

# Scratch Stories.

Storytelling... with a twist!

## Introduction

Storytelling is something that captures the hearts and minds of all children. This workshop uses that to engage pupils in a day that not only inspires them to write their own story but to do so in a way that furthers their own learning and development in programming.

This enrichment day is covers both the Computing and English programmes of study at Key Stage 2, and many of the learning outcomes (particularly 1 – 5) are taken from the Upper Key Stage 2 Programme of Study for English.

The day starts with pupils recollecting their own favourite stories and sharing ideas with their peers about why those particular stories became their favourites. Pupils are encouraged to look for common features which appear in all stories, and in particular, “what makes a good story”. There is potential here for the day to be centred around a class reading book (if there is one) if the primary teacher wishes.

Pupils spend time in the first half of the day decomposing an existing interactive story and making various alterations to it. Once they become familiar with the idea of programming stories, pupils are encouraged to generate their own ideas for their own story in pairs or small groups. Various planning and storyboarding is carried out before pupils create their own interactive storybook. Time is left at the end of the day for pupils to test and debug their own the stories, whilst devising their own success criteria.

# Computing Programmes of Study Links

- 2.1. design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- 2.2. use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- 2.3. use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- 3.8. create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability

## Progression Pathway bands covered

ALG = Algorithms: Pink, Yellow, Orange, Blue

### Reference

PA1	Understands what an algorithm is and is able to express simple linear (non-branching) algorithms symbolically.
PA2	Understands that computers need precise instructions.
PA3	Demonstrates care and precision to avoid errors
YA2	Designs simple algorithms using loops, and selection i.e. if statements.
YA3	Uses logical reasoning to predict outcomes.
OA1	Designs solutions (algorithms) that use repetition and two-way selection i.e. if, then and else.
OA2	Uses diagrams to express solutions.
OA3	Uses logical reasoning to predict outputs, showing an awareness of inputs.

IT = Information Technology: Pink, Yellow, Orange

### Reference

PI5	Talks about their work and makes changes to improve it.
YI1	Uses technology with increasing independence to purposefully organise digital content.
YI2	Shows an awareness for the quality of digital content collected.

YI5	Talks about their work and makes improvements to solutions based on feedback received
OI3	Makes appropriate improvements to solutions based on feedback received, and can comment on the success of the solution.

P&D = Programming & Development: Pink, Yellow, Orange

## Reference

PP1	Knows that users can develop their own programs and can demonstrate this by creating a simple program in an environment that does not rely on text
PP2	Executes, checks and changes programs
PP3	Understands that programs execute by following precise instructions
YP1	Uses arithmetic operators, if statements, and loops, within programs.
YP2	Uses logical reasoning to predict the behaviour of programs
YP3	Detects and corrects simple semantic errors i.e. debugging, in programs.
OP1	Creates programs that implement algorithms to achieve given goals.

# Computational Thinking Strands

## AL – Algorithmic Thinking

Ref. Activity

- |    |   |
|----|---|
| A1 | Writing instructions that if followed in a given order (sequences) achieve a desired effect |
| A2 | Writing instructions that use arithmetic and logical operations to achieve a desired effect |

## AB - Abstraction

Ref. Activity

- |     |   |
|-----|---|
| Ab2 | Choosing a way to represent artefacts (whether objects, problems, processes or systems) to allow it to be manipulated in useful ways; |
|-----|---|

## EV – Evaluation

Ref. Activity

- |     |  |
|-----|--|
| E2  | Assessing whether an algorithm does the right thing (functional correctness);                          |
| E3  | Designing and running test plans and interpreting the results (testing);                               |
| E8  | Assessment of whether a system gives an appropriately positive experience when used (user experience); |
| E9  | Assessment of any of the above against set criteria;   |
| E15 | Assessing whether a solution meets the specification (criteria);                                       |

## GE – Generalisation

Ref. Activity

- |    |  |
|----|--|
| G1 | Identifying patterns and commonalities in problems, processes, solutions, or data.           |
| G2 | Adapting solutions or parts of solutions so they apply to a whole class of similar problems; |

## DE – Decomposition

Ref. Activity

- D1 Breaking down artefacts (whether objects, problems, processes, solutions, systems or abstractions) into constituent parts to make them easier to work with

