Activity Description	National Curriculum of England links
Activity 1: Calculate your carbon footprint Pupils use information about personal travel and home energy usage to calculate their own carbon footprint.	**English Curriculum:** **Spoken language – years 1- 6** (Statutory requirements) **Speaking** • ask relevant questions to extend their understanding and knowledge • speak audibly and fluently with an increasing command of Standard English • use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas. **Listening** • listen and respond appropriately to adults and their peers **Discussion** • participate in discussions • maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments ** These statements apply to all years. The content should be taught at a level appropriate to the age of the pupils. Pupils should build on the oral language skills that have been taught in preceding years.* **Mathematics Curriculum:** **Lower key stage 2 – years 3 and 4** ***Introduction – maths skills** **Pupils should:** • develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. • develop their ability to solve a range of problems, including with simple fractions and decimal place value.

- develop skills in using measuring instruments with accuracy and make connections between measure and number.

Number – number and place value

Year 3

- identify, represent and estimate numbers using different representations
- solve number problems and practical problems

Year 4

- identify, represent and estimate numbers using different representations
- solve number and practical problems

Year 5

- solve number problems and practical problems

Year 6

- solve number and practical problems

Number – addition and subtraction

Year 3

- add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.

Year 4

- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.

Year 5

- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Year 6

- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Science Curriculum:

Lower key stage 2 - years 3 & 4

Working scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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.
- 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.

Upper key stage 2 – years 5 and 6

Working scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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.

Links to the following KS2 science programmes of study:

- Year 4 - Electricity
- Year 4 - States of matter
- Year 5- Properties and changes of materials
- Year 6- Electricity

Geography Curriculum

Key stage 2

Pupils should be taught to:

Human and physical geography

Describe and understand key aspects of:

- human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water

Geographical skills and fieldwork

- use fieldwork to observe, measure, record and present the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies

Computing Curriculum

Key stage 2

Pupils should be taught to:

- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

PSHE/Citizenship Curriculum*

Key stage 2

Developing confidence and responsibility and making the most of their abilities.

Pupils should be taught:

- to talk and write about their opinions, and explain their views, on issues that affect themselves and society
- to recognise their worth as individuals by identifying positive things about themselves and their achievements, seeing their mistakes, making amends and setting personal goals
- to face new challenges positively by collecting information, looking for help, making responsible choices, and taking action;

Preparing to play an active role as citizens

Pupils should be taught:

- that there are different kinds of responsibilities, rights and duties at home, at school and in the community, and that these can sometimes conflict with each other
- to resolve differences by looking at alternatives, making decisions and explaining choices
- that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment;

Developing good relationships and respecting the differences between people

Pupils should be taught:

- that their actions affect themselves and others, to care about other people's feelings and to try to see things from their points of view

Breadth of opportunities

During the key stage, pupils should be taught the knowledge, skills and understanding through opportunities to:

- take responsibility
- participate
- make real choices and decisions

	• meet and talk with people **Citizenship/PHSE for Key stage 2 is non-statutory. The revised National Curriculum advises that schools make their own provisions. The above attainment targets are for guidance only.*
Activity 2: What is low-carbon energy? Pupils explore and discuss the differences between fossil fuels and low carbon energies and investigate their suitability for different parts of the UK, based on the landscape and climate of the area.	**English Curriculum:** **Spoken language – years 1- 6** (Statutory requirements) **Speaking** • use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas • ask relevant questions to extend their understanding and knowledge • articulate and justify answers, arguments and opinions **Listening** • listen and respond appropriately to adults and their peers • consider and evaluate different viewpoints, attending to and building on the contributions of others **Discussion** • maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments • participate in discussions, presentations, performances, role play, improvisations and debates ******* *These statements apply to all years. The content should be taught at a level appropriate to the age of the pupils. Pupils should build on the oral language skills that have been taught in preceding years.* **Reading – comprehension** **Lower key stage 2 – years 3 and 4** • retrieve and record information from non-fiction **Upper key stage – years 5 and 6** • retrieve, record and present information from non-fiction

- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary

Science Curriculum:

Lower key stage 2 - years 3 & 4

Working scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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
- 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

Upper key stage 2 – years 5 and 6

Working scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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.

