

Year 4 Computing Medium Term Planning

Year 4	Information Technology	Digital Literacy/e-Safety	Computer Science
Autumn 1 Link to further resources: Computing systems and networks <i>The Internet</i> Unplugged activities.	- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. - 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.	
	Key Skills/Knowledge	Key Skills/Knowledge	Key Skills/Knowledge
	- I can describe the internet as a network of networks. - I can demonstrate how information is shared across the internet. - I can discuss why a network needs to be protected. - I can describe networked devices and how they connect. - I can explain that the internet is used to provide many services. - I can recognise that the World Wide Web contains websites and web pages.	- I can use technology safely and respectfully. - I can keep my personal login information safe. - I can keep my personal details private. - I can safely access the WWW. - I can report anything unusual on the WWW to an adult. - I can report suspicious activity or websites to an adult.	

- I can explain the types of media that can be shared on the WWW.
- I can describe where websites are stored when uploaded to the WWW.
- I can describe how to access websites on the WWW.
- I can explain what media can be found on websites.
- I can recognise that I can add content to the WWW.
- I can explain that internet services can be used to create content online.
- I can explain that websites and their content are created by people.
- I can suggest who owns the content on websites.
- I can explain that there are rules to protect content.
- I can explain that not everything on the World Wide Web is true.
- I can explain why some information I find online may not be honest, accurate, or legal.

Opportunities for the arts:

Artists publish and find inspiration online.

- I know that some information on the WWW can be harmful, offensive or illegal.
- I know that there are rules to protect content on the WWW.
- I can use the term 'fake news' and I can recognize fake news on the WWW.

	Artist: Charley Harper Task: Research the artist online (Google Arts and Culture) and create geometric animal art. Create a physical piece and a digital piece - which do you prefer and why? The Internet as a Gallery Explore online galleries and artist websites. Consider staying safe when finding images. Question: <i>How do artists show their work to the world?</i>		
Autumn 2 Link to further resources: Creating media Audio editing Hardware/Program: Podcast equipment Audacity	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	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Key Skills/Knowledge	Key Skills/Knowledge	Key Skills/Knowledge
	I can identify the input and output devices used to record and play sound.	I can use technology safely and respectfully.	

- I can use a computer to record audio.
- I can explain that the person who records the sound can say who is allowed to use it.
- I can re-record my voice to improve my recording.
- I can inspect the soundwave view to know where to trim my recording.
- I can discuss what sounds can be added to a podcast.
- I can explain how sounds can be combined to make a podcast more engaging.
- I can save my project so the different parts remain editable
- I can plan appropriate content for a podcast.
- I can record content following my plan.
- I can review the quality of my recordings.
- I can improve my voice recordings.

Opportunities for the arts:

Sound as an art form

Artist: Walter Murch

Task: Create a soundscape for your own artwork or writing (when read aloud).

Children:

- collect sounds

- I can keep my personal login information safe.
- I can keep my personal details private.
- I can safely access the WWW.
- I can report anything unusual on the WWW to an adult.
- I can report suspicious activity or websites to an adult.
- I am developing an understanding of copyright laws.
- I understand that there is ownership of content on the WWW.

	• layer effects • create atmosphere • compose soundscapes Art question: <i>Can sound paint a picture in our minds?</i> Link beautifully with: • rainforest art • seascapes • local environment projects		
Spring 1 Link to further resources: Creating media <i>Photo editing</i> Programs: Google Photos Photopea	• 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	• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Key Skills/Knowledge	Key Skills/Knowledge	Key Skills/Knowledge
	• I can identify changes that we can make to an image. • I can explore how images can be changed in real life. • I can explain the effect that editing can have on an image. • I can explain what has changed in an edited image. • I can change the composition of	• I can use technology safely and respectfully. • I can keep my personal login information safe. • I can keep my personal details private. • I can safely access the WWW. • I can report anything unusual on the WWW to an adult.	

an image by selecting parts of it.

- I can consider why someone might want to change the composition of an image.
- I can talk about changes made to images.
- I can choose effects to make my image fit a scenario.
- I can explain why my choices fit a scenario.
- I can identify how an image has been retouched.
- I can give examples of positive and negative effects that retouching can have on an image.
- I can choose appropriate tools to retouch an image.
- I can sort images into 'fake' or 'real' and explain my choices.
- I can combine parts of images to create new images.
- I can talk about fake images around me.
- I can consider the effect of adding other elements to my work.
- I can compare the original image with my completed publication.
- I can evaluate the impact of my publication on others through feedback.

