

Incredible Inventors – Year 3/4 Spring

Subject	Skills and Objectives	Possible activities
English		'The Shirt Machine' - animation 'The Coat' by Julie Hunt 'Red Miss Take est.' - animation Wallace and Gromit Wing it - Inventors Shed
Maths enrichment	Estimate and measure metres, centimetres and millimetres.	Shadow investigation – changing length of shadows. Leonardo da Vinci – Vetruvian Man – length of limbs
Science	<u>Light</u> <ul style="list-style-type: none"> • recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces • <input type="checkbox"/> recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • <input type="checkbox"/> recognise that shadows are formed when the light from a light source is blocked by a solid object. • <input type="checkbox"/> find patterns in the way that the size of shadows change. <u>Sound</u> <ul style="list-style-type: none"> • identify how sounds are made, associating some of them with something vibrating. • recognise that vibrations from sounds travel through a medium to the ear. • <input type="checkbox"/> find patterns between the pitch of a sound and features of the object that produced it. • <input type="checkbox"/> find patterns between the volume of a sound and the strength of the vibrations that produced it. • recognise that sounds get fainter as the distance from the sound source increases. <u>Electricity</u> <ul style="list-style-type: none"> • identify common appliances that run on electricity. 	Light - plan experiments to investigate the effect of placing solid objects in the path of a light source – shadows. Investigate what happens when light is directed at a shiny surface. Sound – Rice on a drum – vibrations. Use elastic bands to design and make musical instruments which create sounds of different pitch. Plan an experiment to investigate the effect of distance on the loudness of sound.

	<ul style="list-style-type: none"> construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit recognise some common conductors and insulators, and associate metals with being good conductors. 	<p>Electricity – investigate circuits – effect of switches, buzzers.</p> <p>Plan an experiment to test a range of materials in terms of insulator/conductor. (see computing).</p>
History	<ul style="list-style-type: none"> know and understand the history of these islands as a coherent, chronological narrative, from the earliest times to the present day: how people's lives have shaped this nation and how Britain has influenced and been influenced by the wider world know and understand significant aspects of the history of the wider world: the nature of ancient civilisations; the expansion and dissolution of empires; characteristic features of past non-European societies; achievements and follies of mankind understand the methods of historical enquiry, including how evidence is used rigorously to make historical claims, and discern how and why contrasting arguments and interpretations of the past have been constructed 	Investigate the invention of electricity and the light bulb and their influence on life in Britain and the wider world.
Geography		
PSHCE	To make children aware of outcomes of lifestyle choices that can affect their health. (drugs, alcohol, tobacco).	<p>Explore effect of drugs on health.</p> <p>Safety around medical drugs.</p> <p>Resisting peer pressure.</p> <p>Assessing risk.</p>
Computing	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and 	<p>Squishy circuits.</p> <p>Lego WeDo – Follow instructions to create a range of models. Program the models to move in different ways using different buttons.</p>

	<p>to detect and correct errors in algorithms and programs</p>	
ART	<ul style="list-style-type: none"> • to create sketch books to record their observations and use them to review and revisit ideas • 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] • about great artists, architects and designers in history. 	<p>Build up a biography of Leonardo da Vinci. Explore some of his work via internet.</p>
DT	<ul style="list-style-type: none"> • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • generate, develop, model and communicate ideas through discussion, annotated sketches and diagrams. • Understand and use electrical systems in their products. • Apply their understanding of computing to program, monitor and control their products. 	<p>Use gears, pulleys, cams, levers with Lego WeDo to create set models and their own creations.</p>
PE	<p><u>Swimming and water safety</u></p> <ul style="list-style-type: none"> • swim competently, confidently and proficiently over a distance of at least 25 metres • use a range of strokes effectively [for example, front crawl, backstroke and breaststroke] • perform safe self-rescue in different water-based situations. <p><u>Games</u></p> <ul style="list-style-type: none"> • use running, jumping, throwing and catching in isolation and in combination 	<p>Weekly swimming tuition</p> <p>Delivery by Sports Coach</p>

	<ul style="list-style-type: none"> play competitive games, modified where appropriate and apply basic principles suitable for attacking and defending take part in outdoor and adventurous activity challenges both individually and within a team <p>Gymnastics</p> <ul style="list-style-type: none"> Develop flexibility, strength, technique, control and balance. Compare their performances with previous ones and demonstrate improvement to achieve their personal best. 	Gymnastics related to machines and inventions ((Mr O ' Dea GS HS))
Music	Understand and explore how music is created produced and communicated (pitch duration, dynamics, timbre, texture, structure and some notation)	Investigate the dimensions and compose.
MFL	Understand and respond to spoken and written French and speak with increasing confidence and fluency.	'Je me presente'- understand and use set phrases to talk about self and ask for personal information, use numbers 12 – 21, understand and use days of week, weather phrases. Compare the ways in which they and other people celebrate festivals.

