Science Curriculum 2014

Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The national curriculum for science aims to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics

- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them

- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

Scientific knowledge and conceptual understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

Science – key stages 1 and 2

The nature, processes and methods of science

‘Working scientifically’ specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how ‘working scientifically’ might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data. ‘Working scientifically’ will be developed further at key stages 3 and 4, once pupils have built up sufficient understanding of science to engage meaningfully in more sophisticated discussion of experimental design and control.

Spoken language

The national curriculum for science reflects the importance of spoken language in pupils’ development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

School curriculum

The programmes of study for science are set out year-by-year for key stages 1 and 2. Schools are, however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, schools therefore have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, schools can introduce key stage content during an earlier key stage if appropriate. All schools are also required to set out their school curriculum for science on a year-by-year basis and make this information available online.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the content indicated as being ‘non-statutory’.

Year 1 – Science

Working Scientifically	Plants	Animals including Humans	Everyday Materials	Seasonal Changes
• asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions.	• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees. • observe and describe how seeds and bulbs grow into mature plants (From Y2) • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (From Y2)	• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are 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.	• distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties.	• Pupils should be taught to: • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.
Notes and Non-Statutory Guidance Pupils should: • explore the world around them / raise their own questions. • experience different types of scientific enquiries, including practical activities, • begin to recognise ways in which they might answer scientific questions. • compare objects, materials and living things and, with help, decide how to sort and group them, • observe changes over time • with guidance, they should begin to notice patterns and relationships. • Ask people/ use simple secondary sources to find answers. • use simple measurements/ equipment (eg hand lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out. • record and communicate their findings in a range of ways and begin to use simple scientific language. • Pupils are not expected to cover each aspect for every area of study	**Notes and Non-Statutory Guidance** **Use** the local environment throughout the year to explore and answer questions about plants growing in their habitat. **Observe** the growth of flowers and vegetables that they have planted. **Become** familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem). **Keep** records of how plants have changed over time, for example the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants. **Introduce** the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants. ***Pupils might work scientifically by:*** observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. **Observe** and record, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy. **Note:** Seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them.	**Notes and Non-Statutory Guidance** **Use** the local environment throughout the year to explore and answer questions about animals in their habitat. **Understand** how to take care of animals taken from their local environment and the need to return them safely after study. **Become** familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets. **Plenty** of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes. ***Pupils might work scientifically*** by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.	**Notes and Non-Statutory Guidance** **Explore**, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent. **Explore** and experiment with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil. ***Pupils might work scientifically by:*** performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'	**Notes and Non-Statutory Guidance** **Observe** and talk about changes in the weather and the seasons. **Note:** Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses. ***Pupils might work scientifically by:*** making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change

Year 1 Investigative Science Skills

SC1 Investigative Science – Key Skills

	Emerging (Level 1)	Developing (Level 2)	Consolidating (Level 3)
Planning	With help, I am practising to tell you how I might find something out	I am getting better at telling my friends how I might find something out	This is the equipment/information I need for my investigation
Collecting data What are we measuring or observing?	I might ask a question, I might look in a book, I might look on the computer to find something out.	I am practicing to use the equipment given to me to measure things and see (sense) what is happening	I am getting better at choosing which equipment I need.
Collecting data What might affect what we are observing or measuring	With help I am getting better at telling you what I am going to watch out for. This is what I am looking for ….	I am practising to tell my friends what it is I am going to measure or look for With some help from my teachers I am practising to ask questions like; What do you think will happen to …. if we…?	With help: I am practising to know what to measure or observe What do you think will happen to ....if we change ....and keep .....the same? I think X might happen because (everyday knowledge)
Gathering evidence	I am getting better at using my senses and simple equipment to describe what is around me.	I am getting better at measuring things with help from my teacher and my friends	With help from my friends or teacher I am getting better at saying: This is what I have observed… This is what I have measured …(Accurate)
Describing what's been found out with a reason	I am getting better at telling my friends what happened.	I am getting better at telling my friends what I have found out.	I am practising to say: we found out ..... and we think it happened because .....
Using evidence to explain	I noticed… changes when	I'm practising to spot surprises I thought this might happen… and the surprise was … happened. I am practicing to sort things into different groups	
Communicating scientific ideas Using scientific words and symbols	I am getting better at sharing my ideas with others. I am getting better at showing you what I have found out (simple template given by teacher. I am practicing to use words to describe what I see, hear, smell, tast and smell.	With help I am getting better at showing you what I have found out using a ….. simple tables, drawing, charts	I am practising to show you what I have found out using tables bar charts, drawing, writing
Suggesting improvements		With help I am getting better at saying: if I was to do it again I might do it like this	I am practising to suggest improvements to our method . If we did this again we would do ……
Keeping safe			With help I am getting better at telling you if something might not be safe

