HOLLINS GRUNDY PRIMARY SCHOOL

Happiness, Health and Respect for Confident, Creative Learners

Assessment Criteria In Science

	MONTH BANDS Understanding of the World: The World		EARLY LEARNING GOAL
RECEPTION	30-50	• Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • 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.	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. They make observations of animals and plants and explain why some things occur, and talk about changes.
	40-60	• • Looks closely at similarities, differences, patterns and change.	Exceeding Children know that the environment and living things are influenced by human activity. They can describe some actions which people in their own community do that help to maintain the area they live in. They know the properties of some materials and can suggest some of the purposes they are used for. They are familiar with basic scientific concepts such as floating, sinking, experimentation.

		MONTH BANDS Understanding the World: Technology	EARLY LEARNING GOAL
RECEPTION	30-50	• Knows how to operate simple equipment, e.g. turns on CD player and uses remote control. • Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. • Knows that information can be retrieved from computers	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.
	40-60	• Completes a simple program on a computer. • • Uses ICT hardware to interact with age-appropriate computer software.	Exceeding Children find out about and use a range of everyday technology. They select appropriate applications that support an identified need – for example in deciding how best to make a record of a special

			event in their lives, such as a journey on a steam train.

Year 1 - Science

Unit	NC Animals including humans
How could you become an animal expert?	• Identify and name a variety of common animals that are carnivores, herbivores and omnivores. • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (This may include animals kept as pets). • 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 (head, neck, arms, elbows, legs, knees, face, ears eyes, hair, mouth and teeth) and say which part of the human body is associated with each sense. • Compare and contrast animals first hand using lenses or through pictures and videos. • Identify and group animals i.e by what they eat, common physical features, animal family/classification)

Unit	NC Seasonal Changes
How could you become a weather reporter?	• Observe and make tables and charts about weather. • Observe and describe the changes across the four seasons. • Know the 4 seasons in order. • Observe and describe weather associated with the seasons. • Understand how and why day length varies over the year.

Unit	NC Everyday materials
Which materials should the Three Little Pigs have used to build their house?	• 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 simple properties of a variety of everyday materials (hard/soft, stretchy/stiff, shiny/dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent, not absorbent, opaque/transparent. • Compare and group together a wide variety of everyday materials on the basis of their simple physical properties, wooden objects, plastic objects, glass objects, metal object including foil, rock, brick, fabrics, elastic, paper. • Explain what material are best for different given purposes through testing and then developing explanations.

	NC Plants
Which birds and plants would Little Red Riding Hood find in Hollins Vale Nature Reserve?	• Identify and name a variety of common wild and garden plants including deciduous and evergreen trees. • Identify and describe the basic structure of flowering plants, including trees. • Identify and name a variety of plants in their habitats. • Keep an observation log to explain how a plant grows.

NC Working Scientifically

- **Ask simple scientific questions and recognise they can be answered in different ways (All units)**
- **Observe closely using simple equipment (Plants and Animals)**
- **Perform simple tests (Materials)**
- **Identify and classify (Plants, Animals, Materials)**
- **Use observations and ideas to suggest answers to questions (All units)**
- **Gather and record data to help answer questions (Plants, Animals, Seasonal Changes)**
- Compare objects (Materials)
- Compare living things (Animals, Plants)
- Sort and group objects (Materials)
- Sort and group living things (Animals, Plants)
- Observe changes over time (Seasonal Changes, Plants)
- Notice patterns and relationships (Seasonal Changes)
- Use secondary resources (Plants, Animals, Seasonal Changes)
- Ask people questions (Animals, Seasonal Changes)
- Use simple measurements and equipment (hand lenses, egg timers) (Plants, Animals)
- Use simple scientific language (All Units)
- Record and communicate findings in a range of ways.(All Units)

Step	b	b+	w	w+	s	s+
	20%	40%	60%	80%	90%	100%
No. of statements required	**0 - 6**	**7 - 13**	**14 - 17**	**18 - 21**	**22 - 32**	**37**
					Must include all blue statements (Statutory Requirements)	

