



Redbrook Hayes Community Primary School

Connected Curriculum
Upper Key Stage 2
To infinity and beyond!

As **scientists** we will discover how the changes in months, seasons and years are controlled by the movement of the earth round the sun.

We will journey further into space to learn about light and sound and how they travel across billions of miles to reach us here on earth.

As **artists** we will look at the pop art movement and the work of Andy Warhol.

We will use this style to create motifs of the solar system that can be turned into printed images.

To infinity and beyond!

As **musicians** we will journey through space to discover the planets of our Solar System. We will listen to British composer Gustav Holst's 'The Planets' and use these to begin to compose our own pieces.

We will use a range of tuned and untuned instruments and musical notation so that others can enjoy playing our pieces too.

This unit contributes to the whole-school plans for SMSC, British Values and Learning and Life Skills in the following ways.

British Values: Rule of Law, Individual Liberty, Mutual Respect, Tolerance of Other Faiths.

SMSC: Spiritual (Experience and talk about the spiritual dimension to human experiences, reflect on the natural environment to inspire art and music); Moral (Demonstrate ability to negotiate and compromise, work independently and as a group to research information, make choices and describe their reasons); Social (Discuss how individuals, organisations and the Government can look after the global environment); Cultural (Recognise the contributions of all cultures in global developments).

Learning and Life Skills: Working together, Speaking and Listening.

Other Opportunities: Solar System models (DT/ Art - sculpture)

Links to Literacy:

Enhancement Opportunities: Jodrell Bank (Cheshire); National Space Centre (Leicester)



	Strand	Progression Statement	Working Towards Expectations	Meeting Expectations	Exceeding Expectations
Planning	a) Pupils can ask questions				
	b) Pupils can plan an enquiry	With prompting, plan different types of scientific enquiries to answer questions.	<i>Pupil can plan investigations using different types of scientific enquiry.</i>	<i>Pupil can, with support, can answer questions using evidence gathered from different types of scientific enquiry, e.g. comparing life cycles of different plants using change over time, surveys and secondary research.</i>	<i>Pupil can answer questions using evidence gathered from different types of scientific enquiry.</i>
	c) Pupils can identify and manage variables	With prompting, recognise and control variables where necessary.	<i>Pupil can set up comparative and fair tests.</i>	<i>Pupil can, with prompting, identifies and manages variables, e.g. when exploring falling paper cones.</i>	<i>Pupil can identify and manage variables.</i>
Conducting Experiments	a) Pupils can use equipment to take measurements	Select, with prompting, and use appropriate equipment to take readings.	<i>Pupil can, following discussion, follow guidance to use equipment, e.g. timer.</i>	<i>Pupil can, following discussion of alternatives, selects appropriate equipment, e.g. using a shadow stick and measuring length and angle of shadow.</i>	<i>Pupil can use appropriate equipment, such as meter rule, to take measurements, such as distance travelled.</i>
	b) Pupils explore how to improve the quality of data				
	c) Pupils understand the role of repeat readings	Take precise measurements using standard units.	<i>Pupil can recognises importance of using standard units and measures accurately.</i>	<i>Pupil can take measurements that are precise as well as accurate, e.g. measuring the force needed to pull different shapes of boat through the water.</i>	<i>Pupil can consider how by modifying instrument or technique , measurements can be improved.</i>
g Evidence	a) Pupils record work with diagrams and label them	Take and process repeat readings.	<i>Pupil can, with prompting, can take repeat readings.</i>	<i>Pupil can know how to process repeat readings, e.g. when timing falling objects.</i>	<i>Pupil can identify situations in which taking repeat readings will improve the quality of evidence.</i>