Year 2 - Science

Working Scientifically	Living Things and their Habitats	Animals including humans	Uses of everyday materials
• asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions.	• 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 micro-habitats • 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.	• 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.
Notes and Non-Statutory Guidance Pupils should: • explore the world around them / raise their own questions. • experience different types of scientific enquiries, including practical activities, • begin to recognise ways in which they might answer scientific questions. • compare objects, materials and living things and, with help, decide how to sort and group them, • observe changes over time • with guidance, they should begin to notice patterns and relationships. • Ask people/ use simple secondary sources to find answers. • use simple measurements/ equipment (eg hand lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out. • record and communicate their findings in a range of ways and begin to use simple scientific language. • Pupils are not expected to cover each aspect for every area of study	**Notes and guidance (non-statutory)** **Introduce** the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. **Raise** and answer questions that help them to become familiar with the life processes that are common to all living things. **Introduce** the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'micro-habitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). **Raise** and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other e.g. plants serving as a source of food and shelter for animals. Compare animals in familiar habitats with animals found in less familiar habitats e.g. on the seashore, in woodland, in the ocean, in the rainforest. ***Pupils might work scientifically by:*** sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (e.g. grass, cow, human). They could describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.	**Notes and guidance (non-statutory)** **Introduce** basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs. The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult. ***Pupils might work scientifically by:*** observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.	**Notes and guidance (non-statutory)** **Identify** and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass). **Think** about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials. **Find** out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam. ***Pupils might work scientifically by:*** comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.

Year 2 Investigative Science Skills

SC1 Investigative Science – Key Skills		Emerging (Level 1)	Developing (Level 2)	Consolidating (Level 3)
	Planning	With help, I am practising to tell you how I might find something out	I am getting better at telling my friends how I might find something out	This is the equipment/information I need for my investigation
	Collecting data What are we measuring or observing?	I might ask a question, I might look in a book, I might look on the computer to find something out.	I am practicing to use the equipment given to me to measure things and see (sense) what is happening	I am getting better at choosing which equipment I need.
	Collecting data What might affect what we are observing or measuring	With help I am getting better at telling you what I am going to watch out for. This is what I am looking for ….	I am practising to tell my friends what it is I am going to measure or look for With some help from my teachers I am practising to ask questions like; What do you think will happen to …. if we…?	With help: I am practising to know what to measure or observe What do you think will happen to ....if we change ....and keep .....the same? I think X might happen because (everyday knowledge)
	Gathering evidence	I am getting better at using my senses and simple equipment to describe what is around me.	I am getting better at measuring things with help from my teacher and my friends	With help from my friends or teacher I am getting better at saying: This is what I have observed… This is what I have measured …(Accurate)
	Describing what's been found out with a reason	I am getting better at telling my friends what happened.	I am getting better at telling my friends what I have found out.	I am practising to say: we found out ..... and we think it happened because .....
	Using evidence to explain	I noticed… changes when	I'm practising to spot surprises I thought this might happen… and the surprise was … happened. I am practicing to sort things into different groups	
	Communicating scientific ideas Using scientific words and symbols	I am getting better at sharing my ideas with others. I am getting better at showing you what I have found out (simple template given by teacher. I am practicing to use words to describe what I see, hear, smell, tast and smell.	With help I am getting better at showing you what I have found out using a ….. simple tables, drawing, charts	I am practising to show you what I have found out using tables bar charts, drawing, writing
	Suggesting improvements		With help I am getting better at saying: if I was to do it again I might do it like this	I am practising to suggest improvements to our method . If we did this again we would do ……
	Keeping safe			With help I am getting better at telling you if something might not be safe