Black statements non-statutory guidance

Year 2 - Science

Unit	NC Materials
What materials are in our school?	• Identify and compare the suitability of a variety of every day materials including wood, metal, plastic glass, brick rock, paper and cardboard for particular purposes. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. • Understand how the some materials can have different uses. • Understand that in some cases the same object can be made from different materials. • I can find out about people who have developed useful materials i.e John Dunlop/Charles Macintosh or John McAdam • Compare how materials used in school may have different uses in the grounds/local area.

UNIT	NC Animals including humans
How could you be the next sporting super star?	• Find out about and describe the basic needs of animals, including humans, for survival (water, food, air) • Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene. • Plan a healthy menu, exercise plan and hygiene routine. • Create a survey to collect data about fruit and vegetables.

Unit	NC Animals including humans
What happens as animals grow?	• Understand that animals including humans, have offspring which grow into adults. • Create and explain life cycles (egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog, lamb sheep; baby, toddler, child, teenager, adult) • Observe through video or real life how animals grow and make observations / measurements.

Unit	NC Plants
How can we grow our own plants?	• 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. • Make observations and recordings to show how plants grow from seeds and bulbs and what similar plants look like at different stages of growth. • Compare plants which have had different levels of light and amounts of water.

Unit	NC Living Things and their habitats.
Why can't a woodlouse live at the seashore?	• 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. • 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 name different sources of food. • Compare animals in familiar habitats and unfamiliar habitats and why they live there (local habitat and micro habitats e.g stones, logs, leaf litter woodland and unfamiliar habitats eg seashore, ocean, rainforest.)

NC Working Scientifically

- **Ask simple scientific questions and recognise they can be answered in different ways (All units)**
- **Observe closely using simple equipment (All units)**
- **Perform simple tests (Materials, plants)**
- **Identify and classify (All units)**
- **Use observations and ideas to suggest answers to questions (All units)**
- **Gather and record data to help answer questions (All units)**
- Compare objects (Materials)
- Compare living things (Animals, Plants, Habitats)
- Sort and group objects (Materials, Habitats)
- Sort and group living things (Animals, Plants, Habitats)
- Observe changes over time (Animals)
- Notice patterns and relationships (Animals, habitats, materials)
- Use secondary resources (All units)
- Use simple measurements and equipment (hand lenses, egg timers) (animals, habitats)
- Use simple scientific language (All Units)
- Record and communicate findings in a range of ways.(All Units)

Step	b	b+	w	w+	s	s+
	20%	40%	60%	80%	90%	100%
No. of statements required	**0-6**	**7-11**	**12-14**	**14-21**	**22-30**	**39**
					Must include all blue statements (Statutory Requirements)	

Black Statements non-statutory guidance

Year 3 - Science

unit	Forces and magnets.
Are you attractive enough?	• Can you compare how things move on different surfaces? • Understand 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 • Understand magnets as having two poles • Predict whether two magnets will attract or repel each other, depending on which poles are facing. • Observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). • Explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe). • Investigate out how far things move on different surfaces, predict, gather and record data to find answers their questions; • Explore the strengths of different magnets and finding a fair way to compare them; • Sort materials into those that are magnetic and those that are not; • Look for patterns in the way that 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

	NC Animals including humans.
How can Usain Bolt move so quickly?	• Identify animals, including humans, need the right types of nutrition, and 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. • Record findings using simple scientific language drawings, labelled diagrams and bar charts. • Identify the main body parts associated with the skeleton and muscles. • Identify and group animals with and without skeletons and observe and comparing their movement • Compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. • Research different food groups and how they keep us healthy and design meals based on what they find out.

unit	Rocks.
What do rocks tell us about the way the Earth was formed?	• 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. • Explore different kinds of rocks and soils, including those in the local environment. • Observe rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time • Use a hand lens or microscope to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. • Research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. • 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. • Answer questions about the way soils are formed.