Opportunity for the arts:
Photography as an artistic medium

- I can report suspicious activity or websites to an adult.
- When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it.
- I can describe ways in which people might make themselves look different online.

	Artist: David Hockey Task: Edit photographs to create digital artwork inspired by David Hockney's photo collages.		
Spring 2 Link to further resources: Data and information <i>Data logging</i> Programs/Hardware: Google Science Journal Data Loggers loan from ICT in Schools	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	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Key Skills/Knowledge	Key Skills/Knowledge	Key Skills/Knowledge
	- I can choose a data set to answer a given question. - I can suggest questions that can be answered using a given data set. - I can identify data that can be gathered over time. - I can explain what data can be collected using sensors. - I can use data from a sensor to answer a given question. - I can identify that data from sensors can be recorded. - I can recognise that a data logger collects data at given points.	- I can use technology safely and respectfully. - I can operate a data logger. - I can use a data logging app on an iPad.	

- I can identify the intervals used to collect data.
- I can talk about the data that I have captured.
- I can view data at different levels of detail.
- I can sort data to find information.
- I can explain that there are different ways to view data.
- I can propose a question that can be answered using logged data.
- I can plan how to collect data using a data logger.
- I can use a data logger to collect data.
- I can interpret data that has been collected using a data logger.
- I can draw conclusions from the data that I have collected.
- I can explain the benefits of using a data logger.

Opportunities to link with the arts:

Data Logging

Recording changes over time

Artist: Claude Monet

Task: Record changes in light or weather in a specific area in the school

	grounds before producing observational artwork.		
Summer 1 Link to further resources: Programming A <i>Repetition in shapes</i> Program: Logo		• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	• 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.
	Key Skills/Knowledge	Key Skills/Knowledge	Key Skills/Knowledge
		• I can use technology safely and respectfully. • I can keep my personal login information safe. • I can keep my personal details private.	• I can program a computer by typing commands. • I can explain the effect of changing a value of a command.

		• I can access Logo on a Chromebook.	• I can create a code snippet for a given purpose. • I can use a template to draw what I want my program to do. • I can write an algorithm to produce a given outcome. • I can test my algorithm in a text-based language. • I can identify repetition in everyday tasks. • I can identify patterns in a sequence. • I can use a count-controlled loop to produce a given outcome. • I can identify the effect of changing the number of times a task is repeated. • I can predict the outcome of a program containing a count-controlled loop. • I can choose which values to change in a loop. • I can identify 'chunks' of actions in the real world. • I can use a procedure in a program. • I can explain that a computer can repeatedly call a procedure. • I can design a program that includes count-controlled loops.
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			- I can make use of my design to write a program. - I can develop my program by debugging it. Opportunities for the arts: Pattern through code Artist: M C Escher Task: Generate repeating geometric artwork using loops. Look into MakeCode.com
Summer 2 Link to further resources: Programming B <i>Repetition in games</i> Program: Scratch 3.0		Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	- 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.
	Key Skills/Knowledge	Key Skills/Knowledge	Key Skills/Knowledge

		• I can use technology safely and respectfully. • I can keep my personal login information safe. • I can keep my personal details private. • I can access Scratch 3.0 on a Chromebook.	• I can list an everyday task as a set of instructions including repetition. • I can predict the outcome of a snippet of code. • I can modify a snippet of code to create a given outcome. • I can modify loops to produce a given outcome. • I can choose when to use a count-controlled and an infinite loop. • I can recognise that some programming languages enable more than one process to be run at once. • I can choose which action will be repeated for each object. • I can explain what the outcome of the repeated action should be. • I can evaluate the effectiveness of the repeated sequences used in my program. • I can identify which parts of a loop can be changed. • I can explain the effect of my changes. • I can re-use existing code snippets on new sprites. • I can evaluate the use of repetition in a project.
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			• I can select key parts of a given project to use in my own design. • I can develop my own design explaining what my project will do. • I can refine the algorithm in my design. • I can build a program that follows my design. • I can evaluate the steps I followed when building my project. Opportunities for the arts: Animated repeating patterns Artist: Bridget Riley Task: Create looping animations in Scratch 3.0 inspired by optical artist Bridget Riley's work.
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GDS Opportunities	• Children use photo editing software to crop photographs and add effects. • Children copy and paste the graph/bar chart and use it in a word processing document? • Children use animation in presentations.
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