Year 3 - Science

Working Scientifically	Plants	Rocks	States of Matter	Sound	Electricity
• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.	• 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.	• 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.	• 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 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.
Notes and Non-Statutory Guidance Pupils should: • Have a range of scientific experiences to enable them to raise their own questions about the world around them. Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. • Look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. • They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. • Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Pupils should use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences. • Pupils are not expected to cover each aspect for every area of study.	**Notes and Non-Statutory Guidance** **Introduce** the relationship between structure and function. **Explore** questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction. **Note**: Pupils can be introduced to the idea that plants can make their own food, but don't need to understand how this happens. ***Pupils might work scientifically by:*** comparing the effect of different factors on plant growth, for example, the amount of light,/ fertiliser; discovering how seeds are formed by observing the different stages of plant life cycles over a period of time; looking for patterns in the structure of fruits that relate to how the seeds are dispersed. They might observe how water is transported in plants – carnations/ celery.	**Notes and Non-Statutory Guidance** **Explore** different kinds of rocks and soils, including those in the local environment. ***Pupils might work scientifically by:*** observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time; using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Pupils could explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. They can raise and answer questions about the way soils are formed.	**Notes and Non-Statutory Guidance** **Explore** a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container). **Observe** water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled. **Note**: Teachers should avoid using materials where heating is associated with chemical change, for example, through baking or burning. ***Pupils might work scientifically by***: grouping and classifying a variety of different materials; exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). They could research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid.	**Notes and Non-Statutory Guidance** **Explore** and identify the way sound is made through vibration in a range of different musical instruments from around the world **Find** out how the pitch and volume of sounds can be changed in a variety of ways. ***Pupils might work scientifically by:*** finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. They might make earmuffs from a variety of different materials to investigate which provides the best insulation against sound. They could make and play their own instruments by using what they have found out about pitch and volume.	**Notes and Non-Statutory Guidance** **Construct** simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. **Draw** the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage; these will be introduced in year 6. **Note**: Pupils might use the terms current and voltage, but these should not be introduced or defined formally at this stage. Pupils should be taught about precautions for working safely with electricity. ***Pupils might work scientifically by***: observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.

Year 3 Investigative Science Skills

SC1 Investigative Science – Key Skills		Emerging (Level 2)	Developing (Level 3)	Consolidating (Level 4)
	Planning	I am getting better at telling my friends how I might find something out	This is the equipment/information I need for my investigation	This is the equipment /information I need
	Collecting data What are we measuring or observing?	I am practicing to use the equipment given to me to measure things and see (sense) what is happening	I am getting better at choosing which equipment I need.	This is how I am going to use the equipment…
	Collecting data What might affect what we are observing or measuring	I am practising to tell my friends what it is I am going to measure or look for With some help from my teachers I am practising to ask questions like; What do you think will happen to …. if we…?	With help: I am practising to know what to measure or observe What do you think will happen to ....if we change ....and keep .....the same? I think X might happen because (everyday knowledge)	I am going to look/listen to …. X I am going to easure …..X List up to 3 variables that will effect X. A, B and C will effect X I think ..... because…. (science knowledge)
	Gathering evidence	I am getting better at measuring things with help from my teacher and my friends	With help from my friends or teacher I am getting better at saying: This is what I have observed… This is what I have measured …(Accurate)	This is what I have observed… This is what I have measured … (Accurate)
	Describing what's been found out with a reason	I am getting better at telling my friends what I have found out.	I am practising to say: we found out ..... and we think it happened because	We found out X. The faster the X the slower the Y (er/er rule)
	Using evidence to explain	I'm practising to spot surprises I thought this might happen… and the surprise was … happened. I am practicing to sort things into different groups		We didn't think this would happen ….. This is a spooky result. It might of happened because Identifies evidence and uses it. Our evidence is X and it tell us …
	Communicating scientific ideas	With help I am getting better at showing you what I have found out using a ….. simple tables, drawing, charts	I am practising to show you what I have found out using tables bar charts, drawing, writing	
	Suggesting improvements	With help I am getting better at saying: if I was to do it again I might do it like this	I am practising to suggest improvements to our method . If we did this again we would do ……	Suggest improvements to our method and say why. If we did this again we would do X because …
	Keeping safe		With help I am getting better at telling you if something might not be safe	This could be a risk in my investigation..