## Learning Outcomes

1. To be able to identify the key components contained within a story
2. To be able to summarise and present story in their own words
3. To be able to generate and write down their ideas for a story quickly, both as an individual and as part of a small group
4. To be able to identify the key differences in developing electronic interactive stories and traditional paper-based books
5. To be able to modify an existing story
6. To be able to identify and explain the algorithm for an existing program
7. To be able to make modifications to an existing program
8. To be able to debug and make changes to an existing program
9. To be able to plan and design a new program to produce an interactive story
10. To be able to create and develop an interactive story using programmable elements
11. To be able to use loops, variables, broadcast messages, IF statements and sequential instructions within a program

# Session Overview

## SESSION 1

Session Content / Activity	Resources Used	Prog. Pathway	Comp. Thinking	Computing POS Link
Welcome & Introduction to the Digital Schoolhouse and routines, schedule for the day	DSH_WelcomeIntroduction.pptx			
Introduce 'stories' talk about the love of stories and imagination. How they inspire us. Then move into the starter activity asking pupils to consider their favourite story. Each pupil should take a moment to personally think of their own favourite and then share this with their partner. Encourage students to consider why the story is their favourite. Pupils should discuss the key aspects that made them 'love' the story with each other. Then create groups and ask each pair to share their reasons with the other. Do the two groups have similar criteria for what makes a good story?	Scratch Stories.pptx		G1,D1	2.1
Set the atmosphere and read the pupils a short story. A story has been suggested, but this may be a good opportunity to use a book that is being discussed with the pupils and their primary teacher back at their own school. It would be a good way to tie this in here. The primary teacher may wish to step in here and read an extract from the book. Alternatively some sites have been suggested which provide short online stories that could be selected instead.	Scratch Stories.pptx Links to online Short Stories.txt Lion and Mouse Story.docx Lion and Mouse Story.pdf		D1	2.1
After the story has been read ask the pupils to suggest the key elements. Discuss who the main characters were, the plot and the setting of the story.				
Move the discussion onto the similarities/differences between traditional stories on paper-based books and the potential benefits/differences with digital stories/books. Use slide 6.	Scratch Stories.pptx		G1, D1	3.8

Open the Great Fire of London scratch file and demo the program. Ask the pupils to use the story and try it for themselves. Encourage them to explore the script and work out how it is put together. Use this as an opportunity to judge the pupils existing skills with scratch – what do they know, how much can they alter independently.	Scratch Stories.pptx Fire of London.sb	<u>ALG</u> PA1, PA2, PA3, YA2, YA3, OA3 <u>IT</u> Y11 <u>P&amp;D</u> PP1, PP2, PP3, YP1, YP2, YP3 OP1	A1, A2, Ab2, E2, G2	2.1, 2.3
If required use slides 9 – 13 to help develop their skills. Tailor this section according to their needs and requirements. Introduce enough for them to be able to modify the story themselves.	Scratch Stories.pptx	<u>ALG</u> PA1, PA2, PA3, YA2, YA3, OA3 <u>P&amp;D</u> PP1, PP2, PP3, YP1, YP2, YP3 OP1	A1, A2, Ab2, E2, G2	2.2
Introduce the task on slide 14 – encourage pupils to complete the story	Scratch Stories.pptx Fire of London.sb			2.1, 2.2, 2.3, 3.8

## SESSION 2

Session Content / Activity	Resources Used	Prog. Pathway	Comp. Thinking	Computing POS Link
Complete the activity on slide 14 and move onto slide 15. Encourage pupils to modify the story based on their own creativity. Rather than demonstrating each skill and asking pupils to follow a series of guided steps, encourage them to try these out as a set of ‘challenges’ instead. Can they work out how to add sound, animation and alternative endings themselves?	Scratch Stories.pptx Fire of London.sb	<u>ALG</u> PA1, PA2, PA3, YA2, YA3, OA3 <u>P&amp;D</u> PP1, PP2, PP3, YP1, YP2, YP3 OP1	A1, A2, Ab2, E2, G2	2.1, 2.2, 2.3, 3.8
Encourage pupils to now begin to think of their own story. Give them a few minutes to explore the website suggested on slide 16 to look at existing stories.	Scratch Stories.pptx			2.1, 3.8
Enable pupils to access the two planning documents. They may begin in groups or work independently. Judge according to the nature of the class and the recommendation of the primary teacher. Allow them to brainstorm their ideas and set	Scratch Stories.pptx Planning templates.doc	<u>IT</u> PI5, YI1, YI2, YI5, OI3 <u>ALG</u> PA1, YA3, OA2	A1	2.1, 3.8