unit	NC Plants.
How did that blossom become an apple?	• Identify and describe the functions of different parts of flowering plants (roots, stem/trunk, leaves and flowers). • Explore the requirement 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 and nutrients are transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, reproduction, seed formation and seed dispersal. • Identify the structure and function of the parts of a plant • Know the role of the leaves roots and stem in nutrition and support. (They don't need to know the details of photosynthesis) • Pupils to work scientifically by: looking for patterns in the structure of fruits that relate to how the seeds are dispersed. • Observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.

unit	NC Light.
How far can you throw your shadow?	• 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 the size of shadows change. • Explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. • Understand why it is important to protect their eyes from bright lights. • Measure, shadows, and find out how they are formed and what might cause the shadows to change. • Work scientifically by: looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes

NC Working Scientifically

- Ask relevant questions and using different types of scientific enquiries to answer them (All units)
- Set up simple practical enquiries, comparative and fair tests (All units)
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment (All units)
- Gather, record classify and present data in a variety of ways to help in answering questions (All Units)
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables(All units)
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (All Units)
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (All Units)
- Identifying differences, similarities or changes related to simple scientific ideas and processes (All Units)
- Using straightforward scientific evidence to answer questions or to support their findings. (All units)

Step	b	b+	w	w+	s	s+
	20%	40%	60%	80%	90%	100%
No. of statements required	0-13	14-22	23-33	34-44	45-54	55

Black statements Non-statutory guidance

Must include all blue statements (Statutory requirements)

Year 4 - Science

Unit	NC Animals, including humans.
What happens to the food we eat?	• 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. • Know the mouth, tongue, teeth, oesophagus, stomach and small and large intestine and their function. • Compare the teeth of carnivores and herbivores, and suggesting reasons for differences; • Know what damages teeth and how to look after them. • Make models of the digestive system and explain how it works.

Unit	Animals, including humans.
What are solids, liquids and gases?	• Compare and group materials together, according to whether they are solids, liquids or gases • Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. • 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. . • 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. Research the temperature at which materials change state, for example, when iron melts. • Observe and record evaporation over a period of time, for example, a puddle in the playground.

Unit	NC Electricity.
How could we cope without electricity for one day?	• 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 • 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 circuits as a pictorial representation, not using conventional circuit symbols at this stage; these will be introduced in year 6. • Pupils should be taught about precautions for working safely with electricity. • Work scientifically by: observing patterns, for example, , 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.

Unit	NC Sound.
Why is the sound made by 'One Direction' enjoyed by so many?	• 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 • Pupils should explore and identify the way sound is made through vibration in a range of different musical instruments from around the world; and 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 elastic bands of different thicknesses. • Make earmuffs from a variety of different materials to investigate which provides the best insulation against sound. • Make and play their own instruments by using what they have found out about pitch and volume.

Unit	NC Living things and their habitats.
Which wild animals and plants thrive in your locality?	• 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. • Use the local environment to raise and answer questions that help them to identify and study plants and animals in their habitat. • Explore possible ways of grouping a wide selection of living things that include animals and flowering plants and non-flowering plants. • Put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. • Group plants into categories such as flowering plants (including grasses) and non-flowering plants, such as ferns and mosses. • Explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, , and the negative effects of litter. • Work scientifically by: using and making simple guides or keys to explore and identify local plants and animals;

Working Scientifically
• Ask relevant questions and using different types of scientific enquiries to answer them (All units) • Set up simple practical enquiries, comparative and fair tests (All units) • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment (All units) • Gather, record, classify and present data in a variety of ways to help in answering questions (All Units) • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables(All units) • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (All Units) • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (All Units) • Identifying differences, similarities or changes related to simple scientific ideas and processes (All Units) • Using straightforward scientific evidence to answer questions or to support their findings. (All units)

Step	b	b+	w	w+	s	s+
	20%	40%	60%	80%	90%	100%
No. of statements required	0 - 10	11-20	21-30	31-40	40-49	50
Black non-statutory Requirements					Must include all blue statements (Statutory requirements)	

Year 5 - Science

Unit	NC Living things in their habitats.
Do all animals and plants start life as an egg?	• 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. • Observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. • Find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. • Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals. • Work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. • Observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.

