St Anne's CE Primary – Science

Progression of Knowledge and Skills

St Anne's CE Primary – Science

Progression of Knowledge and Skills

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Testing	Ask simple questions when prompted and suggest ways of answering a question. Look closely at similarities, differences, patterns and change.	Create simple questions to test. Looks closely at similarities, differences, patterns and change and explain these. Create ideas about what they might change if they repeated an activity.	Create questions that can be tested. Perform simple comparative and fair tests e.g. • Finding out how seeds grow best. •Explain observations and changes they see.	Set up simple practical enquiries, comparative and fair tests e.g. • To see which type of soil is most suitable when growing two similar plants? •To see if their right hand is as efficient as their left. • Set up a fair test with different variables e.g. the best conditions for a plant to grow. • Can explain to a partner why a test is a fair one. Begin to recognise how variables affect the validity of a test.	Set up simple practical enquiries, comparative and fair tests e.g. • Which of two instruments make the highest or lowest sound and does a glass of ice weigh more than a glass of water. Set up a fair test with more than one variable e.g. • using different materials to cut out sound. Can explain to others why a test is fair/ unfair e.g. discover how fast ice melts in different temps. Begin to recognise how variables affect the validity of a test.	Set up an investigation when it is appropriate. e.g. finding out which materials dissolve or not. Set up a fair test when needed e.g. • Which surfaces create most friction? Set up an enquiry-based investigation e.g. • Find out what adults/ children can do now that they couldn't do when they were a baby. Know which variables to change and which variables to keep constant.	Know which type of investigation is needed to suit a particular scientific enquiry e.g. • Looking at the relationship between pulse and exercise. Set up a fair test when needed. e.g. • Does light travel in straight lines? Know how to set up an enquiry-based investigation. e.g. • What is the relationship between oxygen and blood? Know which variables to change and which variables to keep constant.
Scientific enquiry	Show curiosity about objects, events and people.	Ask simple questions when prompted and	Ask simple questions that can be tested.	Ask relevant questions and use different types of	Ask relevant questions and use different types of	Plan different types of scientific	Plan different types of scientific

St Anne's CE Primary – Science

Progression of Knowledge and Skills

	Take a risk, engage in new experiences and learn by trial and error. Develop ideas of grouping, sequences, cause and effect. Comment and asks questions about aspects of their familiar world such as the place where they live or the natural world. Use senses to explore the world around them.	suggest ways of answering a question. Develop ideas of grouping, sequences, cause and effect. Make links and notice patterns in their experiences. Use topic vocabulary that reflects the breadth of their experience.	Use topic vocabulary that reflects the breadth of their experience. Plan a simple sequence of ideas that can be tested. Reflect on their ideas and discuss what worked and what did not. Summarise the outcome of an investigation.	scientific enquiries to answer them e.g. • Why does the moon appear as different shapes in the night sky? • Why do shadows change during the day? • Where does a fossil come from? Plan a simple sequence of ideas that can be tested. Summarise the outcome of an investigation.	scientific enquiries to answer them e.g. • Why are steam and ice the same thing? • Why is the liver important in the digestive system? • What do we mean by pitch when it comes to sound? Plan a detailed sequence of ideas that can be tested formally. Work in independently and in groups to find the answer to a hypothesis.	enquires to answer given questions. e.g. •Which material is the most effective thermal insulator? •Are all metals electrical conductors. •What are the different gestation periods for these animals. Work in independently and in groups to find the answer to a hypothesis.	enquires to answer given questions. Independently create questions to investigate. Work independently and in groups when carrying out an investigation.
Measuring	Use a range of standard and non-standard units of measurements. Count forwards and backwards	Use a range of standard and non-standard units of measurements. Compare amounts and use related vocabulary e.g. more than/ less than.	Use standard measurements to measure amounts. Compare amounts and use related vocabulary e.g. more than/ less than.	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including	Take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Y5 maths focus	Take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate e (Y6 focus including

St Anne's CE Primary – Science

Progression of Knowledge and Skills

		Choose and use appropriate equipment for different learning opportunities.	Use simple standard equipment to measure accurately. Apply more formal mathematical skills when measuring.	thermometers and data loggers. Use simple standard equipment to measure accurately. Apply formal mathematical skills when measuring.	thermometers and data loggers. Select their own resources to measure. Apply formal mathematical skills when measuring.	including capacity and mass) Select their own resources to measure. Apply formal mathematical skills when measuring.	capacity, mass, ratio and proportion) Select their own resources to measure. Apply formal mathematical skills when measuring.
Gathering and recording	Collect and group materials and other resources based on different criteria.	Gather and record data. Identify and classify with guidance	Use set criteria to gather and record information. Use simple tables/ graphs to gather and compare information.	Gather, record, classify and present data in a variety of ways to help in answering questions drawings, labelled diagrams, keys and child constructed bar charts and tables (Year 3 focus)	Gather, record, classify and present data in a variety of ways to help in answering questions drawings, labelled diagrams, keys and child constructed bar charts and tables (Year 4 focus)	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. (Year 5 focus)	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. (Year 6 focus)
Communicating findings	Talk about and simply explain what they have seen. Using criteria, pupils compare and talk about similarities and differences. Create simple representations of events, people and objects	Recognise findings Use their observations and ideas to suggest answers to simple questions. Explain what they have noticed by comparing data.	Write sentences to summarise their findings. Present ideas that compare more than one set of data. Draw labelled diagrams to present information. Discuss their findings using	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. (Year 3 focus). Draw labelled diagrams to present information.	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. (Year 4 focus) Begin to use a range of graphs, charts and tables to	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. (Year 5 focus).	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. (Year 6 focus)

