Core Subject: Science Coverage Cycle A:

Upper KS2 (Year 5/6)

Key Components of knowledge						
	Living Things and their habitats *Illustrating Life cycles*	Animals including Humans *The Human Species*	Electricity *Electric Art*	Properties of Materials *Materials Consultants*	Light *Theatre Lighting Technicians*	Revision Block A *Medical Manoeuvres*
Key Vocab	Puberty, gestation, classification, precision, reproduction, teenager, obese, toddler, embryo	Blood vessels, drugs, atriums, William Harvey, cardiovascular, ultrasound, cardiologists, capillaries, pulse, ventricles	Conductor, insulator, socket, series circuits, cells, colts, generator, turbine, fuses, Thomas Edison	Solubility, conductivity, transparent, thermal evaporation, dissolve, bicarbonate of soda, thermal, filtering, melting, separate	Light wave, light source, concave, convex, filters, lens, retina, cornea, iris, pupil	
National Curriculum	**Living things and their habitats (YEAR 5)** →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	**Animals including Humans (YEAR 6)** →Describe the changes as humans develop to old age (YEAR 5)** →Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood →Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function →describe the ways in which nutrients and water are transported within animals, including humans	**Electricity (YEAR 6)** →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	**Properties and changes of Materials (YEAR 5)** →Compare and group together everyday materials on the basis of their properties, including their hardness, transparency, and conductivity (electrical and thermal) →Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	**Light (YEAR 6)** →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	(All of the coverage to date)
Working Scientifically	→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	→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	→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	→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	→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	→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

Core Subject: Science Coverage Cycle B:

Upper KS2 (Year 5/6)

Key Components of knowledge						
	Properties of Materials *Special effects materials*	Forces *Welcome to the Force-Land*	Evolution and Inheritance *Survival of the fittest*	Earth and Space *Space!*	Living things and their habitats *The Classification Code*	Revision Block B Sensational Science
Key Vocab	Solubility, conductivity, transparent, thermal evaporation, dissolve, bicarbonate of soda, thermal, filtering, melting, separate	Friction, gravity, air resistance, water resistance, levers, pulleys, gears, parachute, Galileo, Newton	Off-spring, adaptation, evolution, inheritance, palaeontologist, Charles Darwin, genes, chromosomes, syndrome, genotype	Orbit, solar system, astronomical, planet, rotation, spherical, crescent moon, gibbous moon, eclipse, lunar	Micro-organism, vertebrates, invertebrates, species, fungi, bacteria, Protista, algae, Carl Linnaeus	
National Curriculum	**Properties and changes of Materials (YEAR 5)** →Compare and group together everyday materials on the basis of their properties, including their solubility 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 →Demonstrate that dissolving, mixing 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 and the action of acid on bicarbonate of soda	**Forces (YEAR 5)** →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	**Evaluation and inheritance (YEAR 6)** →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	**Earth and Space (YEAR 5)** →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	**Living things and their habitats (YEAR 6)** →Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals →Give reasons for classifying plants and animals based on specific characteristics	(All of the coverage to date)
Working Scientifically	→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	→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	→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	→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	→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	→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

Cycle A:

Living Things and Their Habitats

Illustrating Life Cycles

1. Flowering plant reproduction
2. Ways that plants reproduce asexually
3. Life Cycles: insect and amphibian
4. Mammalian and bird life cycles
5. Life cycles from around the world
6. Becoming natural scientists

Suggested for Autumn 1

Animals Including Humans

The Human Species

1. Development: from foetus to child
2. Growth: adolescence and puberty
3. Growth: adults, old age and timelines
4. A healthy body
5. Blood and the heart
6. Transport systems

Suggested for Spring 1

Electricity

Electric Art

1. Electrical art challenge
2. Playing with electricity - circuits
3. Designs, ideas & drawing circuit diagrams
4. Taking a dimmer approach
5. Electric workshop action
6. Electrical art installation

Suggested for Summer 1

Properties of Materials

Materials Consultants

1. Recycling challenge
2. Hot porridge and frozen yogurt
3. Packaging problems
4. Café Challenge
5. Toy shop challenge (electrical conductivity)
6. Snoring challenge (soundproofing)

Suggested for Autumn 2

Light

Theatre Lighting Technicians

1. Shadow puppets: angles, shape, definition
2. Shadow puppets: colour and texture
3. Lighting effects: colour
4. Lighting effects: reflecting light
5. Lighting effects: illusions with mirrors
6. Theatrical interviews

Suggested for Spring 2

Revision Block A

Medical Manoeuvres

1. Mosquitoes and medicine
2. Medical materials
3. Welcome to the world!
4. The well-oiled human machine
5. Illumination station
6. Medical circuits

Suggested for Summer 2

Cycle B:

Properties of Materials

Special Effects Materials

1. Mud, glorious mud
2. Sweet soluble solutions
3. Creating explosive special effects
4. Ageing props (oxidation and burning)
5. Prosthetic wounds and fake blood
6. The future of special effects

Suggested for Autumn 1

Forces

Welcome to Force-Land

1. Bungee-jump: gravity and balanced forces
2. Rolling car ride: friction
3. Parachute ride: air resistance
4. Canyon ride: water resistance
5. Lift an 'Elephant' ride: levers and pulleys
6. Ferris wheel: gears

Suggested for Spring 1

Evolution and Inheritance

Survival of the Fittest

1. Play inheritance detectives
2. Mutations, adaptations and survival
3. Extreme survival and adaptations
4. Research the evolutionary pioneers!
5. Fossils and evolutionary trees
6. The traditional tale of the giraffe's neck

Suggested for Summer 1

Earth and Space

Space!

1. Heliocentricity vs geocentricity
2. Modelling the solar system
3. Night and day and the Shadow Ally
4. A moon month
5. Seasonal sensations
6. Entering the inquisition

Suggested for Autumn 2

Living Things and Their Habitats

The Classification Code

1. Meeting Linnaeus
2. Spot the odd one out
3. Sweet classification system
4. Back yard classification
5. Unusual creatures
6. New creature features: classification

Suggested for Spring 2

Revision Block B

Sensational Science

1. Mind-blowing mixtures
2. Sensational space behaviour
3. Fickle forces
4. Crazy creature classifications
5. Extraordinary evolution antics
6. Scientific disputes

Suggested for Summer 2