



Progression in Science							
Teaching Sequence in Science	Each unit of Science begins with a 'think 1' activity to establish prior knowledge and understanding.						
	A glossary will be created with each unit of work for the key vocabulary. This will be taught and revisited throughout the unit. Words may also be added as the unit progresses.						
	Each lesson will begin with a starter to develop scientific thinking.						
	The science knowledge will be taught through a hands-on investigative approach.						
	Careful questioning will be continually used to assess pupil understanding and develop scientific thinking.						
	Pre-loading will be used to link what they have learnt with future learning.						
	Scaffolding will be used to support all children including those with SEND requirements to have access to the full science curriculum.						
	The working scientifically skills that have been matched to each unit will be specifically taught. Each objective will be taught once across each year group.						
	Each unit will end with an assessment opportunity to establish understanding. Key misconceptions will be addressed at this point.						
Finally, all pupils will complete a 'think 2' activity to demonstrate all that they have learnt and the progress they have made.							
Animals including Humans	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>Health and self care: 30-50</p> <ul style="list-style-type: none"> Can tell adults when hungry or tired or when they want to rest or play. Observes the effects of activity on their bodies. Plan so that children can be active in a range of ways, including while using a wheelchair. Encourage children to be active and energetic by organising lively games, since physical activity is important in maintaining good health and in guarding against children becoming overweight or obese in later life. Encourage children to notice the changes in their bodies after exercise, such as their heart beating faster <p>.40-60</p> <ul style="list-style-type: none"> Eats a healthy range of foodstuffs and understands need for variety in food. Shows some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health. Plan opportunities, particularly after exercise, for children to talk about how their bodies feel. Find ways to involve children so that they are all able to be active in ways that 	<p>To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>To identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>To identify, name,</p>	<p>To notice that animals, including humans, have offspring which grow into adults</p> <p>To find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>To 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</p> <p>To identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>To describe the simple functions of the basic parts of the digestive system in humans</p> <p>To identify the different types of teeth in humans and their simple functions</p> <p>To construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p>To describe the changes as humans develop to old age</p> <p>(Covered through SRE)</p>	<p>To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>To describe the ways in which nutrients and water are transported within animals, including humans.</p>



	<p>interest them and match their health and ability.</p> <ul style="list-style-type: none"> • Acknowledge and encourage children’s efforts to manage their personal needs, and to use and return resources appropriately. • Promote health awareness by talking with children about exercise, its effect on their bodies and the positive contribution it can make to their health. • Be sensitive to varying family expectations and life patterns when encouraging thinking about health. • Discuss with children why they get hot and encourage them to think about the effects of the environment, such as whether opening a window helps everybody to be cooler. <p>ELG:</p> <ul style="list-style-type: none"> • Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. • They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently. <p>Understanding the world: 30-50</p> <ul style="list-style-type: none"> • Can talk about some of the things they have observed such as plants, animals, natural and found objects. • Talks about why things happen and how things work. • Developing an understanding of growth, decay and changes over time. • Shows care and concern for living things and the environment. <p>40-60</p> <ul style="list-style-type: none"> • Looks closely at similarities, differences, patterns and change. 	<p>draw and label the basic parts of the human body and say which part of the body is associated with each sense</p>					
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	<p>ELG:</p> <ul style="list-style-type: none"> They make observations of animals and plants and explain why some things occur, and talk about changes. 						
<p>Animals including Humans Vocabulary</p>	<p>Plant, Animal Exercise, healthy</p>	<p>five senses fish, reptiles, mammals, birds, amphibians herbivore, omnivore, carnivore, wings, beak, claw, names of human body parts.</p>	<p>Habitat, offspring, babies, young, reproduction, water, air, survival, mouth, tongue, teeth exercise, diet hygiene, clean, wash, healthy medicine drugs, nutrition growth, main food groups</p>	<p>skeleton, muscles skull, ribs, hips, protection, healthy carbohydrates, protein, vitamins minerals, dietary fibre, balanced diet movement, nutrient nutrition, fats, sugar, bread, rice, potato, pasta, meat, fish, egg, beans</p>	<p>omnivore herbivore carnivore Environment Food chain Producer Consumer Predator, prey</p> <p>mouth, tongue, teeth, oesophagus, stomach, small Intestine, large intestine, rectum, anus, canine, incisor, molar, saliva, root, enamel, gum,</p>	<p>foetus, embryo, womb, gestation, baby, toddler, teenager, young adult elderly, growth, development, puberty reproduction, sibling offspring, life cycle, period</p>	<p>Circulatory, heart, blood vessels, veins, arteries, oxygenated, deoxygenated, valve, exercise, respiration Glucose, starch trans and saturated fats, medicine, diet exercise, drugs lifestyle</p>
<p>Plants</p>	<p>Understanding the world:</p> <p>30-50</p> <ul style="list-style-type: none"> Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time. Shows care and concern for living things and the environment. <p>40-60</p>	<p>To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>To identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>To observe and describe how seeds and bulbs grow into mature plants</p> <p>To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>To explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how</p>			



