



Durweston CE VA Primary School

Science Policy

Governors are mindful of their duties under the Equality Act 2010 and have screened this document to ensure compliance with the law.

Durweston CE Primary School – Science Policy

Vision – the essential characteristics of scientists!

At Durweston, we want our children to have:

- The ability to think independently and raise questions about working scientifically
- The confidence and competence in the full range of practical skills to enable them to take the initiative in planning and carrying out scientific investigations
- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings
- The ability to undertake practical work in a variety of contexts including fieldwork
- A passion for science and its application in past, present and future technologies

Equality, Diversity and Inclusion

Our curriculum planning ensures regular, progressive access to science for all children irrespective of gender, race, creed or disability.

We recognise the fact that we have children of differing ability in all our classes, and we provide suitable learning opportunities for all by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies:

- setting tasks that are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty, where not all children complete all tasks;
- providing a range of challenges with different resources;
- having more adults support the work of individual children or small groups

Planning

Science planning follows the National Curriculum 2014 using two-year mixed age planning from the Hamilton Trust. <https://www.hamilton-trust.org.uk/science/> These plans are free.

This planning ensures that each child covers all of the required elements of the National Curriculum. Each summer, each class has a dedicated Science and DT topic where children are encouraged to take a broader view of science and scientists and link science to other areas of the curriculum.

	Dolphins (Hamilton year 1/2 plans)	Seahorses (Hamilton year 2 and year 3 plans)	Sharks (Hamilton year 3/4 plans)	Porpoises (Hamilton year 5/6 plans)
Autumn A	Amazing Me!	Rocks and Fossils	Electric Personalities	Illustrating Life Cycles
	Wild Weather	Amazing Magnets	What's the matter?	Materials Consultants
Spring A	Brilliant Builders	Habitats	A world of living things	The Human Species
	Growing Things	Keeping Healthy	A Feast of Flowers, Fruits and Seeds	Theatre Lighting Technicians
Summer A	Wild and Wonderful Creatures	Ready, Steady, Grow	Shining Light	Electric Art
	Food chains	Artful Flowers, Fruits and Seeds	Fit for Success?	Medical Manoeuvres (Revision)
Autumn B	People and their Pets	Healthy Animals	This Planet Rocks	Special Effects Materials
	Weather Art	Light and Shadow	Sounds Spectacular	Earth and Space
Spring B	Brilliant Builders: Comparing Materials	Squash, Bend, Twist and Stretch	Habitat Helpers	Welcome to Force land
	Plants: Art and nature	Materials Matter	Greatly Green Growers	The Classification Code
Summer B	Exploring Changes	Roots and Shoots	The Circle of Life	Survival of the Fittest
	Habitats and Homes	Gardens and Allotments	Magnetic Fun And Games	Sensational Science (Revision)

Biology	Physics	Chemistry
Animals including Humans Seasonal Changes Plants Living Things and Their Habitats Evolution and Inheritance	Light Forces and Magnets Sound Electricity Earth and Space	Everyday Materials Rocks States of Matter

Every child will have a black and white copy of this in science books. They must colour in the grid as they complete the unit. The sheet is then handed up to their next teacher so that a record is kept of the units they have not covered and the year 6 teacher can plan accordingly.

Foundation stage

We teach science in Starfish as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals which underpin the curriculum planning for children aged three to five. These topics link with the KS1 and 2 planning. Science makes a significant contribution to the objectives in the Early Learning Goals of developing a child's knowledge and understanding of the world.

Assessment

We assess the children's work in Science against the Chris Quigley milestones (Appendix 2). Observations made during the year inform future planning and enable the teacher to make an annual assessment of progress as part of each child's annual report to parents. Each year, we also keep and annotate all the Science work of an AA, A and BA child from each year group to facilitate whole-school monitoring.

Resources

We have a limited range of resources to support the teaching of Science across the school which is kept upstairs. This room is accessible to children only under adult supervision. Please speak to the Science co-ordinator if there is anything that you need and/or record in your termly topic evaluation things that need to be purchased to enable delivery of the topic.

