Changes to the Science Curriculum: Year 4

At a glance

How does the new curriculum compare to the QCA Schemes of Work (2000)?

What's gone?	What's been added?
• Skeletons & muscles (moved to Y3) • Adaptation to environment • Thermal insulators • Separating mixtures • Friction & forces • Changing brightness of bulbs in circuits	• Digestive system • Teeth • Changing environments • Changes of state/water cycle • Common uses of electricity • Sound as vibrations

In detail

This section displays the objectives of the old National Curriculum organised according to the QCA units published from 2000 against the new objectives in the 2014 Primary Curriculum

Red indicates no longer required in Y4; purple content has been moved to Y3; green content is new to Year 4

Scientific Investigation	
that science is about thinking creatively to try to explain how living and non-living things work, and to establish links between causes and effects	Not explicitly mentioned
that it is important to test ideas using evidence from observation and measurement	"using straightforward scientific evidence to answer questions or to support their findings"
ask questions that can be investigated scientifically and decide how to find answers	"asking relevant questions and using different types of scientific enquiries to answer them"
consider what sources of information, including first-hand experience and a range of other sources, they will use to answer questions	"using straightforward scientific evidence to answer questions or to support their findings"
think about what might happen or try things out when deciding what to do, what kind of evidence to collect, and what equipment and materials to use	"setting up simple practical enquiries, comparative and fair tests"
make a fair test or comparison by changing one factor and observing or measuring the effect while keeping other factors the same	"setting up simple practical enquiries, comparative and fair tests"
use simple equipment and materials appropriately and take action to control risks	"making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers"
make systematic observations and measurements, including the use of ICT for datalogging	
check observations and measurements by repeating them where appropriate	Not explicitly mentioned
use a wide range of methods, including diagrams, drawings, tables, bar charts, line graphs and ICT, to communicate data in an appropriate and systematic manner	"recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables"
make comparisons and identify simple patterns or associations in their own observations and measurements or other data	" identifying differences, similarities or changes related to simple scientific ideas and processes"
use observations, measurements or other data to draw conclusions	"gathering, recording, classifying and presenting data in a variety of ways to help in answering questions"
decide whether these conclusions agree with any prediction made and/or whether they enable further predictions to be made	"using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions"
use their scientific knowledge and understanding to explain observations, measurements or other data or conclusions	"reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions"
review their work and the work of others and describe its significance and limitations	Not explicitly mentioned

Biology 1: Moving & Growing	
that humans and some other animals have skeletons and muscles to support and protect their bodies and to help them to move	Moved to Y3
Moved from Y3	"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"

Biology 2: Habitats	
how locally occurring animals and plants can be identified and assigned to groups	"explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment"
that the variety of plants and animals makes it important to identify them and assign them to groups	"recognise that living things can be grouped in a variety of ways"
about the different plants and animals found in different habitats	Implied by other objectives
how animals and plants in two different habitats are suited to their environment	Covered mainly in Y6
to use food chains to show feeding relationships in a habitat	"construct and interpret a variety of food chains, identifying producers, predators and prey"
about how nearly all food chains start with a green plant	
	"recognise that environments can change and that this can sometimes pose dangers to living things."

Chemistry 1: Keeping Warm	
that some materials are better thermal insulators than others	Moved to Y5
that temperature is a measure of how hot or cold things are	Implied by chemistry content

Chemistry 2: Solids, liquids & how they can be separated	
how to separate solid particles of different sizes by sieving	Moved to Y5
that some solids dissolve in water to give solutions but some do not	Moved to Y5
how to separate insoluble solids from liquids by filtering	Moved to Y5
to use knowledge of solids, liquids and gases to decide how mixtures might be separated	"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."

Physics 1: Friction	
about friction, including air resistance, as a force that slows moving objects and may prevent objects from starting to move	Moved to Year 5
how to measure forces and identify the direction in which they act	Moved to Year 5

Physics 2: Circuits & Conductors	
to construct circuits, incorporating a battery or power supply and a range of switches, to make electrical devices work	"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”
how changing the number or type of components in a series circuit can make bulbs brighter or dimmer	Moved to Year 6
Moved from KS1	identify common appliances that run on electricity

Additional Content: Sound	
Moved from Year 5	“identify how sounds are made, associating some of them with something vibrating”
Moved from Year 5	“ recognise that vibrations from sounds travel through a medium to the ear”
Moved from Year 5	“ find patterns between the pitch of a sound and features of the object that produced it”
Moved from Year 5	“find patterns between the volume of a sound and the strength of the vibrations that produced it.”
Moved from KS1	“recognise that sounds get fainter as the distance from the sound source increases”