	<p>Looks closely at similarities, differences, patterns and change. Examine change over time, for example, growing plants, and change that may be reversed, e.g. melting ice.</p> <p>ELG: They make observations of animals and plants and explain why some things occur, and talk about changes.</p>			<p>they vary from plant to plant</p> <p>To investigate the way in which water is transported within plants</p> <p>To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p>			
Plants Vocabulary	plant, flower, grass, tree, grow	<p>deciduous, evergreen trees, leaves, flowers, petals, fruit, roots, bulb, seed, trunk, branches, stem, blossom, fruit, berry</p> <p>Names of locally found wild plants/garden plants/flowering plants/trees/ fruits and vegetables</p>	<p>seeds, bulbs, water, light, growth, seedlings</p> <p>shoot, temperature, bud, germination, reproduction, nutrients, conditions</p> <p>damp/wet/dry hot/warm/cold/cool</p> <p>grow, growth, wither, limp, die</p> <p>dry/crispy soil</p>	<p>air, light, water, nutrients, soil, reproduction, transportation, dispersal, pollination, flower, transported, stamen, style, stigma, fertilizer, pollen, nectar</p> <p>stalk</p>			
Living things and their Habitats	<p>Understanding the world: 30-50</p> <p>Can talk about some of the things they have observed such as plants, animals, natural and found objects.</p>		<p>To explore and compare the differences between things that are living, dead, and things that have never been alive</p>		<p>To recognise that living things can be grouped in a variety of ways</p> <p>To explore and use classification keys</p>	<p>To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p>	<p>To describe how living things are classified into broad groups according to common observable</p>



	<p>Talks about why things happen and how things work.</p> <p>Developing an understanding of growth, decay and changes over time.</p> <p>Shows care and concern for living things and the environment.</p> <p>ELG: They make observations of animals and plants and explain why some things occur, and talk about changes.</p>		<p>To 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> <p>To identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>To 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.</p>		<p>to help group, identify and name a variety of living things in their local and wider environment</p> <p>To recognise that environments can change and that this can sometimes pose dangers to living things</p>	<p>To describe the life process of reproduction in some plants and animals.</p>	<p>characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <p>To give reasons for classifying plants and animals based on specific characteristics.</p>
<p>Living Things and their Habitats Vocabulary</p>	<p>Plant, Animal, Home</p>		<p>Depend, grow move, food feed, Shelter dark/light alive, dead non-living food chain</p> <p>offspring/ young/babies</p> <p>Local habitats: Pond, woodland</p>		<p>vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, snails, slugs, worms, spiders, insects, environment, habitats</p>	<p>Mammal, Reproduction, Insect, Amphibian, Bird, Offspring</p>	<p>Classification, Vertebrates, Invertebrates, Microorganisms, Amphibians, Reptiles, Mammals, Insects</p>



			<p>Meadow</p> <p>Microhabitats: under log, on stony path, under bushes</p> <p>Damp/wet/dry Hot/warm/cool/ cold suitable</p>				
<p>Rocks/Evolution and Inheritance</p>	<p>Understanding the world</p> <p>30-50</p> <ul style="list-style-type: none"> • Can talk about some of the things they have observed such as plants, animals, natural and found objects. • Developing an understanding of growth, decay and changes over time. <p>40-60</p> <ul style="list-style-type: none"> • Looks closely at similarities, differences, patterns and change. • Examine change over time, for example, growing plants, and change that may be reversed, e.g. melting ice. <p>ELG:</p> <ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. • They talk about the features of their own immediate environment and how environments might vary from one another. 			<p>Compare and group together different kinds of rocks based on appearance and simple physical properties. Describe in simple terms how fossils are formed when things have lived and then are trapped within rock.</p> <p>Compare and group together different kinds of rocks based on appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things have lived and then are trapped within rock.</p>		<p>To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	



