe the changes as humans develop to old age.	The child can identify that people change as they age, e.g. recognise differences in appearance, abilities etc.	The child can describe the changes as humans develop to old age, e.g. trends in changes to size, weight, mobility etc.	The child can suggest why some of the changes that take place in humans happen, e.g. suggest why babies have disproportionately large heads compared to adults.
The human body has a number of systems, each with its own function	Describe the life process of reproduction in some plants and animals.	The child can describe the life process of reproduction in humans.	The child can describe in sequence the stages of reproduction in some plants and animals, e.g. dog and a thistle.	The child can compare the process of reproduction in animals and plants, e.g. compare and contrast fertilisation.

Year 5 Progression of Skills

Chemistry				
Big Idea	Programmes of study	Working towards expectations	Meeting expectations	Exceeding expectations
Materials have physical properties which can be investigated and compared	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.	The child can compare and group together everyday materials on the basis of their appearance and feel.	The child can test and sort a range of materials based on their physical properties.	The child can suggest why those properties might influence the selection of those materials for certain uses.
	Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	The child can know that some materials will dissolve in liquid to form a solution.	The child can describe how some materials, e.g. sugar, will dissolve and can be retrieved.	The child can identify that some soluble materials are more soluble than others.
	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	The child can suggest how mixtures might be separated.	The child can justify separation techniques proposed, with reference to materials being separated.	The child can explain why a particular separation method might be more effective.
	Demonstrate that dissolving, mixing and changes of state are reversible changes.	The child can understand that some processes are reversible.	The child can show how the original materials can be retrieved from each of these changes.	The child can classify various processes relating to materials as reversible or irreversible.
	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.	The child can understand that burning is irreversible.	The child can identify reactants and products of chemical changes and recognise these as being irreversible.	The child can provide examples of when changes being irreversible are a good thing, e.g. making bricks, or not, e.g. non-biodegradable plastic bags.

Year 5 Progression of Skills

The physical properties of materials determine their uses	Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic .	The child can give reasons for the particular uses of everyday materials, including metals, wood and plastic.	The child can use evidence to justify the selection of a material for a purpose.	The child can suggest limitations of the uses of selected materials based on test results.

Year 5 Progression of Skills

Physics				
Big Idea	Programmes of study	Working towards expectations	Meeting expectations	Exceeding expectations
There are contact and non-contact forces; these affect the motion of objects	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	The child can describe the effect of gravity on unsupported objects.	The child can explain that gravity causes objects to fall towards Earth.	The child can recognise that gravity acts between all masses, e.g. the Sun and the Earth.
	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	The child can recognise that motion may be resisted by forces.	The child can describe how motion may be resisted by air resistance, water resistance or friction.	The child can Identify ways in which forces that oppose motion may be useful (e.g. bicycle handlebar grips) or a nuisance (e.g. bicycle chain).
	Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	The child can recognise that simple machines transfer force.	The child can describe how some devices may turn a smaller force into a larger one.	The child can explain, with reference to everyday contexts, why a force multiplier might be useful.
Day, night, month, seasonal change & year are caused by the position and movement of the earth	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.	The child can recognise that the planets move, relative to the Sun.	The child can draw a diagram or use a model to describe planetary orbits	The child can identify that the further out a planet is, the longer its orbit is around the Sun.
	Describe the movement of the Moon relative to the Earth.	The child can recognise that the Moon moves relative to the Earth.	The child can draw a diagram or use a model to describe the Moon's orbit around the Earth.	The child can relate the Moon's orbit of the Earth to the Earth's orbit of the Sun.
	Describe the Sun, Earth and Moon as approximately spherical bodies.	The child can sketch the outlines of the Sun, Earth and Moon.	The child can describe the Sun, Earth & Moon as spheres.	The child can recognise that many heavenly bodies are approximately spherical.
	Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky .	The child can relate day and night to the apparent position of the Sun.	The child can use a diagram or model to explain why the Sun seems to travel across the sky, and what causes day and night.	The child can explain the effect of a planet in the solar system rotating at a different rate to Earth.

