Key Stage Two – Science knowledge and skills progression		
Year Three		
Unit	**Skills**	**Skills Success Criteria**
1. Rocks and soils	• **asking relevant questions** and using different types of **scientific enquiries** to answer them • setting up **simple practical enquiries**, **comparative** and **fair tests**; • making **systematic** and **careful observations** and, where appropriate, taking accurate **measurements** using **standard units**, using a range of **equipment**, including **thermometers** and **data loggers**; • **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**;	• I can compare and group together different kinds of rocks on the basis of their appearance. • I can compare and group together different kinds of rocks on the basis of their physical properties. • I can explain how some rocks are formed. • I can explain how the Earth is made up of different layers of rocks and soils • I can describe how fossils are formed when things that have lived are trapped within rock.
2. Plants	• **asking relevant questions** and using different types of **scientific enquiries** to answer them • setting up **simple practical enquiries**, **comparative** and **fair tests**; • making **systematic** and **careful observations** and, where appropriate, taking accurate **measurements** using **standard units**, using a range of	• I can explore the requirements of plants for life and growth. • I can identify, locate and describe the function of different parts of flowering plants. • I can identify, locate and describe the function of the roots in plants. • I can investigate the way in which water is transported within plants.

	equipment, including **thermometers** and **data loggers**;	• I can explore the part that flowers play in the life cycle of flowering plants, including pollination. • I can explore the part that flowers play in the life cycle of flowering plants, including seed formation and seed dispersal.
3. Animals including humans	• **asking relevant questions** and using different types of **scientific enquiries** to answer them • setting up **simple practical enquiries**, **comparative** and **fair tests**; • making **systematic** and **careful observations** and, where appropriate, taking accurate **measurements** using **standard units**, using a range of **equipment**, including **thermometers** and **data loggers**; • **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;	• I can identify that humans have bones for support, protection and movement. • I can identify that some other animals have bones for support, protection and movement. • I understand that animals, including humans, need the right type of nutrition.
4. Forces and magnets	• **asking relevant questions** and using different types of **scientific enquiries** to answer them • setting up **simple practical enquiries**, **comparative** and **fair tests**; • making **systematic** and **careful observations** and, where appropriate, taking accurate **measurements** using **standard units**, using a range of **equipment**, including **thermometers** and **data loggers**;	• I can compare how different things move. • I can compare how objects move on different surfaces • I can explore how magnetic forces act at a distance. • I can compare and group various everyday materials based on whether they are attracted to a magnet. • I can predict whether two magnets will attract or repel each other, depending on which poles are facing.

	• **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.	• I can record my findings using simple scientific vocabulary.
5. Light	• **asking relevant questions** and using different types of **scientific enquiries** to answer them • setting up **simple practical enquiries**, **comparative** and **fair tests**; • making **systematic** and **careful observations** and, where appropriate, taking accurate **measurements** using **standard units**, using a range of **equipment**, including **thermometers** and **data loggers**; • **gathering**, **recording**, **classifying** and **presenting data** in a variety of ways to help in answering questions; • **recording findings** using simple **scientific language**, **drawings**, **labelled diagrams**, **keys**, **bar charts**, and **tables**;	• I can recognise that there needs to be light in order to see things and that darkness is the absence of light • I can notice that light is reflected from surfaces. • I can recognise that light from the Sun can be dangerous and that there are ways to protect your eyes and skin from the Sun. • I can recognise that shadows are formed when light from a light source is blocked by an opaque object. • I know that shadows take on the shape of the opaque object. • I can predict where a shadow will form in relation to an opaque object and a light source. • I can find patterns in the way that the length of shadows change.

	• 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.	
Year 4		
1. Living things and their habitats	• 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;	• I can recognise that living things can be grouped in a variety of ways. • I can explore and use classification keys to help group, identify and name a variety of living things in my local environment. • I can recognise that environments can change and that this can sometimes pose dangers to living things.
2. States of matter	• 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**;	• I can identify solids, liquids and gases. • I can take accurate measurements using thermometers. • I can observe that some materials change state when they are heated or cooled. • I can identify the part played by evaporation and condensation in the water cycle.

	• **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.	• I can associate the rate of evaporation with temperature.
3. Sound	• **asking relevant questions** and using different types of **scientific enquiries** to answer them • setting up **simple practical enquiries**, **comparative** and **fair tests**; • making **systematic** and **careful observations** and, where appropriate, taking accurate **measurements** using **standard units**, using a range of **equipment**, including **thermometers** and **data loggers**; • **gathering**, **recording**, **classifying** and **presenting data** in a variety of ways to help in answering questions;	• I can identify how sounds are made, associating some of them with something vibrating. • I can recognise that vibrations from sounds travel through a medium to the ear. • I can find patterns between the pitch of a sound and features of the object that produced it. • I can find patterns between the volume of a sound and the strength of the vibrations.