<p>Rocks/ Evolution and Inheritance Vocabulary</p>	<p>Hard, Smooth, Rough</p>			<p>Organic, permeable, Impermeable, fossils, sedimentary, grains, crystals, hard/soft, texture, rocks, stone, pebble, boulder limestone, granite chalk, slate, marble ,sandstone slate, matter property formation ,soil ,sandy</p>		<p>Suited, offspring Adaptation, characteristics, Breads, environments Genes, variation, inheritance, evolution Palaeontologists, Survival, species classification</p>	
<p>Materials / States of matter</p>	<p>Understanding the world 30-50</p> <ul style="list-style-type: none"> • Can talk about some of the things they have observed such as plants, animals, natural and found objects. • Talks about why things happen and how things work. • Developing an understanding of growth, decay and changes over time. <p>40-60</p> <ul style="list-style-type: none"> • Looks closely at similarities, differences, patterns and change. • Examine change over time, for example, growing plants, and change that may be reversed, e.g. melting ice. 	<p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock.</p> <p>To describe the simple physical properties of a variety of everyday materials</p>	<p>Compare and group together a variety of everyday materials based on their simple properties.</p> <p>Identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending,</p>		<p>To compare and group materials together, according to whether they are solids, liquids or gases</p> <p>To 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)</p> <p>To identify the part played by evaporation and condensation in the</p>	<p>To 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</p> <p>To know that some materials will dissolve in liquid to form a solution, and</p>	



	<p>ELG: Children know about similarities and differences in relation to places, objects, materials and living things.</p>		<p>twisting and stretching.</p>		<p>water cycle and associate the rate of evaporation with temperature.</p>	<p>describe how to recover a substance from a solution</p> <p>To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>To demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>To explain that some changes result in the formation of new materials, and that this kind of change is not</p>	
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						usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	
Materials Vocabulary	Sand, Playdough, Paint, Mix, Soft, Hard Soft Hot, cold, water	Object, material, wood, plastic, water, glass, paper, metal, rock, brick, fabrics, elastic, foil, Card/cardboard, rubber, wool, clay, hard, soft, bendy, stretchy, stiff, bendy, floppy, waterproof, absorbent, rough, smooth breaks/tears, shiny, dull see through not see through properties	Suitable, unsuitable, Useful, object, material Property, waterproof, absorbent, opaque, transparent, translucent, wood, plastic, brick, fabric, elastic, foil, glass. metal, water, cardboard, shape, changed, stretchy, stiff, shiny, dull, squash, twisty, push, pull, twist, bend, pinch, poke, roll, squeeze		Condensation, evaporation, precipitation, weight, states of matter, solid, liquid, gas Powder Granular Crystals Ice water Steam Water vapour	Hardness, solubility, transparency, conductivity, magnetic, filter, evaporation, dissolving, mixing, particle, melting, dissolving, sieving, reversible/irreversible, filtering, sieving, mix/mixture	
Forces	Understanding the world 30-50 <ul style="list-style-type: none"> Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. 40-60 <ul style="list-style-type: none"> Looks closely at similarities, differences, patterns and change. ELG:			To compare how things move on different surfaces To notice that some forces need contact between two objects, but magnetic forces can act at a distance To observe how magnets attract or		To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object To identify the effects of air	



	<p>Children know about similarities and differences in relation to objects and materials.</p>			<p>repel each other and attract some materials and not others</p> <p>To 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</p> <p>To describe magnets as having two poles</p> <p>To predict whether two magnets will attract or repel each other, depending on which poles are facing</p>		<p>resistance, water resistance and friction, that act between moving surfaces</p> <p>To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	
<p>Forces Vocabulary</p>	<p>Stop, Start Air resistance,</p>			<p>Force, magnets (bar, ring horseshoe) Attract, repel, strength magnetic, surface, metal, iron, steel, poles, North, South, push Pull, contact, non-contact, distance, direct, properties</p>		<p>Water resistance, mechanisms, levers, pulleys, gears, force, transfers, gravity, resistance, air resistance, earth, friction, moving surfaces</p>	



<p>Electricity</p>	<p>Understanding the world 30-50</p> <ul style="list-style-type: none"> • Can talk about some of the things they have observed such as plants, animals, natural and found objects. • Talks about why things happen and how things work. <p>40-60</p> <ul style="list-style-type: none"> • Looks closely at similarities, differences, patterns and change. <p>ELG: Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.</p>				<p>To identify common appliances that run on electricity</p> <p>To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>To 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</p> <p>To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>To recognise some common conductors and insulators, and associate metals with being good conductors.</p>		<p>To know the number of cells and voltage in the circuit and how it is associated with the brightness of a lamp/bulb or the volume of a buzzer.</p> <p>To know how the use of switches affects a circuit</p> <p>To know the symbols in an electrical circuit diagram</p>
<p>Electricity Vocabulary</p>	<p>Bright, Dark</p>				<p>cells, wires, bulbs, lamps, switches, Buzzers, Battery,</p>		<p>Wire, crocodile clip. Buzzer, motor, insulator,</p>