Health and safety

Science is a subject with considerable health and safety implications. We endeavour to teach children to respect and handle safely both living things and any equipment and materials which they made need to use. Pupils and teachers recognise the hazards involved, assess the risks and take action to minimise both in all science activities. Please see attached Science Risk Assessment (Appendix 3)

Monitoring and review

The co-ordination of the Science curriculum is the responsibility of the Science subject leader. Each term, the subject leader will monitor planning to make sure it follows the long-term plan and support colleagues in their teaching. They will support class teachers in the gathering of samples of work. At the end of the year, they will scrutinize the work sampled and write an action plan based on their findings.

This policy will be reviewed every four years.

Spring 2019 NB

Appendix 1

Name _____

Science Coverage Record Sheet

Please colour the topics as you complete them. Keep the sheet in a pocket in the back of your Science book. Please do not stick in, as the sheets need to move up with you.

Science 2-year plan

	Dolphins (Hamilton year 1/2 plans)	Seahorses (Hamilton year 2 and year 3 plans)	Sharks (Hamilton year 3/4 plans)	Porpoises (Hamilton year 5/6 plans)
Autumn A	Amazing Me!	Rocks and Fossils	Electric Personalities	Illustrating Life Cycles
	Wild Weather	Amazing Magnets	What's the matter?	Materials Consultants
Spring A	Brilliant Builders	Habitats	A world of living things	The Human Species
	Growing Things	Keeping Healthy	A Feast of Flowers, Fruits and Seeds	Theatre Lighting Technicians
Summer A	Wild and Wonderful Creatures	Ready, Steady, Grow	Shining Light	Electric Art
	Food chains	Artful Flowers, Fruits and Seeds	Fit for Success?	Medical Manoeuvres (Revision)
Autumn B	People and their Pets	Healthy Animals	This Planet Rocks	Special Effects Materials
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Spring B	Brilliant Builders: Comparing Materials	Squash, Bend, Twist and Stretch	Habitat Helpers	Welcome to Force land
	Plants: Art and nature	Materials Matter	Greatly Green Growers	The Classification Code
Summer B	Exploring Changes	Roots and Shoots	The Circle of Life	Survival of the Fittest
	Habitats and Homes	Gardens and Allotments	Magnetic Fun And Games	Sensational Science (Revision)

Key

Biology	Physics	Chemistry
Animals including Humans Seasonal Changes Plants Living Things and Their Habitats Evolution and Inheritance	Light Forces and Magnets Sound Electricity Earth and Space	Everyday Materials Rocks States of Matter

Appendix 1 Planning and Assessment**Essential Opportunities**

	Key Stage 1	Key Stage 2
Working Scientifically	Across all year groups, scientific knowledge and skills should be learned by working scientifically. See Essentials for progress .	
Biology	<p><u>Plants</u> Identify, classify and describe their basic structures Observe and describe growth and conditions for growth</p> <p><u>Habitats</u> Look at the suitability of environments and at food chains</p> <p><u>Animals and humans</u> Identify, classify and observe Look at growth, basic needs, exercise, food and hygiene</p>	<p><u>Plants</u> Look at the function of the parts of flowering plants, requirements of growth, water transportation in plants, life cycles and seed dispersal</p> <p><u>Evolution and Inheritance</u> Look at resemblance in offspring Look at changes in animals over time Look at adaptation to environments Look at differences in offspring Look at adaptation and evolution Look at changes to the human skeleton over time</p> <p><u>Animals and humans</u> Look at nutrition, transportation of water and nutrients in the body and the muscle and skeleton system of humans and animals Look at the digestive system in humans Look at teeth Look at the human circulatory system</p> <p><u>All living things</u> Identify and name plants and animals Look at classification keys Look at the life cycle of animals and plants</p>