Unit	NC Living things in their habitats.
How different will you be when you are as old as your grandparents?	• Describe the changes as humans develop to old age • Draw a timeline to indicate stages in the growth and development of humans. • Learn about the changes experienced in puberty. (Y5 girls in Y5 and boys in Y6) • 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

Unit	NC Properties and changes of materials.
Could you be the next CSI investigator?	• 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 • 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 sod • Explore reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes. • 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, for example, Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton.

Unit	NC Earth & Space
Will we ever send another human to the moon?	• 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. • Find out about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus. • Work scientifically by: comparing the time of day at different places on the Earth through internet links. • Work scientifically by creating simple models of the solar system • Find out why some people think that structures such as Stonehenge might have been used as astronomical clocks.

Unit	NC Forces
Can you feel the force?	• 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 • Pupils should explore falling objects and raise questions about the effects of air resistance. • Explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall. • Explore the effects of friction on movement and find out how it slows or stops moving objects, for example, by observing the effects of a brake on a bicycle wheel. • Explore the effects of levers, pulleys and simple machines on movement. • Find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation. • Work scientifically by designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. • Explore resistance in water by making and testing boats of different shapes.

NC Working Scientifically
• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (All Units) • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (All Units) • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (All Units) • Use test results to make predictions to set up further comparative and fair tests (All units except space) • Report 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 (All Units) • Identify scientific evidence that has been used to support or refute ideas or arguments. (All Units)

Step	B	b+	w	w+	s	s+
	20%	40%	60%	80%	90%	100%
No. of statements required	0 – 9	10 - 18	19 - 25	26 - 33	34 - 41	44

Black Statements Non-statutory guidance

Must include all blue statements (Statutory Requirements)

Year 6 - Science

Unit	NC Living things in their habitats.
Could Spiderman really exist?	• 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. • **Know that broad groupings, such as micro-organisms, plants and animals can be subdivided.** • **Classify animals into commonly found invertebrates (such as insects, spiders (arachnids) , snails (molluscs) , worms (annelids) and vertebrates (fish, amphibians, reptiles, birds and mammals).** • **Discuss reasons why living things are placed in one group and not another.** • **Work scientifically by: using classification systems and keys to identify some animals and plants in the immediate environment.**

Unit	NC Animals Including Humans
What would a journey through your body be like?	• 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 • Explore and answer questions that help them to understand how the circulatory system enables the body to function. • Pupils should 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. (Diet to be covered in D and T unit) • Work scientifically by: exploring the work of scientists and scientific research.

Unit	NC Evolution & inheritance.
Have we always looked like this?	• 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. • Understand that characteristics are passed from parents to their offspring • Appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the development of insulating fur on the arctic fox. • Pupils might find out about the work of palaeontologists such Charles Darwin • Work scientifically by: observing and raising animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels

Unit	NC Electricity
Why is a electrical power source so important?	• 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. • Construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. • 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.

Unit	NC Light.
How can you light up your life?	• 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. • They should 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

NC Working Scientifically
• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (All Units except evolution) • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (All Units except evolution) • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (All Units) • Use test results to make predictions to set up further comparative and fair tests (All units except evolution) • Report 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 (All Units) • Identify scientific evidence that has been used to support or refute ideas or arguments. (All Units)

Step	b	b+	w	w+	s	s+
	20%	40%	60%	80%	90%	100%
No. of statements required	**0 - 6**	**7 - 12**	**13 - 24**	**25 - 31**	**32 - 35**	**35**

Black statements non statutory requirements

Must include all blue statements (Statutory Requirements)