Revolutionary Railways – Year 3/4 Spring

Subject	Skills and Objectives	Possible activities
English	Literacy - Opportunities to write for a range of purposes and audiences. Writing in the first person. Assess effectiveness of partners writing	Railway poetry- 'From a railway carriage' R.L Stephenson and 'Nightmail' W.H Orden
Maths enrichment		Create a time table linked to the train journey (numeracy).
Science	Forces and Magnets <ul style="list-style-type: none"> • Compare how things move on different surfaces • Notice that some forces need contact between two objects, but magnetic forces can act at a distance • Observe how magnets attract or repel each other and attract some materials and not others • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Describe magnets as having two poles • Predict whether two magnets will attract or repel each other, depending on which poles are facing. 	Use toy trains to investigate magnetism.
History	A study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066 A significant turning point in British history, for example, the first railways or the Battle of Britain	Timeline of George Stephenson to present day. True or False facts linked to George Stephenson and invention of railway. Comparison of present day/historical railway holidays. Evolution of trains
Geography	Locational knowledge - understand the place played by the railway system on the development of standardised time, the development of the Greenwich Meridian and time zones.	Timeline of his life and development of the steam engine and the Rocket. Link to locality. Identify key locations linked to George Stephenson.

		<p>Evolution of trains (turning point in British history)(Dynamo Roadshow within flips) and map of railway lines in UK before and after.</p> <p>Tourism and railways. Compare present day holiday locations with those in ancient history and those in Victorian times and present day, focus on impact of transport development on holiday destinations.</p>
PSHCE	To make children aware of outcomes of lifestyle choices that can affect their health. (drugs, alcohol, tobacco).	<p>Explore effect of drugs on health. Safety around medical drugs. Resisting peer pressure. Assessing risk.</p>
Computing	<ul style="list-style-type: none"> • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	<p>Create a train maze game using Scratch:</p> <ul style="list-style-type: none"> • Create background • Create train character • Add control to character • Add rules to character to stay on track. • Add baddies • Add collectables • Add sounds • Add points • Add lives
ART	Improve their mastery of art and design techniques.	<p>Design ticket for train journey. Design a rail safety notice for railway crossing. Make a moving structure. Study the sculpter/artist Alberto Giacometti.</p>

		Create our own sculptures of railway workers.
DT	<p>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 and prototypes.</p> <p>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, according to their functional properties and aesthetic qualities.</p> <p>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. Understand how key events and individuals in design and technology have helped shape the world.</p> <p>Technical Knowledge Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products. Understand and use electrical systems in their products apply their understanding of computing to program, monitor and control their products.</p>	Build and make stable structures using various materials. Build structures with moving parts.
PE	<p><u>Swimming and water safety</u> swim competently, confidently and proficiently over a distance of at least 25 metres use a range of strokes effectively [for example, front crawl, backstroke and breaststroke] perform safe self-rescue in different water-based situations.</p> <p><u>Games</u></p>	

	<p>use running, jumping, throwing and catching in isolation and in combination play competitive games, modified where appropriate and apply basic principles suitable for attacking and defending take part in outdoor and adventurous activity challenges both individually and within a team</p> <p>Gymnastics Develop flexibility, strength, technique, control and balance. Compare their performances with previous ones and demonstrate improvement to achieve their personal best.</p>	
Music	<ul style="list-style-type: none"> Play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control and expression Improvise and compose music for a range of purposes using the inter-related dimensions of music 	Use percussion to compose and perform a railway piece.
MFL	<ul style="list-style-type: none"> Listen attentively to spoken language and show understanding by joining in and responding. Explore the patterns and sounds of language through songs and rhymes and link the spelling, sound and meaning of words Develop accurate pronunciation and intonation so that others understand when they are reading aloud or using familiar words and phrases 	Number 13-20 Days of the week