		<p>Look at the classification of plants, animals and micro-organisms</p> <p>Look at the reproduction in plants and animals and human growth changes</p> <p>Look at the effect of diet, exercise and drugs.</p>
Chemistry	<p><u>Materials</u> Identify, name describe, classify, compare properties and changes</p> <p>Look at the practical uses of everyday materials</p>	<p><u>Rocks and fossils</u> Compare and group rocks and describe the formation of fossils</p> <p><u>States of matter</u> Look at solids, liquids and gases, changes of state, evaporation, condensation and the water cycle</p> <p><u>Materials</u> Examine the properties of materials using various tests Look at solubility and recovering dissolved substances Separate mixtures Examine changes to materials that create new materials that are not usually reversible</p>
Physics	<p><u>Light</u> Look at sources and reflections</p> <p><u>Electricity</u> Look at appliances and circuits</p> <p><u>Forces</u> Describe basic pushes and pulls</p> <p><u>Earth and Space</u> Observe seasonal changes</p>	<p><u>Light</u> Look at sources, reflections and shadows Explain how light appears to travel in straight lines and how this affects seeing and shadows</p> <p><u>Sound</u> Look at sources, vibration, volume and pitch</p> <p><u>Electricity</u> Look at appliances, circuits, lamps, switches, insulators and conductors</p> <p><u>Forces and Magnets</u> Look at contact and distant forces, attraction and repulsion, comparing and grouping materials</p>

		<p>Look at poles, attraction and repulsion Look at the effect of gravity and drag forces Look at transference of forces in gears, pulleys, levers and springs</p> <p><u>Earth and Space</u></p> <p>Look at the movement of the Earth and the Moon Explain day and night.</p>
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Essential Learning Objectives

<ul style="list-style-type: none"> To work scientifically 	<p>Biology</p> <ul style="list-style-type: none"> To understand plants To understand humans and animals To investigate living things To understand evolution and inheritance 	<p>Chemistry</p> <ul style="list-style-type: none"> To investigate materials 	<p>Physics</p> <ul style="list-style-type: none"> To understand movement, forces and magnets To understand the Earth's movement in Space To investigate light and seeing To investigate sound and hearing To understand electrical circuits
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Essentials for Progress

	Milestone 1 (KS1)	Milestone 2 (LKS2)	Milestone 3 (UKS2)
Working scientifically	<ul style="list-style-type: none"> asking simple questions and recognising that they can be answered in different ways 	<ul style="list-style-type: none"> asking relevant questions and using different types of scientific enquiries to answer them 	<ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling

	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<p>variables where necessary.</p> <ul style="list-style-type: none"> • 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.
Biology To understand	Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous	Identify and describe the functions of different parts of flowering plants: roots,	Relate knowledge of plants to studies of evolutions and inheritance Relate knowledge of plants to studies of all

plants	<p>and evergreen.</p> <ul style="list-style-type: none"> • Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. • Observe and describe how seeds and bulbs grow into mature plants. • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<p>stem, leaves and flowers.</p> <ul style="list-style-type: none"> • 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 role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	living things
To understand animals and humans	<p>Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates.</p> <ul style="list-style-type: none"> • 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 (birds, fish, amphibians, reptiles, mammals and invertebrates, 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. • Notice that animals, including humans, have offspring which grow into adults. 	<p>Identify that animals, including humans, need the right types and amounts of nutrition that they cannot make their own food and they get nutrition from what they eat.</p> <ul style="list-style-type: none"> • Describe the ways in which nutrients and water are transported within animals, including humans. • Identify that humans and some 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. 	<p>Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood (including the pulse and clotting).</p>

	<ul style="list-style-type: none"> • Investigate 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. 		
To investigate living things	<p>Explore and compare the differences between things that are living, that are dead and that have never been alive.</p> <ul style="list-style-type: none"> • 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 	<p>Identify and name a variety of living things (plants and animals) in the local and wider environment, using classification keys to assign them to groups.</p> <ul style="list-style-type: none"> • Give reasons for classifying plants and animals based on specific characteristics. • Recognise that environments are constantly changing and that this can sometimes pose dangers to specific habitats. 	<p>Describe the life cycles common to a variety of animals, including humans (birth, growth, development, reproduction, death), and to a variety of plants (growth, reproduction and death).</p> <ul style="list-style-type: none"> • Explain the classification of living things into broad groups according to common, observable characteristics and based on similarities and differences, including plants, animals and micro-organisms. • Describe the life process of reproduction in some plants and animals. • Describe the changes as humans develop from birth to old age. • Recognise the impact of diet, exercise, drugs and lifestyle on the way human bodies function.
To understand evolution and inheritance	Understand how humans resemble their parents in many features	Identify how plants and animals, including humans, resemble their parents in many	Recognise that living things produce offspring of the same kind, but normally offspring vary