Year 5 Progression of Skills

Working Scientifically					
Process	Sub- process	Programmes of study	Working towards expectations	Meeting expectations	Exceeding expectations
Planning investigations	Children can plan an enquiry	With prompting, plan different types of scientific enquiries to answer questions.	The child can plan investigations using different types of scientific enquiry.	The child, with support, can answer questions using evidence gathered from different types of scientific enquiry, e.g. comparing life cycles of different plants using change over time, surveys and secondary research.	The child can answer questions using evidence gathered from different types of scientific enquiry.
	Children can identify and manage variables	With prompting, recognise and control variables where necessary.	The child can set up a comparative and fair tests.	The child can, with prompting, identify and manage variables, e.g. when exploring falling paper cones.	The child can identify and manage variables.
Conducting experiments	Children can use equipment to take measures	Select, with prompting, and use appropriate equipment to take readings.	The child can, following discussion, follow guidance to use equipment, e.g. timer.	The child can, following discussion of alternatives, selects appropriate equipment, e.g. using a shadow stick and measuring length and angle of shadow.	The child can use appropriate equipment, such as meter rule, to take measurements, such as distance travelled.
	Children explore how to improve the quality of data	Take precise measurements using standard units.	The child can recognise the importance of using standard units and measures accurately.	The child can take measurements that are precise as well as accurate, e.g. measuring the force needed to pull different shapes of boat through the water.	The child can consider how by modifying instrument or technique, measurements can be improved.

Year 5 Progression of Skills

	Children understand the role of repeat readings	Take and process repeat readings.	The child can, with prompting, take repeat readings.	The child can know how to process repeat readings, e.g. when timing falling objects.	The child can identify situations in which taking repeat readings will improve the quality of evidence
Record evidence	Children record work with diagrams and label them.	Record data and results.	The child can use words and diagrams to record findings.	The child can start to use labelled diagrams to show more complex outcomes, e.g. comparing the time of day at different places on the earth.	The child can use labelled diagrams to show complex outcomes.
	Children can display data using labelled diagrams, keys, tables and bar charts	Record data using labelled diagrams, keys, tables and charts.	The child can use words and diagrams to record findings.	The child can, with prompting, use various ways to record complex evidence, e.g. when investigating how gears and levers enable a small force to have a larger effect.	The child can use various ways, as appropriate, to record complex evidence.
	Children can display data using line graphs	Use line graphs to record data.	The child can, with prompting, use line graphs.	The child can use a line graph to record basic data, e.g. length and mass of a baby as it grows.	The child can use line graphs to display complex data.
Report findings	Children process findings to develop conclusions and identify casual relationships.	Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships.	The child can write a conclusion based on evidence.	The child can with prompting, write a conclusion using evidence and identifying causal links, e.g. investigating what makes a parachute fall quicker.	The child can write a conclusion using evidence and identifying causal links.
	Children use displays and presentations to report on findings.	With support, present findings from enquiries orally and in writing.	The child can present findings either in writing or orally.	The child can with support, display and present key findings from enquiries orally and in writing, e.g. suggesting reasons for similarities and differences between various animals.	The child can display and present key findings from enquiries orally and in writing.

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	Children explain confidence in findings	With prompting, identify that not all results may be trustworthy.	The child can indicate individual results that might be suspect.	The child can, with support, indicate why some results may not be entirely trustworthy, e.g. when timing falling objects.	The child can, in conclusions, indicate how trustworthy they are.
Conclusions and predictions	Children can draw conclusions.	Suggest how evidence can support conclusions.	The child can, with prompting, show how evidence supports a conclusion.	The child can show how evidence supports a conclusion, e.g. researching gestation periods of various mammals and relating them to adult mass.	The child can identify how an idea is supported or refuted by evidence.
		Suggest further comparative or fair tests.	The child can, with prompting, suggest further relevant comparative or fair tests	The child can suggest further relevant comparative or fair tests, e.g. when testing materials for various properties to determine their suitability for an application.	The child can use evidence to suggest further comparative or fair tests that would develop the investigation.