down rough notes and then discuss and refine these before setting their ideas down in detail. Encourage them to complete the planning documents in a fair amount of depth.	Planning storyboard.doc			
Move onto the Scratch environment and encourage pupils to create their own sprites and backgrounds and begin setting out their story in a linear fashion.	Scratch Stories.pptx	<u>IT</u> PI5, YI1, YI2, YI5, OI3  <u>ALG</u> PA1, PA2, PA3, YA2, YA3, OA2, OA3	A1, A2, Ab2, G1, G2	2.1, 3.8,

### SESSION 3

Session Content / Activity	Resources Used	Prog. Pathway	Comp. Thinking	Computing POS Link
Begin testing the story. Are all the components working? Now pupils should move onto slide 19 and modify their story to add animation and sound effects as well as interactivity.	Scratch Stories.pptx	<u>ALG</u>  OA3, YA3 <u>IT</u>  YI5, OI3 <u>P&amp;D</u>  PP2, YP2	E2, E3, E8, E9, 15	2.1, 2.3, 3.8
Leave enough time for pupils to test their stories. Once pupils access the "Peer Story Evaluation" worksheet, discuss with them the importance of selecting criteria for success. Four main criteria have been added, ask pupils to add two more of their own or to feel free to modify what's already there.	Scratch Stories.pptx Peer Story Evaluation.doc	<u>ALG</u>  OA3, YA3 <u>IT</u>  PI5, YI5, OI3	E2, E3, E8, E9, 15	2.1, 2.3, 3.8
Develop a system where pupils are able to circulate around the room to be able to work through each other's stories and complete the evaluation worksheet. Each pupil names their own worksheet with their own criteria and leaves it on their computer. As pupils move around the room they will work through their peer's story and complete evaluation sheet that has been left there. Encourage positive and critical feedback.	Scratch Stories.pptx Peer Story Evaluation.doc	<u>ALG</u>  OA3, YA3 <u>IT</u>  PI5, YI5, OI3	E2, E3, E8, E9, 15	2.1, 2.3, 3.8

Once pupils have returned to their seats, they will read the comments that have been left about their work. Do they feel the comments are justified? Is there room for improvement? As an extension activities if there is still time left in the day then allow the pupils to make further modifications to their work. Alternatively, this could be an activity that the primary teacher follows up with them upon their return back to school.

Scratch Stories.pptx

Peer Story  
Evaluation.doc

ALG

OA3, YA3  
IT

PI5, YI5, OI3

E2, E3, E8, E9,  
15, G1, G2, A1,  
A2

2.1, 2.3, 3.8

# Files/Resources

Filename	Resource Type	Purpose/Description
Character Resources	Sub-folder	Containing images for potential use
Fire London Resources	Sub-folder	Containing images for the Fire of London story as well as a pdf of flashcards outlining the story
Planning Templates	Sub-folder	Contains the Planning Storyboard & Planning template worksheets in .doc format
Scratch Files	Sub-folder	Contains sample scratch files to be used for demonstration purposes – can be made available for the students
Fire of London	Scratch source file	Interactive version of the Fire of London Story
Links to online Short Stories	Text file	A text file containing URL's of sites which provide free online short stories for pupils
Lion and Mouse Story.doc	Word Document	The Lion and Mouse Story as a word document – to be used as required
Lion and Mouse Story.pdf	PDF File	The Lion and Mouse Story as a pdf file – to be used as required
Peer Story Evaluation.doc	Worksheet	Evaluation worksheet to be completed by pupils
Scratch Stories.ppt	Presentation	PowerPoint presentation teaching resource
Scratch Support.doc	Information Sheet	Scratch commands that are useful in creating interactive stories
DSH_WelcomeIntroduction	Presentation	PowerPoint presentation containing key information for the day

PLEASE NOTE: The activities outlined in this workshop pack are a suggested outline of how the workshop can be delivered. It is envisaged that teachers will adapt the resources and the organisation of them according to the needs of their class.