		<p>features.</p> <ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Identify how animals and plants are suited to and adapt to their environment in different ways. 	<p>and are not identical to their parents.</p> <ul style="list-style-type: none"> • Describe how adaptation leads to evolution. • Recognise how and why the human skeleton has changed over time, since we separated from other primates.
<p>Chemistry To investigate materials</p>	<p>Distinguish between an object and the material from which it is made.</p> <ul style="list-style-type: none"> • 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. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. • Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard 	<p>Compare and group together different kinds of rocks on the basis of their simple, physical properties.</p> <ul style="list-style-type: none"> • Relate the simple physical properties of some rocks to their formation (igneous or sedimentary). • Describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock <p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <ul style="list-style-type: none"> • Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. • Identify the part played by evaporation 	<p>Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets.</p> <ul style="list-style-type: none"> • Understand how 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 condensation in the water cycle and associate the rate of evaporation with temperature.	and changes of state are reversible changes. • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning, oxidation and the action of acid on bicarbonate of soda.
Physics To understand movement, forces and magnets	Notice and describe how things move, using simple comparisons such as faster and slower. • Compare how different things move.	Notice that some forces need contact between two objects and some forces 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. • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. • Describe, in terms of drag forces, why moving objects that are not driven tend to slow down. • Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.
To understand light and seeing	Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because	Notice that light is reflected from surfaces. • Associate shadows with a light source	Understand that light appears to travel in straight lines.

	light travels from them to our eyes.	being blocked by something; find patterns that determine the size of shadows.	<ul style="list-style-type: none"> • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.
To investigate sound and hearing	Observe and name a variety of sound sources, noticing that we hear with our ears	Identify how sounds are made, associating some of them with something vibrating. <ul style="list-style-type: none"> • Recognise that sounds get fainter as the distance from the sound's source increases. 	Find patterns between the pitch of a sound and features of the object that produced it. <ul style="list-style-type: none"> • Find patterns between the volume of a sound and the strength of the vibrations that produced it.
To understand electrical circuits	Identify common appliances that run on electricity. <ul style="list-style-type: none"> • Construct a simple series electrical circuit 	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. <ul style="list-style-type: none"> • 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 	Identify and name the basic parts of a simple electrical circuit, including cells, wires, bulbs, switches and buzzers. <ul style="list-style-type: none"> • 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.
To understand the Earth's movement in Space	. Observe the apparent movement of the Sun during the day.	Describe the movement of the Earth relative to the Sun in the solar system. <ul style="list-style-type: none"> • Describe the movement of the Moon 	Describe the Sun, Earth and Moon as approximately spherical bodies. <ul style="list-style-type: none"> • Use the idea of the Earth's rotation to

	<ul style="list-style-type: none">• Observe changes across the four seasons.• Observe and describe weather associated with the seasons and how day length varies.	relative to the Earth.	explain day and night.
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**Risk Assessment****FORM 6**Title **Science Risk Assessment**

Date of Assessment January 2017

Assessment completed by (Name) **Nicola Brooke**Due for review **Annually**(Designation) **Head teacher**

Hazard / Risk	Who is at risk?	Current Controls in Place	Level of Residual Risk
Things at the venue, parts of the activity etc that could cause harm		Are they adequate? Is the risk acceptable? Refer to generic RAs or Form 2 if applicable	Low, medium, high

Electricity	Pupils	Children are never allowed to experiment with mains electricity. Do not allow pupils to cut open batteries. Tiny batteries are not appropriate.	Low
Chemicals		The only substances we experiment with are those readily available from Tesco. Children are reminded to put anything in their mouth during a Science lessons unless instructed to do so by their teacher.	
Heat sources		<p>Several practical activities require the use of heat. The following are suitable and acceptable sources but must be closely supervised by an adult:</p> <p>Hot water/hot water bottles</p> <p>Water from a kettle or water heater should be cooled before use to no more than 50 °C.</p> <p>Tealights</p> <p>Place securely in a metal tray, e.g. baking tray or tin lid filled with sand.</p> <p>Mains electric rings</p> <p>Induction hob available in the kitchen. Only to be used under close adult supervision.</p> <p>Hairdryers</p> <p>Do not bring hairdryers in from home because they may not have been constructed to the same standards as those intended for use in schools. Hairdryers available from school suppliers are thoroughly tested beyond the requirements for domestic hairdryers.</p> <p>Spirit burners, picnic stoves and other bottled gas devices, hot-air paint strippers and Bunsen burners are not recommended for Primary school use.</p>	Low