	b) Pupils can display data using labelled diagrams, keys, tables and bar charts	Record data and results.	<i>Pupil can use words and diagrams to record findings.</i>	<i>Pupil can start to use labelled diagrams to show more complex outcomes, e.g. comparing the time of day at different places on the earth.</i>	<i>Pupil can use labelled diagrams to show complex outcomes.</i>
	c) Pupils can display data using line graphs	Record data using labelled diagrams, keys, tables and charts.	<i>Pupil can use various ways to record evidence.</i>	<i>Pupil can, with prompting, use various ways to record complex evidence, e.g. when investigating how gears and levers enable a small force to have a larger effect.</i>	<i>Pupil can use various ways, as appropriate, to record complex evidence.</i>
Reporting Findings	a) Pupils process findings to develop conclusions and identify causal relationships	Use line graphs to record data.	<i>Pupil can, with prompting, use line graphs.</i>	<i>Pupil can use a line graph to record basic data, e.g. length and mass of a baby as it grows.</i>	<i>Pupil can use line graphs to display complex data.</i>
	b) Pupils use displays and presentations to report on findings	Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships.	<i>Pupil can write a conclusion based on evidence.</i>	<i>Pupil can, with prompting, write a conclusion using evidence and identifying causal links, e.g. investigating what makes a parachute fall quicker.</i>	<i>Pupil can write a conclusion using evidence and identifying causal links.</i>
	c) Pupils explain confidence in findings	With support, present findings from enquiries orally and in writing.	<i>Pupil can present findings either in writing or orally.</i>	<i>Pupil can, with support, display and present key findings from enquiries orally and in writing, e.g. suggesting reasons for similarities and differences between various animals.</i>	<i>Pupil can display and present key findings from enquiries orally and in writing.</i>
Conclusions and Predictions	a) Pupils can analyse data	With prompting, identify that not all results may be trustworthy.	<i>Pupil can indicate individual results that might be suspect.</i>	<i>Pupil can, with support, indicate why some results may not be entirely trustworthy, e.g. when timing falling objects.</i>	<i>Pupil can, in conclusions, indicate how trustworthy they are.</i>
	b) Pupils can draw conclusions				
	c) Pupils can develop	Suggest how evidence can	<i>Pupil can, with prompting, show</i>	<i>Pupil can show how evidence</i>	<i>Pupil can identify how an idea is</i>

	investigation further	support conclusions.	<i>how evidence supports a conclusion.</i>	<i>supports a conclusion, e.g. researching gestation periods of various mammals and relating them to adult mass.</i>	<i>supported or refuted by evidence.</i>
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	Strand	Progression Statement	Working Towards Expectations	Meeting Expectations	Exceeding Expectations
Planning	a) Pupils can ask questions				
	b) Pupils can plan an enquiry	Plan different types of scientific enquiries to answer questions.	<i>Pupil can, with support, can answer questions using evidence gathered from different types of scientific enquiry.</i>	<i>Pupil can answer questions using evidence gathered from different types of scientific enquiry, e.g. operation of circulatory system from experiment, survey and secondary research.</i>	<i>Pupil can suggest which type of enquiry is likely to be more successful at providing answers to a particular question.</i>
	c) Pupils can identify and manage variables	Recognise and control variables where necessary.	<i>Pupil can, with prompting, identifies and manages variables.</i>	<i>Pupil can identify and manage variables, e.g. distances and sizes in shadow formation.</i>	<i>Pupil can identify and manage variables and recognises variables that cannot be easily managed.</i>
Conducting Experiments	a) Pupils can use equipment to take measurements	Take measurements using a range of scientific equipment.	<i>Pupil can, following discussion of alternatives, select appropriate equipment, e.g. measuring jug to measure volume.</i>	<i>Pupil can use appropriate equipment, such as meter rule, to take measurements, such as distance travelled by light.</i>	<i>Pupil can recognise limitations of available equipment, e.g. accuracy of balance.</i>
	b) Pupils explore how to improve the quality of data				
	c) Pupils understand the role of repeat readings	Take measurements with increasing accuracy and precision.	<i>Pupil can take measurements that are precise as well as accurate.</i>	<i>Pupil can consider how by modifying instrument or technique, measurements can be improved, e.g. when recording route of light rays.</i>	<i>Pupil can evaluate different techniques, with reference to accuracy and precision.</i>
Recording Evidence	a) Pupils record work with diagrams and label them	Take repeat readings when appropriate.	<i>Pupil can know how to process repeat readings.</i>	<i>Pupil can identify situations in which taking repeat readings will improve the quality of evidence, e.g. investigating the behaviour of components in a circuit.</i>	<i>Pupil can explain why repeatedly taking repeat readings is of little value.</i>