Links to the following KS2 science programmes of study:
Year 3 – Rocks
Year 6 – Evolution and inheritance

Geography Curriculum:

Key stage 2:

Locational knowledge

Pupils should be taught to:

- name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time.

Place knowledge

Pupils should be taught to:

- understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom.

Human and physical geography

Pupils should be taught to:

- describe and understand key aspects of human geography, including types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy.

PSHE/Citizenship Curriculum *

Key stage 2

	Developing confidence and responsibility and making the most of their abilities. **Pupils should be taught:** • to talk and write about their opinions, and explain their views, on issues that affect themselves and society • to face new challenges positively by collecting information, looking for help, making responsible choices, and taking action; **Preparing to play an active role as citizens** **Pupils should be taught:** • that there are different kinds of responsibilities, rights and duties at home, at school and in the community, and that these can sometimes conflict with each other • to resolve differences by looking at alternatives, making decisions and explaining choices • that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment; **Developing good relationships and respecting the differences between people** **Pupils should be taught:** • that their actions affect themselves and others, to care about other people's feelings and to try to see things from their points of view **Breadth of opportunities** **During the key stage, pupils should be taught the knowledge, skills and understanding through opportunities to:** • take responsibility • participate • make real choices and decisions • meet and talk with people **Citizenship/PHSE for Key stage 2 is non-statutory. The revised National Curriculum advises that schools make their own provisions. The above attainment targets are for guidance only.*
Activity 3: How much low-carbon energy do we use?	**English Curriculum**

Pupils research energy sources across the UK and discuss their advantages and disadvantages.	**Spoken language – years 1- 6 *** (Statutory requirements) **Speaking** • speak audibly and fluently with an increasing command of Standard English • use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas • articulate and justify answers, arguments and opinions **Listening** • listen and respond appropriately to adults and their peers • consider and evaluate different viewpoints, attending to and building on the contributions of others **Discussion** • maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments • participate in discussions, presentations, performances, role play, improvisations and debates *These statements apply to all years. The content should be taught at a level appropriate to the age of the pupils. Pupils should build on the oral language skills that have been taught in preceding years. **Reading – comprehension** **Lower key stage 2 – years 3 and 4** • asking questions to improve their understanding of a text • identifying how language, structure, and presentation contribute to meaning • retrieve and record information from non-fiction **Upper key stage – years 5 and 6** • asking questions to improve their understanding • summarising the main ideas drawn from more than one paragraph, identifying key details that support the main ideas • identifying how language, structure and presentation contribute to meaning

- retrieve, record and present information from non-fiction
- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary
- provide reasoned justifications for their views.

Mathematics curriculum:

Statistics

Year 3

- pupils should be taught to interpret and present data using bar charts, pictograms and tables

Year 4

- pupils should be taught to interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

Year 5

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables

Year 6

- pupils should be taught to interpret and construct pie charts and line graphs and use these to solve problems
- calculate and interpret the mean as an average

Geography Curriculum:

Key stage 2

Locational knowledge

Pupils should be taught to:

- name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time

Place knowledge

Pupils should be taught to:

- understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America

Human and physical geography

Pupils should be taught to:

- describe and understand key aspects of: human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy

Science Curriculum:

Lower key stage 2 - years 3 & 4

Working scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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
- 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

Upper key stage 2 – years 5 and 6

Working scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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.

Links to the following KS2 science programmes of study:

- Year 4 - Electricity

PSHE/Citizenship Curriculum *

Key stage 2

Developing confidence and responsibility and making the most of their abilities.