Year 4 - Science

Working Scientifically	Animals Including Humans	Living Things and their habitats	Light	Forces and Magnets	Earth and Space
• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.	• 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. • 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.	• 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.	• recognise that they need light in order to see things and that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous and that there are ways to protect their eyes • recognise that shadows are formed when the light from a light source is blocked by a solid object • find patterns in the way that the size of shadows change.	• 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.	• 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.
Notes and Non-Statutory Guidance Pupils should: • Have a range of scientific experiences to enable them to raise their own questions about the world around them. Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. • Look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. • They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. • Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Pupils should use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences. • Pupils are not expected to cover each aspect for every area of study.	**Notes and Non-Statutory Guidance** **Learn** about the importance of nutrition/ introduce the main body parts associated with the skeleton and muscles & main body parts associated with the digestive system e.g. mouth, tongue, teeth, oesophagus, stomach and small and large intestine **Find** out how different parts of the body have special functions. **Pupils might work scientifically by:** identifying/ grouping animals with/ without skeletons. Observe/ compare their movement; **Compare** and contrast diets of different animals (e.g. pets)/ decide ways of grouping them according to what they eat. **Research** different food groups/ design meals **Compare** the teeth of carnivores/ herbivores, give reasons for differences; finding out what damages teeth and how to look after them. **Draw**/ discuss ideas about the digestive system and compare with models or images.	**Notes and Non-Statutory Guidance** **Use** local environment throughout the year to raise/ answer questions to identify/ study plants/ animals in their habitat. **Identify** how habitat changes throughout the year. **Explore** possible ways of grouping a wide selection of living things incl. animals/ flowering/ non-flowering plants. **Put** vertebrate animals into groups: fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. **Explore** positive/ negative examples of human impact on environments e.g. nature reserves, ecologically planned parks, garden ponds, or population growth/development/ litter/ deforestation. ***Pupils might work scientifically by:*** use/make simple guide/ keys to explore/ identify local plants/ animals; Make a guide to local living things	**Notes and Non-Statutory Guidance** **Explore** what happens when light reflects off a mirror/ other reflective surfaces **Play** mirror games to help them to answer questions about how light behaves. **Learn** why it is important to protect their eyes from bright lights. **Look** for, and measure, shadows, and find out how they are formed and what might cause the shadows to change. **Note:** Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses. ***Pupils might work scientifically by:*** look for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.	**Notes and Non-Statutory Guidance** **Observe** that magnetic forces can act without direct contact (most forces - direct contact is necessary). **Explore** behaviour and everyday uses of different magnets (bar, ring, button, horseshoe). ***Pupils might work scientifically by:*** comparing how different things move and grouping them; raising questions/ test to find out how far things move on different surfaces. **Explore** strengths of different magnets and finding a fair way to compare them **Sort** materials into those that are magnetic/non-magnetic **Look** for patterns in way magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another **Identify** how these properties make magnets useful in everyday items and suggesting creative uses for different magnets	**Notes and Non-Statutory Guidance** Introduce model of the Sun and Earth to explain day and night. The Sun is a star at centre of our solar system with 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto now a 'dwarf planet' since 2006). The moon is a celestial body that orbits a planet (Earth has 1 moon; Jupiter has 4 large/ numerous smaller moons). **Note**: It is not safe to look directly at the Sun, even wearing dark glasses. Find out about the way that ideas about the solar system have developed e.g. geocentric model gave way to the heliocentric model (Ptolemy, Alhazen, Copernicus) ***Pupils might work scientifically by***: comparing the time of day at different places on the Earth Creating simple models of the solar system/ simple shadow clocks and sundials, calibrated to show midday/ start/ end of the school day; finding out why some people think that structures such as research Stonehenge.