	b) Pupils can display data using labelled diagrams, keys, tables and bar charts	Record data and results of increasing complexity using scientific diagrams and labels.	<i>Pupil can start to use labelled diagrams to show more complex outcomes.</i>	<i>Pupil can use labelled diagrams to show complex outcomes, e.g. relating specific adaptations of organisms to environmental factors.</i>	<i>Pupil can explain why a labelled diagram may be particularly effective.</i>
	c) Pupils can display data using line graphs	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar charts.	<i>Pupil can, with prompting, uses various ways to record complex evidence.</i>	<i>Pupil can use various ways, as appropriate, to record complex evidence, e.g. in the construction of a key to aid plant identification.</i>	<i>Pupil can evaluate various ways of recording complex data.</i>
Reporting Findings	a) Pupils process findings to develop conclusions and identify causal relationships	Record data and results of increasing complexity using line graphs.	<i>Pupil can use a line graph to record basic data.</i>	<i>Pupil can use line graphs to display complex data, e.g. size of object in relation to the size of the shadow it casts.</i>	<i>Pupil can explain the advantages of using line graphs.</i>
	b) Pupils use displays and presentations to report on findings	Report and present findings from enquiries, including conclusions and causal relationships.	<i>Pupil can, with prompting, write a conclusion using evidence and identifying causal links.</i>	<i>Pupil can write a conclusion using evidence and identifying causal links, e.g. in the design of a periscope.</i>	<i>Pupil can suggest possible limits to causal relationships.</i>
	c) Pupils explain confidence in findings	Report and presents findings from enquiries in oral and written forms such as displays and other presentation.	<i>Pupil can, with support, display and present key findings from enquiries orally and in writing.</i>	<i>Pupil can display and present key findings from enquiries orally and in writing, e.g. deciding how well classifications fit unfamiliar animals and plants.</i>	<i>Pupil can evaluate the best way of displaying and presenting key findings.</i>
Conclusions and Predictions	a) Pupils can analyse data	Report and present findings from enquiries, including explanations of, and degree of, trust in results.	<i>Pupil can, with support, indicate why some results may not be entirely trustworthy.</i>	<i>Pupil can, in conclusions, indicate how trustworthy they are, e.g. in relating brightness of bulb to voltage supplied.</i>	<i>Pupil can, in conclusions, indicate, if appropriate, why the results may not be entirely trustworthy.</i>
	b) Pupils can draw conclusions	Identify scientific evidence that has been used to support or refute ideas or arguments.	<i>Pupil can show how evidence supports a conclusion.</i>	<i>Pupil can identify how an idea is supported or refuted by evidence, e.g. selective breeding to produce animals or plants with desirable characteristics.</i>	<i>Pupil can suggest how factors other than evidence may support or oppose an idea.</i>