<p><i>Animals</i></p> <p><i>The hazards associated with the keeping of animals are the transmission of disease (particularly from farm animals) or parasites, bites, or stings; and infection or contamination due to animal waste products</i></p>		<p><i>Heat Sources: General Precautions</i></p> <p>Warn pupils about hazards involved, e.g. hotplates may be hot without appearing so.</p> <p>Ensure all heating activities take place under close adult supervision.</p> <p>Warn pupils not to lean across the table in case they come into contact with the flame/hot object.</p> <p>Combustible materials should be removed.</p> <p>Never leave a naked flame unattended. Dispose of matches carefully.</p> <p>Long hair and loose clothing must be tied back.</p> <p>Do not allow lit candles to be carried around.</p> <p>Pupils should stand for the activity, so that they can move away quickly in case of an accident.</p> <p>Animals kept in schools pose minimal hazards provided that they are kept well in appropriate housing, people in charge of them are aware of any particular requirements the animals have and general precautions outlined below are followed. Typically, Primary schools keep fish, various small mammals, giant African snails and stick insects. Greater hazards are involved when animals are brought into school for short periods, e.g. pets or garden ‘minibeasts’.</p> <p>Proper planning regarding the care of animals is essential before deciding to keep animals in school. Consult a reference book before keeping any animal. Use reputable</p>	
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		<p>suppliers</p> <p>Keep animal housing clean and disinfect at regular intervals.</p> <p>Make suitable arrangements for holiday periods.</p> <p>Where animals are brought into school for a short period, ensure staff have sufficient experience of handling and looking after the animals concerned. Refer to reference texts (including CLEAPSS guidance documents listed below) if unsure.</p> <p>Liaise with parents when pets are brought in to school to ensure the particular animal is suitable for the particular class group.</p> <p>Cover cuts and abrasions on exposed skin.</p> <p>If animals run free on the floor or on tables, surfaces must be disinfected afterwards.</p> <p>Pupils and staff must wash their hands before and after handling animals. Pupils should wash hands in the classroom so that staff can be sure that hand washing takes place. Very young pupils should be supervised when washing hands.</p> <p>Animal wastes must be disposed of hygienically and any contaminated surfaces cleaned and disinfected.</p> <p>Children known to have allergic reactions to animals must have restricted access to animals that may trigger a response. Similar considerations apply to children who may be phobic about certain animals.</p> <p>The following CLEAPSS documents provide comprehensive guidance:</p> <ul style="list-style-type: none"> • 'Bringing Pets and Other Animals into Schools' (PS 55) • 'Small Mammals' (L52) • 'Housing and Keeping Animals' (L56) • 'Incubating and Hatching Eggs' (L71) • 'Aquaria in Primary Schools: Electrical Safety' (L124) • 'Giant African Land Snails' (L197) 	
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<p>Use of Plants in Primary Schools</p> <p><i>The main hazard associated with the use of plants is that many are poisonous or irritants. Some pupils may be particularly vulnerable, e.g. those with allergies or asthma.</i></p>	<ul style="list-style-type: none">• ‘Bees and Beekeeping in Schools’ (PS87) <p>See also guidance on Infection Control on Schools’ PeopleNet.</p> <p>Teach children to avoid touching their eyes when handling plants.</p> <p>Teach children never to taste any part of a plant unless they are certain that it is safe.</p> <p>Warn children not to eat attractive looking fruits and seeds and teach children to always wash their hands after handling plants.</p> <p>The plants listed below are poisonous. However, instances of more serious harm are extremely rare and following the general controls above should be sufficient in most circumstances.</p> <table><tr><th colspan="2">Garden and hedgerow plants</th></tr><tr><td>Black bryony</td><td>Ivy berries</td></tr><tr><td>Black nightshade – especially unripe berries</td><td>Larkspur leaves and seeds</td></tr><tr><td>Bluebell</td><td>Lily of the Valley</td></tr><tr><td>Bracken</td><td>Lupin</td></tr><tr><td>Buttercup</td><td>Mistletoe leaves and berries</td></tr><tr><td>Christmas rose</td><td>Monkshood or aconite</td></tr></table>	Garden and hedgerow plants		Black bryony	Ivy berries	Black nightshade – especially unripe berries	Larkspur leaves and seeds	Bluebell	Lily of the Valley	Bracken	Lupin	Buttercup	Mistletoe leaves and berries	Christmas rose	Monkshood or aconite
Garden and hedgerow plants															
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Bluebell	Lily of the Valley														
Bracken	Lupin														
Buttercup	Mistletoe leaves and berries														
Christmas rose	Monkshood or aconite														