Pupils should be taught:

- to talk and write about their opinions, and explain their views, on issues that affect themselves and society
- to face new challenges positively by collecting information, looking for help, making responsible choices, and taking action;

Preparing to play an active role as citizens

Pupils should be taught:

- that there are different kinds of responsibilities, rights and duties at home, at school and in the community, and that these can sometimes conflict with each other
- to resolve differences by looking at alternatives, making decisions and explaining choices

	• that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment; **Developing good relationships and respecting the differences between people** **Pupils should be taught:** • that their actions affect themselves and others, to care about other people's feelings and to try to see things from their points of view **Breadth of opportunities** **During the key stage, pupils should be taught the knowledge, skills and understanding through opportunities to:** • take responsibility • participate • make real choices and decisions • meet and talk with people **Citizenship/PHSE for Key stage 2 is non-statutory. The revised National Curriculum advises that schools make their own provisions. The above attainment targets are for guidance only.*
Activity 4: How does nuclear energy work? Pupils explore the nuclear energy process and key scientific concepts such as atoms, neutrons and nuclear fission.	**English Curriculum:** **Spoken language – years 1- 6 *** (Statutory requirements) **Speaking** • give well-structured descriptions, explanations and narratives for different purposes, including for expressing feelings • use relevant strategies to build their vocabulary • ask relevant questions to extend their understanding and knowledge **Listening** • listen and respond appropriately to adults and their peers • consider and evaluate different viewpoints, attending to and building on the contributions of others

Discussion

- maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments
- participate in discussions, presentations, performances, role play, improvisations and debates

***These statements apply to all years. The content should be taught at a level appropriate to the age of the pupils. Pupils should build on the oral language skills that have been taught in preceding years.*

Reading – comprehension

Lower key stage 2 – years 3 and 4

- retrieve and record information from non-fiction

Upper key stage – years 5 and 6

- retrieve, record and present information from non-fiction
- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary

Science curriculum:

Lower key stage 2 - years 3 & 4

Working scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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
- 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

Upper key stage 2 – years 5 and 6

Working scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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.

Links to the following KS2 science programmes of study:

- Year 4 - Electricity
- Year 4 - States of matter
- Year 5- Properties and changes of materials
- Year 6 Electricity

PSHE/Citizenship Curriculum*

Key stage 2

Developing confidence and responsibility and making the most of their abilities.

Pupils should be taught:

- to talk and write about their opinions, and explain their views, on issues that affect themselves and society

- to face new challenges positively by collecting information, looking for help, making responsible choices, and taking action;

Preparing to play an active role as citizens
Pupils should be taught:

- that there are different kinds of responsibilities, rights and duties at home, at school and in the community, and that these can sometimes conflict with each other
- to resolve differences by looking at alternatives, making decisions and explaining choices
- that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment;

Developing good relationships and respecting the differences between people
Pupils should be taught:

- that their actions affect themselves and others, to care about other people's feelings and to try to see things from their points of view

Breadth of opportunities
During the key stage, pupils should be taught the knowledge, skills and understanding through opportunities to:

- take responsibility
- participate
- make real choices and decisions
- meet and talk with people

**Citizenship/PHSE for Key stage 2 is non-statutory. The revised National Curriculum advises that schools make their own provisions. The above attainment targets are for guidance only.*

Computing curriculum:

Key stage 2

- pupils should be taught to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

	• select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
Activity 5: How you can save the planet Pupils begin to identify the different forms that energy can take and how it can be lost or wasted, leading to discussions on how best to save energy.	**English Curriculum:** **Spoken language – years 1- 6 *** (Statutory requirements) **Speaking** • ask relevant questions to extend their understanding and knowledge • use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas • articulate and justify answers, arguments and opinions **Listening** • listen and respond appropriately to adults and their peers • consider and evaluate different viewpoints, attending to and building on the contributions of others **Discussion** • participate in discussions, presentations, performances, role play, improvisations and debates • maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments. **These statements apply to all years. The content should be taught at a level appropriate to the age of the pupils. Pupils should build on the oral language skills that have been taught in preceding years.* **Mathematics Curriculum:** **Statistics:** **Year 3**

- pupils should be taught to interpret and present data using bar charts, pictograms and tables

Year 4

- pupils should be taught to interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

Year 5

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables

Year 6

- pupils should be taught to interpret and construct pie charts and line graphs and use these to solve problems
- calculate and interpret the mean as an average

Science Curriculum:

Lower key stage 2 - years 3 & 4

Working scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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
- 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.