Year 4 Investigative Science Skills

SC1 Investigative Science – Key Skills

	Emerging (Level 2)	Developing (Level 3)	Consolidating (Level 4)
Planning	I am getting better at telling my friends how I might find something out	This is the equipment/information I need for my investigation	This is the equipment /information I need
Collecting data What are we measuring or observing?	I am practicing to use the equipment given to me to measure things and see (sense) what is happening	I am getting better at choosing which equipment I need.	This is how I am going to use the equipment…
Collecting data What might affect what we are observing or measuring	I am practising to tell my friends what it is I am going to measure or look for With some help from my teachers I am practising to ask questions like; What do you think will happen to …. if we…?	With help: I am practising to know what to measure or observe What do you think will happen to ....if we change ....and keep .....the same? I think X might happen because (everyday knowledge)	I am going to look/listen to …. X I am going to easure …..X List up to 3 variables that will effect X. A, B and C will effect X I think ..... because…. (science knowledge)
Gathering evidence	I am getting better at measuring things with help from my teacher and my friends	With help from my friends or teacher I am getting better at saying: This is what I have observed… This is what I have measured …(Accurate)	This is what I have observed… This is what I have measured … (Accurate)
Describing what's been found out with a reason	I am getting better at telling my friends what I have found out.	I am practising to say: we found out ..... and we think it happened because	We found out X. The faster the X the slower the Y (er/er rule)
Using evidence to explain	I'm practising to spot surprises I thought this might happen… and the surprise was … happened. I am practicing to sort things into different groups		We didn't think this would happen ….. This is a spooky result. It might of happened because Identifies evidence and uses it. Our evidence is X and it tell us …
Communicating scientific ideas	With help I am getting better at showing you what I have found out using a ….. simple tables, drawing, charts	I am practising to show you what I have found out using tables bar charts, drawing, writing	
Suggesting improvements	With help I am getting better at saying: if I was to do it again I might do it like this	I am practising to suggest improvements to our method . If we did this again we would do ……	Suggest improvements to our method and say why. If we did this again we would do X because …
Keeping safe		With help I am getting better at telling you if something might not be safe	This could be a risk in my investigation.

Year 5 – Science

Working Scientifically	Living Things and Their Habitats	Animals including Humans	Properties and Changes of Materials	Electricity
• 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 increasing accuracy and precision, taking repeat readings when appropriate • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar 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, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • identifying scientific evidence that has been used to support or refute ideas or arguments.	• 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.	• describe the changes as humans develop to old age. • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood □□describe the ways in which nutrients and water are transported within animals, including humans.	• 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	• 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.
Notes and Non-Statutory Guidance Pupils should: • use their science experiences to: explore ideas/ raise different kinds of questions; select/ plan the most appropriate type of scientific enquiry to use to answer scientific questions; • recognise when/ how to set up comparative/ fair tests. Explain which variables to controlled and why. • Use/ develop keys etc to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. • Make own decisions about observations/ measurements to make etc • Choose appropriate equipment and explain how to use it accurately. • Decide how to record data; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Use results to identify when further tests and observations might be needed • Recognise which secondary sources will be most useful/ begin to separate opinion from fact. Use relevant scientific language/ illustrations to discuss, communicate/ justify scientific ideas. • Ttalk about how scientific ideas have developed over time. • Pupils are not expected to cover each aspect for every area of study.	**Notes and Non-Statutory Guidance** **Raise** questions about the local environment throughout the year. **Observe** life-cycle changes in a variety of living things e.g. plants in the vegetable garden or flower border, and animals in the local environment. **Find out** about work of naturalists and animal behaviourists, e.g. David Attenborough and Jane Goodall. **Find out** about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals (Humans – sec education in Y6). ***Pupils might work scientifically by:*** observing and comparing the life cycles of plants and animals in local environment with other plants and animals around the world (eg rainforest, oceans, desert areas, in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. They might observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.	**Notes and Non-Statutory Guidance** **Build** on their learning in Year 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function. **Draw** a timeline to indicate stages in the growth and development of humans. **Learn** about the changes experienced in puberty. (Taught in Y6 also – I more detail - as part of Sex Ed) **Learn** how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body. **Pupils could work scientifically by:** researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows. exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.	**Notes and Non-Statutory Guidance** **Build** a more systematic understanding of materials by exploring /comparing properties of broad range of materials, including what they learnt about magnetism/ electricity in Year 3/4. **Explore** reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes. **Observe/ record** evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temp. on washing drying or snowmen melting. **Note:** Pupils are not required to make quantitative measurements about conductivity and insulation at this stage. Sufficient to observe that some conductors will produce a brighter bulb in a circuit than others and that some materials will feel hotter than others when a heat source is placed against them. **Safety** guidelines should be followed when burning materials. ***Pupils might work scientifically by:*** carrying out tests to answer questions, for example, 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?' They might compare materials in order to make a switch in a circuit.	**Notes and Non-Statutory Guidance** **Build** on work in Year 3 Construct simple series circuits, to help answer questions about what happens when different components are tried, e.g., switches, bulbs, buzzers and motors. **Learn** how to represent a simple circuit in a diagram using recognised symbols. **Note:** Pupils are expected to learn only about series circuits, not parallel circuits. Pupils should be taught to take the necessary precautions for working safely with electricity. **Pupils might work scientifically by:** systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.