		Cuckoo-pint	Potato – except the tubers	
		Daffodil – all, especially bulbs	Ragwort	
		Deadly nightshade	Rhubarb – except leaf stalks	
		Foxglove	Snowdrop – all, especially bulbs	
		Giant hogweed	Tomato – except fruits	
		Hemlock	Tulip bulbs	
		Henbane	White bryony	
		Iris and ‘flags’, all but especially rhizomes	Woody nightshade – all, especially berries	
		House plants		
		Castor oil plant seeds	Hyacinth bulbs	
		Dumb cane	Poinsettia leaves and flowers	
		Trees and shrubs		
		Broom seeds	Privet – all, especially berries	
		Cherry laurel leaves and fruits	Rhododendron leaves and flowers	
		Holly berries	Snowberry fruits	
		Horse chestnut leaves, flowers and ‘conkers’	Spindle tree	

Micro-organisms <i>The main hazard associated with work with micro-organisms is infection through inhalation, ingestion or entry through the eyes or cuts to the skin.</i>		Laburnum – all, especially seeds	Yew – all, especially seeds	
		Vegetables and fruit		
		Beans – French and red kidney, raw or undercooked	Rhubarb – leaves	
		Potato – all green parts, including tubers	Tomato – leaves	
		<p>See also ‘Plants for Classrooms’ (CLEAPSS document G42).</p> <p>Only the following microbes that are known not to be hazardous to humans should be used:</p> <ul style="list-style-type: none"> • Yoghurt • Baker’s and brewer’s yeast • Mould gardens and compost • Cheese-making bacteria • Edible mushrooms <p>Growing microbes on Petri dishes should not be carried out in Primary schools as this requires special skills, materials and equipment that Primary schools do not possess.</p> <p>Do not use microbes from natural materials such as soil or pond water. Also avoid obviously risky sources such as rubbish from dustbins, rotting meat or fish, human body fluids or the remains of animals.</p>		

<p>Viewing the Sun</p> <p>The main hazard is the sun's rays causing eye damage or fire if shone through convex</p>		<p>Staff and pupils must always wash their hands thoroughly with soap and water after working with microbes.</p> <p>Hands must also be washed before any work in which microbes are used to prepare food that will be tasted. Hands should be dried hygienically using disposable paper towels rather than a hand towel.</p> <p>Cover all cuts and abrasions on staff or pupils before starting work with microbes.</p> <p>All material used for growing microbes should be in covered containers (bottles, jars, cartons with lids, open containers covered with Clingfilm).</p> <p>When growing yeasts, the container should not be completely sealed to allow carbon dioxide to escape.</p> <p>Only grow microbes using the natural materials on which they normally grow.</p> <p>Pupils must never put anything into their mouths during this work.</p> <p>Mould cultures should be dated.</p> <p>If spills from microbe cultures occur, wipe them up immediately. Use disinfectant, wearing plastic or rubber gloves and guard against splashes into the eyes.</p> <p>For disposal, treat used cultures with disinfectant (hypochlorite or Virkon) before the remains are disposed of. Leave to soak overnight and preferably for 24 hours ensuring pupils cannot come into contact with the disinfectant.</p> <p>See also 'Studying Micro-organisms in Primary Schools' (CLEAPSS document L190) and guidance on Infection Control on Schools' PeopleNet.</p> <p>Teach pupils never to look directly at the sun.</p> <p>Be aware that the focusing of the sun's rays with a convex lens can cause a fire. Lenses, especially large ones, should be stored out of direct sunlight.</p>	
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lenses.		<p>Teach pupils using binoculars and telescopes to take care not to look directly at the sun, even accidentally.</p> <p>Special care should be taken when viewing an eclipse of the sun.</p> <p>See also 'Viewing the Sun' (CLEAPSS document PS17).</p>	
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