St Anne's CE Primary – Science

Progression of Knowledge and Skills

			appropriate scientific vocabulary. Spell scientific vocabulary increasingly accurately.	Discuss their findings using appropriate scientific vocabulary. Spell scientific vocabulary increasingly accurately.	communicate findings. Spell scientific vocabulary increasingly accurately. Check own written accounts for spelling and grammatical errors.	Use a range of graphs, charts and tables to communicate findings. Check own written accounts for spelling and grammatical errors.	Independently create appropriate charts, graphs and tables suited to the information that they want to present. Check own written accounts for spelling and grammatical errors
Classifying	Make links and notice patterns in their experiences.	Use criteria to group different objects, animals and plants. Identify similarities and differences between objects, plants and animals.	Begin to create own criteria for classifying living and non-living things. Identify a range of similarities and differences between objects, plants and animals. Identify, group and classify according to a given criteria e.g. Deciduous and coniferous trees e.g. using a Venn Diagram	Begin to create own criteria for classifying living and non-living things. Group information according to common factors e.g. plants that grow in woodlands/plants that grow in gardens. (Yr 3 focus) e.g. Venn Diagrams with bisecting sets or Carroll Diagrams.	Create own criteria for classifying living and non-living things. Group information according to common factors e.g. materials that make good conductors or insulators. (Yr4 focus) e.g. Venn Diagrams with bisecting sets or Carroll Diagrams.	Create own criteria for classifying living and non-living things. Group and classify things and recognise patterns using appropriate ways of presenting e.g. classification keys.	Create own criteria for classifying living and non-living things. Group and classify things and recognise patterns using appropriate ways of presenting e.g. classification keys.
Scientific research	Pupils make observations of animals and plants and explain why some things occur	Pupils make observations of animals and plants and explain why some things occur	Create their own questions independently and in groups that they can research.	Create their own questions independently and in groups that they can research.	Create their own questions independently and in groups that they can research.	Create their own questions independently and in groups that they can research.	Create their own questions independently and in groups that they can research.

St Anne's CE Primary – Science

Progression of Knowledge and Skills

	and talk about changes. Find ways to solve problems / find new ways to do things / test their ideas.	and talk about changes. Plan what and how they can find out answers to simple questions. Create and explain simple criteria on how to carry out simple investigations.	Plan what and how they can find out answers to simple questions. Use a range of sources to find the answers to questions.	Use research to find out a range of things e.g. • How reflection can help us see things that are around the corner. • What are the main differences between sedimentary and igneous rocks? Use a range of sources to find the answers to questions.	Use research to find out a range of things e.g. • Which materials make effective conductors and insulators of electricity? • How much time it takes to digest our food. Independently, choose and use a range of sources to find the answers to questions.	Independently plan a line of investigation to research. Independently, choose and use a range of sources to find the answers to questions.	Independently plan a line of investigation to research. Independently, choose and use a range of sources to find the answers to questions.
Concluding and questioning	Simply summarise what they have noticed. Pupils talk about the features of their own immediate environment and how environments might vary from one another.	Simply summarise what they have noticed. Compare outcomes from investigations. Develop simple questions based on what they have observed.	Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns. Summarise what they have observed using simple sentences.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. (Year 3 focus) Summarise what they have observed using simple sentences.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions, (Year 4 focus) Summarise what they have observed by comparing more than one set of data.	Use results to draw conclusions. Pupils evaluative when explaining findings from scientific enquiries and they are clear about what has happened in recent investigations. Pupils can relate this to other enquiries where appropriate. (Year 5 focus) Summarise what they have observed	Use results to draw conclusions. Pupils evaluative when explaining findings from scientific enquiries and they are clear about what has happened in recent investigations. Pupils can relate this to other enquiries where appropriate. (Year 6 focus) Summarise what they have observed

St Anne's CE Primary – Science

Progression of Knowledge and Skills

						by comparing more than one set of data.	by comparing more than one set of data.
Using scientific evidence	Explain the similarities and differences between what they have noticed. Create simple representations of events, people and objects. Talk about the similarities and differences in relation to places, objects, materials and living things.	Talk about the similarities and differences in relation to places, objects, materials and living things. Develop new simple questions based on what they have observed.	Develop new simple questions based on what they have observed. Reflect on the hypothesis and explain whether it has been proven. Present their outcomes from investigation using simple graphs.	Use straightforward scientific evidence to answer questions or to support their findings. (Year 3 focus) Develop new simple questions based on what they have observed. Reflect on the hypothesis and explain whether it has been proven. Present outcomes in a variety of ways using graphs and charts. (Year 3 focus)	Use straight forward scientific evidence to answer questions or to support his/her findings. (Year 4 focus) Develop new questions based on what they have observed. Reflect on the hypothesis and explain whether it has been proven. Present outcomes in a variety of ways using graphs and charts. (Year 4 focus)	Identify scientific evidence that has been used to support or refute ideas or arguments. (Year 5 focus) Develop new questions based on what they have observed. Reflect on the hypothesis and explain whether it has been proven. Present outcomes in a variety of ways using graphs, charts, tables and diagrams. (Year 5 focus)	Identify scientific evidence that has been used to support or refute ideas or arguments. (Year 6 focus) Develop new questions based on what they have observed. Reflect on the hypothesis and explain whether it has been proven. Present outcomes in a variety of ways using graphs, charts, tables and diagrams. (Year 6 focus)

St Anne's CE Primary – Science

Progression of Knowledge and Skills