Year 5 Investigative Science Skills

		Emerging (Level 3)	Developing (Level 4)	Consolidating (Level 5)
SC1 Investigative Science – Key Skills	Planning	This is the equipment/information I need for my investigation	This is the equipment /information I need	
	Collecting data What are we measuring or observing?	I am getting better at choosing which equipment I need.	This is how I am going to use the equipment…	I am using this equipment because ….
	Collecting data What might affect what we are observing or measuring	With help: I am practising to know what to measure or observe What do you think will happen to ....if we change ....and keep .....the same? I think X might happen because (everyday knowledge)	I am going to look/listen to …. X I am going to measure …..X List up to 3 variables that will effect X. A, B and C will effect X I think ..... because…. (science knowledge)	I am going to observe … because Choose most suitable variable A, B and C etc will effect Y and the one we will investigate is A because … What do you think will happen to Y if we change a and keep b, and c the same (using appropriate units)
	Gathering evidence	With help from my friends or teacher I am getting better at saying: This is what I have observed… This is what I have measured …(Accurate)	This is what I have observed… This is what I have measured … (Accurate)	This is what I have observed… This is what I have measured … They are accurate because.. They are reliable because ….
	Describing what's been found out with a reason	I am practising to say: we found out ..... and we think it happened because	We found out X. The faster the X the slower the Y (er/er rule)	Using the graph and table, we found out X. This happened because…
	Using evidence to explain		We didn't think this would happen ….. This is a spooky result. It might of happened because Identifies evidence and uses it. Our evidence is X and it tell us …	We didn't think this would happen ….. This is a spooky (anomalous) result. It might have happened because …. We even do our test to see if it happened again. identifies evidence and uses it. Our evidence is X and tell us … (in any application)
	Communicating scientific ideas Using scientific words and symbols	I am practising to show you what I have found out using tables bar charts, drawing, writing		
	Suggesting improvements	I am practising to suggest improvements to our method . If we did this again we would do ……	Suggest improvements to our method and say why. If we did this again we would do X because …	Evaluate effectiveness of method. Our method was successful because …. We could improve it if we ….I
	Keeping safe	With help I am getting better at telling you if something might not be safe	This could be a risk in my investigation..	This is a list of all the possible risks

