Sonar Curriculum

Y6 Full Steam Ahead! Learning Sequence

Synopsis: Children use the stimulus of railways and railway journeys to explore the topography of the UK. They may choose to read *The Railway Children* to explore classic literary heritage. Using the language and features of this classic text or similar, children create their own narrative, interweaving character, setting and plot. They could also write a recount of a train journey.

In **Geography**, children use a range of fieldwork skills to investigate topography of the UK and how this has changed over time.
In **Art**, children enhance their story using digital media, eg sound, video or animation.
In **D&T**, children use mechanical systems to create a locomotive.
In **Computing**, use algorithms to create a locomotive ride.

Curriculum areas: English, Geography, Art, D&T and Computing
Length of theme: 6 weeks

English

Write a narrative, skillfully interweaving character, setting and plot.

English Objectives

Reading Comprehension

- Increase familiarity with wide range of myths, legends, traditional stories, modern fiction, fiction from literary heritage and books from other cultures
- Checking that the book makes sense to them, discuss and explore meanings of words in context
- Infer characters' feelings, thoughts and motives and justify using evidence
- Predict what might happen from details stated and implied
- Evaluate how authors use language and consider the effect on the reader

Grammar & Punctuation

English Learning Sequence

- A suggested text for this unit is *The Railway Children*, though schools may choose another that reflects our literary heritage. It might be helpful to select a text that has also has a film version, so that children can draw comparisons eg characterisation, setting description
- Discuss the fact the chosen text is considered part of our literary heritage - which other books are considered 'classics' and why? Have they read any of them and, if so, would they recommend them to others?
- Share the book as a class text
- Ask questions which require children to make predictions and draw inferences about characters, feelings, thoughts and motives

- Use perfect form to indicate time/cause

Language & Vocabulary

- Develop characters, settings and atmosphere using language and vocabulary from reading/books
- Integrate dialogue to advance action and convey character

Text Structure & Features

- Summarise and present familiar stories in their own words
- In fiction, consider how authors develop character and setting
- Be exposed to a wide range of books including fiction from literary heritage

Plan, Draft, Edit & Evaluate

- Use dictionaries to check the spelling and meaning of words
- Identify audience and purpose of writing
- Note and develop initial ideas drawing from reading
- Select appropriate grammar and punctuation and understand how these can change/enhance meaning
- Assess effectiveness of own and others' writing
- Propose changes to grammar, punctuation and vocabulary to enhance meaning/effectiveness
- Ensure correct subject and verb agreement when using singular and plural, distinguishing between the language of speech and writing and choosing the appropriate register (formal/informal)

In addition to the above, teachers should apply general spelling rules and guidance, as listed in English Appendix 1 and ensure concepts and skills outlined in **English Appendix 2** are also addressed.

- Check the book makes sense to the pupils, discussing unfamiliar words and concepts, some of which may relate to when and where the book is set
- Discuss the characters, creating a profile for each using evidence from the text. Encourage use of higher-level vocabulary, using dictionary and thesaurus to improve
- Draw a storyboard of the plot, identifying pivotal moments in story
- If using *The Railway Children*, 'zoom in' on the section where the children avert a disaster after the landslide
- Compare how this part is portrayed in the book versus the film The same activity would be appropriate for other texts that have a film version of the story
- Read Writing Example and pick out features used to set scene, build tension etc. Magpie examples and add own ideas and notes
- Collate other examples from 'real' books where author creates drama and tension to create a bank of ideas and techniques
- If using *The Railway Children*, watch clip from film where children stop the train and write notes as they watch. Consider how the film helps create tension eg use of perspective, music
- Plan own version of this scene, drawing on book and film for inspiration
- Consider dialogue – what would the characters say to each other? How would they say it? How can we use dialogue to reflect urgency?
- Magpie effective verbs, adverbs and adverbials for dialogue, considering the era of the book
- Write first draft then peer asses
- Edit, improve and redraft to produce final version

English

Write a recount of a train journey eg Flying Scotsman, linking to Geography.

Sonar Curriculum

English Objectives

Comprehension

- Continue to read/discuss an increasingly wide range of challenging stories, poems, plays, non-fiction and reference books, myths, legends and fairy stories
- Evaluate authors' use of figurative language and consider effect on the reader

Grammar & Punctuation

- Use perfect form to indicate time/cause
- Use wider range of cohesive devices

Text Structure & Features

- Reflect understanding of audience and purpose through choice of grammar, vocabulary and structure

Plan, Draft, Edit & Evaluate

- Use dictionaries to check the spelling and meaning of words
- Identify audience and purpose of writing
- Note and develop initial ideas drawing from reading
- Select appropriate grammar and punctuation and understand how these can change/enhance meaning
- Assess effectiveness of own and others' writing
- Propose changes to grammar, punctuation and vocabulary to enhance meaning/effectiveness
- Ensure correct subject and verb agreement when using singular and plural, distinguishing between the language of speech and writing and choosing the appropriate register (formal/informal)

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English Learning Sequence

- Draw on children's own experiences of train travel and discuss journeys they have been on – what did they see, hear, feel?
- Read a range of poems and extracts which describe train journeys eg *From a Railway Carriage* (Robert Louis Stevenson), *Night Mail* (W H Auden), the opening of *The Wolves of Willoughby Chase* (Joan Aiken) or the journey to Hogwarts in *Harry Potter and the Philosopher's Stone* (JK Rowling)
- Discuss the above – how does the writer set the scene and draw the reader in to what is happening? How does the language of the text contribute to that – identity examples of figurative language
- Share famous routes with children eg Flying Scotsman from London to Edinburgh
- Plot routes on map of UK, looking at which regions the train would go through. What would you see out of the window on journey? How would the landscape change? How would you describe the landscape?
- Using images, photographs and videos, share the journey from London to Edinburgh – imagine you were on the train
- Collect key words and phrases to recount the trip, focusing on vivid description of landscape and cohesive devices – can children use a wide range?
- Plan recount of trip as if they had taken it themselves eg *Leaving the grey, drab buildings of London behind, we were soon in open countryside.*
- Edit and redraft to produce final copy of recount

Sonar Curriculum

Science

Develop their understanding of electrical circuits.