					Circuit, Series, conductors, insulators, electricity, component, cell, battery, lamp, switch, mains, positive, negative, metal, open closed, appliance, device		conductor, bulb, light/dim, switch, electricity, appliance, device, circuit, diagram, transformer, filament, current, resistance, resistor, symbol, components, voltage, amp, cell, Battery, positive, negative, terminal, Connect, connection
Light/Sound/Earth and space	<p>Understanding the world</p> <p>30-50</p> <ul style="list-style-type: none"> Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. <p>40-40</p> <ul style="list-style-type: none"> Looks closely at similarities, differences, patterns and change. <p>ELG:</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. 	<p>Seasonal changes</p> <p>To observe changes across the four seasons</p> <p>To observe and describe weather associated with the seasons and how day length varies.</p>		<p>Light</p> <p>To recognise that they need light in order to see things and that dark is the absence of light</p> <p>To notice that light is reflected from surfaces</p> <p>To recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>To recognise that shadows are formed when the light</p>	<p>Sound</p> <p>To identify how sounds are made, associating some of them with something vibrating</p> <p>To recognise that vibrations from sounds travel through a medium to the ear</p> <p>To find patterns between the pitch of a sound and features of the object that produced it</p> <p>To find patterns between the volume of a sound and the strength of the</p>	<p>Earth and space</p> <p>To describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>To describe the movement of the Moon relative to the Earth</p> <p>To describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>To use the idea of the Earth's rotation to explain day and night and the apparent</p>	<p>Light</p> <p>To recognise that light appears to travel in straight lines</p> <p>To 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</p> <p>To 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</p> <p>To use the idea that</p>



				<p>from a light source is blocked by an opaque object</p> <p>To find patterns in the way that the size of shadows change.</p>	<p>vibrations that produced it</p> <p>To recognise that sounds get fainter as the distance from the sound source increases.</p>	<p>movement of the sun across the sky.</p>	<p>light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>
Light Vocabulary	Bright, dark , weather, rain, snow, cloud, sunshine	<p>Summer, spring, autumn, winter, sun, day, moon, night, light, dark</p> <p>Weather names</p> <p>Sunburn, frostbite, temperature, Shadows, rainbow thunder lightening</p>		<p>Light, dark</p> <p>Darkness, shadow, reflect, light source, solid, block, mirror, torch, sun, bulb, reflective surface, transparent, translucent, opaque, absence of light, bright, dull , direct, direction</p>	<p>Pitch, vibrations, medium, volume, conduct, vacuum, waves, travel, pitch, tune, high/low, loud/quiet, faint, frequency, vibrate, insulate, particles, percussion, strings, brass, woodwind</p>	<p>Sun / Moon, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune Pluto, 'dwarf' planet, orbit, planets, spherical/ sphere, rotate, axis, asteroid, eclipse, satellite, lunar, equator, hemisphere, celestial body</p> <p>Night and day, heliocentric model, shadow clocks, sundials, astronomical clocks</p>	<p>Light, Light source, reflect, reflective, mirror, direction, refraction ,light spectrum, beam, lens, iris, retina, shadow, block, absorb, direct/direction, transparent, opaque, translucent</p>

Working Scientifically			
	EYFS	KS1	UKS2



<p>Asking Questions</p>	<p>40-60</p> <ul style="list-style-type: none"> Adults pose carefully framed open-ended questions, such as “How can we...?” or “What would happen if...?”. 	<p>Ask simple questions and recognise that they can be answered in different ways.</p>	<p>Ask relevant questions and use different types of scientific enquiries to answer them</p> <p>Set up simple practical enquiries, comparative and fair tests.</p>	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>
<p>Measuring and Recording</p>	<p>30-50</p> <p>Can talk about some of the things they have observed</p> <ul style="list-style-type: none"> Adults teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs. <p>40-60</p> <ul style="list-style-type: none"> Looks closely at similarities, differences, patterns and change. Examine change over time Use correct terms 	<p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Gather and record data to help in answering questions.</p> <p>Identify and classify</p>	<p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units.</p> <p>use a range of equipment, including thermometers and data loggers</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p>	<p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>
<p>Conclusions</p>	<p>30-50</p> <p>Observes the effects of activity on their bodies.</p> <p>30-50</p> <p>Talks about why things happen and how things work.</p> <p>40-60</p>	<p>Use their observations and ideas to suggest answers to questions.</p>	<p>Identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>	<p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Report and present 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</p>



	<p>Plan opportunities, particularly after exercise, for children to talk about how their bodies feel.</p> <p>ELG: Children know about similarities and differences in relation to places, objects, materials and living things.</p> <p>They make observations of animals and plants and explain why some things occur and talk about changes.</p>		<p>Use straightforward scientific evidence to answer questions or to support their findings.</p>	
<p>Evaluating</p>			<p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>	<p>Use test results to make predictions to set up further comparative and fair tests</p>