Year 6 – Science

Working Scientifically	Living Things and their habitats	Evolution and Inheritance	Properties and changes of materials (Non-reversible)	Light	Forces
• 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 increasing accuracy and precision, taking repeat readings when appropriate • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar 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, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • identifying scientific evidence that has been used to support or refute ideas or arguments.	• describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics. • Describe the life process of reproduction (humans) • Recognise the impact of diet, exercise, drugs and life style on the way their bodies function (From Y5 Animals incl humans)	• 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.	• 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. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	• 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. RECAP: Y4 Earth and Space objectives	• 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.
Notes and Non-Statutory Guidance Pupils should: • use their science experiences to: explore ideas/ raise different kinds of questions; select/ plan the most appropriate type of scientific enquiry to use to answer scientific questions; • recognise when/ how to set up comparative/ fair tests. Explain which variables to controlled and why. • Use/ develop keys etc to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. • Make own decisions about observations/ measurements to make etc • Choose appropriate equipment and explain how to use it accurately. • Decide how to record data; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Use results to identify when further tests and observations might be needed • Recognise which secondary sources will be most useful/ begin to separate opinion from fact. Use relevant scientific language/ illustrations to discuss, communicate/ justify scientific ideas. • Ttalk about how scientific ideas have developed over time. • Pupils are not expected to cover each aspect for every area of study.	**Notes and Non-Statutory Guidance** **Build** on learning about grouping living things in Y4 by looking at the classification system in more detail. **Introduce** idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. **Observe** (directly where possible) to classify animals into commonly found invertebrates (e.g. insects, spiders, snails, worms)/ vertebrates (fish, amphibians, reptiles, birds and mammals). **Find** out about the significance of the work of scientists e.g. Carl Linnaeus, a pioneer of classification. **Learn** how to keep bodies healthy and how bodies might be damaged. Learn about the changes experience in puberty ***Pupils might work scientifically by***: use classification systems/keys to identify animals/ plants in immediate environment. Research unfamiliar animals/ plants from broad range of other habitats. Decide on classification.	**Notes and Non-Statutory Guidance** **Build** on fossils Y3 rock topic. **Find** out more about how living things on earth have changed over time. **Introduce** idea that characteristics are passed from parents to their offspring, e.g. by considering different breeds of dogs, and what happens when e.g. labradors crossed with poodles. **Appreciate** that variation in offspring over time can make animals more or less able to survive in particular environments e.g. explore how giraffes' necks got longer, or development of insulating fur on the arctic fox. **Find** out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution. **Note:** At this stage, pupils are not expected to understand how genes and chromosomes work.	**Notes and Non-Statutory Guidance** **Explore** changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda. **Find** out about how chemists create new materials e.g. Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton. **Observe** and compare the changes that take place e.g. burning different materials or baking bread or cakes. **Research** and discuss how chemical changes have an impact on our lives, for example, cooking, and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.	**Notes and Non-Statutory Guidance** **Build** on light in Y4 **Explore** the way that light behaves, including light sources, reflection and shadows. **Talk** about what happens and make predictions. ***Pupils might work scientifically by:*** deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. **Investigate** the relationship between light sources, objects and shadows by using shadow puppets. Look at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur).	**Notes and Non-Statutory Guidance** **Explore** falling objects and raise questions about the effects of air resistance. **Observe** how different objects such as parachutes and sycamore seeds fall. **Experience** forces that make things begin to move, get faster or slow down. **Explore** effects of friction on movement and find out how it slows or stops moving objects e.g. observing the effects of a brake on a bicycle wheel. Explore effects of levers, pulleys and simple machines on movement. **Find** out how scientists e.g. Galileo Galilei / Isaac Newton helped develop theory of gravitation. ***Pupils might work scientifically by:*** exploring falling paper cones or cup-cake cases. Designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. They might explore resistance in water by making and testing boats of different shapes. They might design and make products that use levers, pulleys, gears and/or springs and explore their effects.

Year 6 Investigative Science Skills

		Emerging (Level 3)	Developing (Level 4)	Consolidating (Level 5)
SC1 Investigative Science – Key Skills	Planning	This is the equipment/information I need for my investigation	This is the equipment /information I need	
	Collecting data What are we measuring or observing?	I am getting better at choosing which equipment I need.	This is how I am going to use the equipment…	I am using this equipment because ….
	Collecting data What might affect what we are observing or measuring	With help: I am practising to know what to measure or observe What do you think will happen to ....if we change ....and keep .....the same? I think X might happen because (everyday knowledge)	I am going to look/listen to …. X I am going to measure …..X List up to 3 variables that will effect X. A, B and C will effect X I think ..... because…. (science knowledge)	I am going to observe … because Choose most suitable variable A, B and C etc will effect Y and the one we will investigate is A because … What do you think will happen to Y if we change a and keep b, and c the same (using appropriate units)
	Gathering evidence	With help from my friends or teacher I am getting better at saying: This is what I have observed… This is what I have measured …(Accurate)	This is what I have observed… This is what I have measured … (Accurate)	This is what I have observed… This is what I have measured … They are accurate because.. They are reliable because ….
	Describing what's been found out with a reason	I am practising to say: we found out ..... and we think it happened because	We found out X. The faster the X the slower the Y (er/er rule)	Using the graph and table, we found out X. This happened because…
	Using evidence to explain		We didn't think this would happen ….. This is a spooky result. It might of happened because Identifies evidence and uses it. Our evidence is X and it tell us …	We didn't think this would happen ….. This is a spooky (anomalous) result. It might have happened because …. We even do our test to see if it happened again. identifies evidence and uses it. Our evidence is X and tell us … (in any application)
	Communicating scientific ideas	I am practising to show you what I have found out using tables bar charts, drawing, writing		
	Suggesting improvements	I am practising to suggest improvements to our method . If we did this again we would do ……	Suggest improvements to our method and say why. If we did this again we would do X because …	Evaluate effectiveness of method. Our method was successful because …. We could improve it if we ….I
	Keeping safe	With help I am getting better at telling you if something might not be safe	This could be a risk in my investigation..	This is a list of all the possible risks