Upper key stage 2 – years 5 and 6

Working scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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.

Links to the following KS2 science programmes of study:

- Year 3: Forces and magnets
- Year 4 - Electricity
- Year 4 - States of matter
- Year 5- Properties and changes of materials
- Year 6 Electricity

Computing Curriculum:

Key stage 2

- pupils should be taught to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

HORIZON NUCLEAR POWER

FUTURES
Inspiring a generation

PSHE/Citizenship Curriculum*

Key stage 2

Developing confidence and responsibility and making the most of their abilities.

Pupils should be taught:

- to talk and write about their opinions, and explain their views, on issues that affect themselves and society
- to face new challenges positively by collecting information, looking for help, making responsible choices, and taking action;

Preparing to play an active role as citizens

Pupils should be taught:

- that there are different kinds of responsibilities, rights and duties at home, at school and in the community, and that these can sometimes conflict with each other
- to resolve differences by looking at alternatives, making decisions and explaining choices
- that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment;

Developing good relationships and respecting the differences between people

Pupils should be taught:

- that their actions affect themselves and others, to care about other people's feelings and to try to see things from their points of view

Breadth of opportunities

During the key stage, pupils should be taught the knowledge, skills and understanding through opportunities to:

- take responsibility
- participate
- make real choices and decisions
- meet and talk with people

*Citizenship/PHSE for Key stage 2 is non-statutory. The revised National Curriculum advises that schools make their own provisions. The above attainment targets are for guidance only.

Activity 6: Power your school with low-carbon energy
Pupils design, construct and test their own anemometer, evaluating its effectiveness. They then use it to help explore the suitability of constructing a wind turbine within the school grounds.

English Curriculum:

Spoken language – years 1- 6 *

(Statutory requirements)

Speaking

- use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas
- ask relevant questions to extend their understanding and knowledge

Listening

- listen and respond appropriately to adults and their peers
- consider and evaluate different viewpoints, attending to and building on the contributions of others

Discussion

- maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments
- participate in discussions, presentations, performances, role play, improvisations and debates

**These statements apply to all years. The content should be taught at a level appropriate to the age of the pupils. Pupils should build on the oral language skills that have been taught in preceding years.*

Mathematics Curriculum:

Measurements

Year 3:

- estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.
- compare durations of events [for example to calculate the time taken by particular events or tasks)

Year 4

- solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

Year 5

- solve problems involving converting between units of time

Year 6

- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.

Statistics:

Year 3

- pupils should be taught to interpret and present data using bar charts, pictograms and tables

Year 4

- pupils should be taught to interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

Year 5

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables

Year 6

- pupils should be taught to interpret and construct pie charts and line graphs and use these to solve problems
- calculate and interpret the mean as an average

Science curriculum:

Lower key stage 2 - years 3 & 4

Working scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills:

- 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. • 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 **Upper key stage 2 – years 5 and 6** **Working scientifically** During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills: • 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. Links to the following KS2 science programmes of study: • Year 3 - Forces and magnets • Year 4 - Electricity • Year 4 - States of matter • Year 5 - Properties and changes of materials • Year 5 - Forces • Year 6 - Electricity

Computing curriculum:

Key stage 2

- pupils should be taught to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Design and technology curriculum

Key stage 2

When designing and making, pupils should be taught to:

Design:

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make:

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate:

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

Technical knowledge:

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures

	• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • uderstand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]