	c) Pupils can develop investigation further	Use test results to make predictions to set up further comparative and fair tests	<i>Pupil can suggest further relevant comparative or fair tests.</i>	<i>Pupil can use evidence to suggest further comparative or fair tests that would develop the investigation, e.g. in the design of rear view mirrors for cars.</i>	<i>Pupil can evaluate which further comparative or fair tests would be particularly useful.</i>
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Big Idea	Progression Statement	Working Towards Expectations	Meeting Expectations	Exceeding Expectations
Physics				
1) There are contact and non-contact forces ; these affect the motion of objects.	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	<i>Describe the effect of gravity on unsupported objects.</i>	<i>Explain that gravity causes objects to fall towards Earth.</i>	<i>Recognise that gravity acts between all masses, e.g. the Sun and the Earth.</i>
	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces	<i>Recognise that motion may be resisted by forces.</i>	<i>Describe how motion may be resisted by air resistance, water resistance or friction.</i>	<i>Identify ways in which forces that oppose motion may be useful (e.g. bicycle handlebar grips) or a nuisance (e.g. bicycle chain).</i>
	Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	<i>Recognise that simple machines transfer force.</i>	<i>Describe how some devices may turn a smaller force into a larger one.</i>	<i>Explain, with reference to everyday contexts, why a force multiplier might be useful.</i>
2) Day, night, month, seasonal change & year are caused by the position and movement of the Earth	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system	<i>Recognise that the planets move, relative to the Sun.</i>	<i>Draw a diagram or use a model to describe planetary orbits.</i>	<i>Identify that the further out a planet is, the longer its orbit is around the Sun.</i>
	Describe the movement of the Moon relative to the Earth	<i>Recognise that the Moon moves relative to the Earth.</i>	<i>Draw a diagram or use a model to describe the Moon's orbit around the Earth.</i>	<i>Relate the Moon's orbit of the Earth to the Earth's orbit of the Sun.</i>
	Describe the Sun, Earth and Moon as approximately spherical bodies	<i>Sketch the outlines of the Sun, Earth and Moon.</i>	<i>Describe the Sun, Earth & Moon as spheres.</i>	<i>Recognise that many heavenly bodies are approximately spherical.</i>

	Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	<i>Relate day and night to the apparent position of the Sun.</i>	<i>Use a diagram or model to explain why the Sun seems to travel across the sky, and what causes day and night.</i>	<i>Explain the effect of a planet in the solar system rotating at a different rate to Earth.</i>
3) Light & sound can be reflected & absorbed and enable us to see & hear	Recognise that light appears to travel in straight lines	<i>Recognise that light travels from one point to another.</i>	<i>Represent light using straight line ray diagrams.</i>	<i>Recognise that even when light changes in direction, the path is still continuous.</i>
	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>Recognise that some objects reflect light.</i>	<i>Draw diagrams using straight lines showing light travelling to the eye.</i>	<i>Draw diagrams using straight lines showing light reflecting off objects and into the eye.</i>
	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	<i>Describe how light travels from light sources to our eyes.</i>	<i>Explain how we can see an object by referring to light travelling into the eye.</i>	<i>Refer to the idea that some objects may be better reflectors than others.</i>
	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	<i>Relate the shape of shadows to the shape of the object that makes them.</i>	<i>Draw a diagram showing an object, shadow and light to relate object shape to shadow shape.</i>	<i>Use a diagram to explain that although a shadow is the same shape as the object, it may not be the same size.</i>



National Curriculum Objective	Upper Key Stage 2 Year 5/6
Play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control and expression	<p>Sing in tune with awareness of others.</p> <p>Perform simple melodic and rhythmic parts with awareness of others.</p> <p>Improvise repeated patterns growing in sophistication.</p> <p>Sing songs from memory with accurate pitch.</p> <p>Maintain a simple part within a group.</p> <p>Understand the importance of pronouncing the words in a song well.</p> <p>Show control in voice.</p> <p>Play notes on instruments with care so they sound clear.</p> <p>Perform with control and awareness of what others in the group are singing or playing.</p> <p>Create songs with an understanding of the relationship between lyrics and melody.</p> <p>Maintain my own parts with awareness of how the different parts fit together and the need to achieve an overall effect.</p> <p>Breathe well and pronounce words, change pitch and show control in singing.</p> <p>Perform songs with an awareness of the meaning of the words.</p> <p>Hold a part in a round.</p> <p>Perform songs in a way that reflects their meaning and the occasion.</p> <p>Sustain a drone or melodic ostinato to accompany singing. Play an accompaniment on an instrument (e.g. glockenspiel, bass drum or cymbal).</p> <p>Perform significant parts from memory and from notations with awareness of my own contribution.</p> <p>Refine and improve my own work.</p> <p>Sing or play from memory with confidence, expressively and in tune.</p> <p>Perform alone and in a group, displaying a variety of techniques.</p> <p>Take turns to lead a group.</p> <p>Sing a harmony part confidently and accurately.</p>