Working Scientifically

- Independently decide which observations to make
- Plan different types of scientific enquiry
- Identify scientific evidence that has been to used to support/refute arguments
- Record date/results of increasing complexity in a range of ways
- Record and present findings in oral and written form
- Recognise and control variables where necessary
- Explain which variables need to be controlled and why
- Take measurements using a wider range of scientific equipment with accuracy and precision
- Use test results to make predictions

Scientific Knowledge

- Associate the brightness of a lamp or the volume of a buzzer with the number of voltage of cells used in the circuit
- Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- Use recognised symbols when representing a simple circuit in a diagram

Science Learning Sequence

- Recap what children remember about electricity from Y4. Mind map ideas and record understanding so far
- Recap symbols and develop understanding of these so children can apply to scientific diagrams
- Explain that they are going to invent a new product that uses electricity to work eg lamp lights up; buzzer sounds
- Allow children time to experiment with electrical circuit components, recording these using correct symbols
- Set challenges relating to circuits for children to consider for their invention eg more than bulb? A louder buzzer? Flashing lights?
- Generate scientific questions about electricity and suggest which tests they could carry out to find answers
- Investigate the relationship between brightness of lamp/volume of buzzer with the number of cells used
- Independently decide what to record and how to record results, communicating findings scientifically
- Explain reasons for variations in how components function in a circuit using scientific language
- Present findings in range of way, including using diagrams and words

Geography

Use a range of fieldwork skills to investigate the topography of the UK and how this has changed over time.

Geography Objectives

Geography Learning Sequence

• Analyse geographical similarities and differences (regions of UK) and communicate geographical concepts in a wide variety of ways • Name and locate countries, cities and regions of the UK • Secure understanding of how and why the UKs human physical features, geographical regions, topographical features and land-use patterns have changed over time • Examine and explain key aspects of physical geography (rivers) • Examine and explain key aspects of human geography (settlement & land-use/economic activity) • Understand interaction between physical and human processes and features and how these change over time • Use digital mapping, 8-compass point, 4-6-digit grid references and Ordinance Survey maps • In a variety of ways, observe, record, measure and present human/physical features of local area using sketches, plans, graphs and digital technology	• A useful stimulus for this is *The Railway Children*, although alternative texts that feature railways and railway journeys would also be appropriate • Discuss where *The Railway Children* is set: London and Yorkshire. What do children already know about these places? • Use map of UK to identify and locate capital cities and key regions eg Yorkshire Dales, Lake District • Using key and symbols, identify the dominant topography of key areas, eg mountainous, forest, and label features such as rivers • 'Zoom in' on two contrasting areas eg London and Yorkshire Dales • Explore how these areas have changed over time and reasons for these changes eg land use, farming, motorways • Carry out a local topographical study using and applying previously-taught mapping skills eg compass directions, grid references, OS maps How has the local area changed over time? • Present findings in imaginative and engaging way, communicating geographically

Art

Enhance their story using digital media, eg sound, video or animation.

Art Objectives	Art Learning Sequence
• Enhance digital media by editing, including sound, video, animation and still images • Capture artistic processes in sketchbooks • Use wide range of artistic vocabulary to evaluate own work and communicate own ideas / comment on artworks • Master art/design techniques with a wide range of materials • Communicate ideas and comment on artworks using artistic language	• Watch film extracts from well-known text (links to literary heritage) eg *The Railway Children*, and consider how the director creates atmosphere to support the narrative eg camera angle, perspective, use of music • Discuss how children could bring their own writing to life using digital media. Mind map ideas and suggestions • Children work together to decide how they could make own video or animation of their writing – how would they go about this? Which software/hardware would they need to use?

	• Draw out a storyboard in sketchbooks, annotating with ideas for how to translate this into a short video eg using Movie Maker • Use software such as Movie Maker to bring their narrative to life • Use editing to perfect final product • Have a 'premiere' where other children are invited to come and watch the final movie • Consider famous artists and directors and research their work

D&T

Use mechanical or electrical systems to create a locomotive.

D&T Objectives	D&T Learning Sequence
• Communicate, generate and develop ideas drawing on other disciplines • Confidently take calculated risks to become innovative, resourceful and enterprising • Construct more complex structures by applying a range of strategies • Making connections to real/relevant problems, apply understanding of a wider range of mechanical systems • According to their functional properties and aesthetic qualities, select from and use a wide range of tools, equipment, materials and components accurately to make high quality prototypes • Generate own design criteria and critique ideas and products against these	• Study trains through the ages and how they have evolved from steam to electric • Explain that children's challenge is to design and make a moving locomotive as a children's toy • Investigate real examples of toy trains and how they move • Decide how they could make it move, considering a range of systems eg electrical, mechanical, pneumatic. Which would be best and why? • Use research to inform design criteria • Select from range of tools, materials and components to make their train prototype, evaluating and adapting throughout the process • Create high-quality prototype with a focus on functionality and aesthetics

Computing

Use algorithms to create a locomotive 'ride'.

Computing Objectives	Computing Learning Sequence
• 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 • Accurately manipulate a wide range of variables and various forms of input/output • Securely use logical reasoning to understand how algorithm work and detect and correct errors in algorithm in programs	• Build a sequence of instructions to control a device, app or game to simulate a fairground ride • Extend the code to control the speed of a motor • Extend the code to include a light sensor so the ride works in the dark