	• **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.	
4. Electricity	• **asking relevant questions** and using different types of **scientific enquiries** to answer them • setting up **simple practical enquiries**, **comparative** and **fair tests**; • making **systematic** and **careful observations** and, where appropriate, taking accurate **measurements** using **standard units**, using a range of **equipment**, including **thermometers** and **data loggers**; • **gathering**, **recording**, **classifying** and **presenting data** in a variety of ways to help in answering questions; • **recording findings** using simple **scientific language**, **drawings**, **labelled diagrams**, **keys**, **bar charts**, and **tables**; • using results to **draw** simple **conclusions**, make **predictions** for new values, **suggest improvements** and raise further **questions**;	• I can identify common appliances that use electricity. I can construct a simple circuit and name the parts of the circuit. • I can identify if a bulb will light up in a circuit. • I can recognise common conductors and insulators. • I can investigate switches

	• using straightforward **scientific evidence** to answer questions or to support their findings.	
5. Animals including humans	• 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**;	• I can recognise that living things can be grouped in a variety of ways. • I can explore and use classification keys to help group, identify and name a variety of living things in my local environment. • I can recognise that environments can change and that this can sometimes pose dangers to living things.
Year 5		
1. Properties of materials	• **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;	• I can compare and group materials according to whether they are solids, liquids or gases and name their properties. • I can describe the properties of materials using scientific vocabulary. • I can investigate the thermal insulation of different materials. • I can compare and group materials based on their response to magnets.

	• **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 a degree of trust in results, in **oral** and **written forms** such as displays and other presentations;	• I know that some materials dissolve in a liquid to make a solution. • I can predict how I could separate mixtures. • I can explain why some changes are irreversible.
2. Forces	• **planning** different types of **scientific enquiries** to answer questions, including **recognising** and **controlling variables** where necessary; • taking **measurements**, using a range of **scientific equipment**, with increasing accuracy and precision, taking **repeat readings** when appropriate; • **recording data** and results of increasing complexity using **scientific diagrams** and **labels**, **classification keys**, **tables**, **scatter graphs**, **bar** and **line graphs**; • **reporting** and **presenting** findings from enquiries, including **conclusions**, **causal relationships** and **explanations** of and a degree of trust in results, in **oral** and **written forms** such as displays and other presentations;	• I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and falling objects. • I can identify the effect of friction between moving surfaces. • I can identify the effect of air resistance. • I can identify the effect of water resistance. • I can recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.
3. Earth and space	• **planning** different types of **scientific enquiries** to answer questions, including **recognising** and **controlling variables** where necessary;	• I can describe the planets in the solar system. • I can describe the Sun, Earth and Moon as approximately spherical bodies.

	• 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**; • **reporting** and **presenting** findings from enquiries, including **conclusions**, **causal relationships** and **explanations** of and a 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.	• I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system. • I can describe the movement of the Moon relative to the Earth. • I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. • I can describe the movement of the Moon relative to the Earth.
4. Living things and their habitats	• **recording data** and results of increasing complexity using **scientific diagrams** and **labels**, **classification keys**, **tables**, **scatter graphs**, **bar** and **line graphs**; • **reporting** and **presenting** findings from enquiries, including **conclusions**, **causal relationships** and **explanations** of and a degree of trust in results, in **oral** and **written forms** such as displays and other presentations;	• I can discuss the seven life processes. • I can explain how mammals reproduce • I can explain how animals reproduce. • I understand reproduction in plants. • I can describe the differences in the life cycles of mammals, amphibians, reptiles, insects and birds. • I can explain the life cycle of plants.
5. Animals including humans		• I can describe the human life cycle. • I understand how a foetus develops in the womb. • I can describe what happens when I am a teenager. • I can describe what happens when I am a senior.
• **Year 6**		
1. Animals including humans	• **planning** different types of **scientific enquiries** to answer questions, including	• I can identify and name the main parts of the human circulatory system.

	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 a 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.	• I can identify and name the main parts of the heart. • I can describe how water and nutrients are transported in humans. • I can identify how humans can live a healthy lifestyle.
2. Electricity	• **planning** different types of **scientific enquiries** to answer questions, including **recognising** and **controlling variables** where necessary; • taking **measurements**, using a range of **scientific equipment**, with increasing accuracy and precision, taking **repeat readings** when appropriate; • **recording data** and results of increasing complexity using **scientific diagrams** and **labels**, **classification keys**, **tables**, **scatter graphs**, **bar** and **line graphs**; • using test results to make **predictions** to set up further comparative and fair tests;	• I can use symbols when drawing a simple circuit diagram. • I can associate the brightness of a lamp with the number and voltage of cells used in the circuit. • I can investigate variations in how components function. • I can name renewable and non-renewable sources of energy.

	• **reporting** and **presenting** findings from enquiries, including **conclusions**, **causal relationships** and **explanations** of and a 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.	
3. Light	• **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 a 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.	• I can recognise that light appears to travel in straight lines. • I can 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. • I can explain how the eye works. • I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. • I can explain how shadows change during the day.
4. Living things and their habitats	• **planning** different types of **scientific enquiries** to answer questions, including	• I can describe how living things can be classified into broad groups.

	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 a 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.	• I understand how I can use classification keys to help group, identify and name a variety of living things. • I can describe how living things can be classified into broad groups. • I understand that microorganisms are also living things. • I can describe how living things can be classified into broad groups. • I know that scientists have developed different ways to classify living things.
5. Evolution and inheritance	• **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;	• I can identify how plants are adapted to their environment. • I can identify how animals are adapted to their environment. • I can explain natural selection and how it may lead to evolution. • I can explain how adaptations may lead to evolution. • I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.

	• **reporting** and **presenting** findings from enquiries, including **conclusions**, **causal relationships** and **explanations** of and a 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.	