<p>Improvise and compose music for a range of purposes using the inter-related dimensions of music</p>	<p>Compose and perform melodies and songs (including using ICT).</p> <p>Use sound to create abstract effects.</p> <p>Recognise and create repeated patterns with a range of instruments. Create accompaniments for tunes.</p> <p>Use the venue and sense of occasion to create performances that are well appreciated by the audience.</p> <p>Compose by developing ideas within musical structures.</p> <p>Improvise melodic and rhythmic phases as part of a group performance.</p> <p>Improvise within a group.</p> <p>Improvise melodic and rhythmic material within given structures. Show thoughtfulness in selecting sounds and structures to convey an idea.</p> <p>Create my own musical patterns.</p> <p>Use a variety of different musical devices including melody, rhythms, and chords.</p>
<p>Use and understand staff and other musical notations</p>	<p>Know and use standard musical notation of crotchet, minim and semibreve.</p> <p>Indicate how many beats to play in own compositions and when reading music.</p> <p>Read the musical stave and can work out the notes, EGBDF and FACE.</p> <p>Use of a variety of notation when performing and composing. Compose music for different occasions appropriate musical devices.</p> <p>Use a range of words to help describe music. (e.g. pitch, duration, dynamics, tempo, timbre, texture, and silence.</p> <p>Describe music using musical words and use this to identify strengths and weaknesses in music.</p>
<p>Develop an understanding of the history of music.</p>	<p>Understand the different cultural meanings and purposes of music, including contemporary culture.</p> <p>Explain how different venues and occasions vary own performances.</p> <p>Notice and explore how music reflects time, place and culture. Understand and express opinions on the different cultural meanings and purposes of music, including contemporary cultural.</p>



National Curriculum Objective		Upper Key Stage 2
Working artistically	Creatively explore and develop ideas	<p>Engage in open ended research and exploration in the process of initiating and developing their own personal ideas Confidently use sketchbooks for a variety of purposes including: recording observations; developing ideas; testing materials; planning and recording information.</p> <p>Confidently investigate and exploit the potential of new and unfamiliar materials Use their acquired technical expertise to make work which effectively reflects their ideas and intentions. Independently develop a range of ideas which show curiosity, imagination and originality Systematically investigate, research and test ideas and plans using sketchbooks and other appropriate approaches.</p>
	Evaluate and analyse creative works.	<p>Regularly reflect upon their own work, and use comparisons with the work of others (pupils and artists) to identify how to improve.</p> <p>Regularly analyse and reflect on their progress taking account of what they hoped to achieve.</p> <p>Provide a reasoned evaluation of both their own and professionals' work which takes account of the starting points, intentions and context behind the work</p>
	Learn about great artists, architects and designers in history.	<p>Describe the artwork of artists</p> <p>Explore the roles and purposes of artists, craftspeople and designers working in different times and cultures.</p> <p>Use work of artists to create own pieces</p> <p>Analyse the different elements of an artist's work and how</p> <p>Compare their own art work against the artist's own.</p> <p>Evaluate the successfulness of their work in comparison to the artist's intention</p> <p><u>Artist ideas:</u></p> <p>David Hockney, Tracey Emin, Picasso, Jim Dine (print / monoprinting)</p> <p>Picasso, Duchamp (movement/ layering)</p> <p>Pop Art to represent popular objects from current culture (Andy Warhol)</p>

<p><i>Developing Skills & Techniques</i></p>	<p>Create sketch books to record their observations and use them to review and revisit ideas</p> <p>To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]</p>	<p>Printing</p> <p>Create printing blocks by simplifying an initial sketch book idea</p> <p>Use relief or impressed method</p> <p>Create prints with three overlays</p> <p>Work into prints with a range of media e.g. pens, colour pens and paints</p> <p>Create polystyrene printing blocks to use with roller and ink</p> <p>Explore monoprinting</p> <p>Explore Intaglio (copper etching) using thick cardboard etched with sharp pencil point</p> <p>Experiment with screen printing</p> <p>Design and create motifs to be turned into printing block images</p> <p>Investigate techniques from paper printing to work on fabrics</p>
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