

Year 6 Computing Medium Term Planning

Year 6	Information Technology	Digital Literacy/e-Safety	Computer Science
Autumn 1 Link to further resources: Computing systems and networks <i>Communication</i> Apps/Activities: The Internet 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 Knowledge/Skills	Key Knowledge/Skills	Key Knowledge/Skills
	- I can complete a web search to find specific information. - I can refine my search. - I can compare results from different search engines. - I can explain why we need tools to find things online. - I can recognise the role of web crawlers. in creating an index - I can relate a search term to the search engine's index.	- I can use appropriate search terms safely on an appropriate search engine. - I can evaluate results from search engines for relevance. - I understand that not everything I see or read on the internet is true. - I can use technology safely and responsibly. - I can log onto different apps, devices and websites by using specific login information.	

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| | <ul style="list-style-type: none"> • I can explain that search results are ordered. • I can explain that a search engine follows rules to rank relevant pages. • I can suggest some of the criteria that a search engine checks to decide on the order of results. • I can describe some of the ways that search results can be influenced. • I can recognise some of the limitations of search engines. • I can explain how search engines make money. • I can explain the different ways in which people communicate. • I can identify that there are a variety of ways of communicating over the internet. • I can choose methods of communication to suit particular purposes. • I can compare different methods of communicating on the internet. • I can decide when I should and should not share. | <ul style="list-style-type: none"> • I can keep my private and personal information safe. • I can report any unusual or suspicious activity to an adult. | |
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	- I can explain that communication on the internet may not be private. Opportunities for the arts Artists collaborate and share work digitally. Artist: David Hockney Task: Create digital artwork in the style of David Hockney. Use a shared platform (Google Slides/Forms/Docs) to share and peer-review the work. Global Creative Collaboration - Explore how artists collaborate online. - Create shared digital projects. - Question: <i>How can artists work together from different places?</i>		
Autumn 2 Link to further resources: Creating media 3D Modelling Program: Tinkercad	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,	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	

	evaluating and presenting data and information		
	Key Knowledge/Skills	Key Knowledge/Skills	Key Knowledge/Skills
	• I can add 3D shapes to a project. • I can view 3D shapes from different perspectives. • I can move 3D shapes relative to one another. • I can resize an object in three dimensions. • I can lift/lower 3D objects. • I can recolour a 3D object. • I can rotate objects in three dimensions. • I can duplicate 3D objects. • I can group 3D objects. • I can accurately size 3D objects. • I can show that placeholders can create holes in 3D objects. • I can combine a number of 3D objects. • I can analyse a 3D model. • I can choose objects to use in a 3D model. • I can combine objects in a design. • I can construct a 3D model based on a design.	• I can use technology safely and responsibly. • I can log onto different apps, devices and websites by using specific login information. • I can keep my private and personal information safe. • I can report any unusual or suspicious activity to an adult.	

	- I can explain how my 3D model could be improved. - I can modify my 3D model to improve it. Opportunities for the arts: 3D modelling Sculpture and digital design Artist: Antony Gormley Task: Design a digital sculpture or installation using Tinkercad.		
Spring 1 Link to further resources: Creating media <i>Web page creation</i> App: Google Sites	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 Knowledge/Skills	Key Knowledge/Skills	Key Knowledge/Skills
	- I can explore a website. - I can discuss the different types of media used on websites.	I can use technology safely and responsibly.	

- I know that websites are written in HTML.
- I can recognise the common features of a web page.
- I can suggest media to include on my page.
- I can draw a web page layout that suits my purpose.
- I can say why I should use copyright-free images.
- I can find copyright-free images.
- I can describe what is meant by the term 'fair use'.
- I can add content to my own web page.
- I can preview what my web page looks like.
- I can evaluate what my web page looks like on different devices and suggest/make edits.
- I can explain what a navigation path is.
- I can describe why navigation paths are useful.
- I can make multiple web pages and link them using hyperlinks.
- I can explain the implication of linking to content owned by others.
- I can create hyperlinks to link to other people's work.
- I can evaluate the user experience of a website.

Opportunities for the arts:

- I can log onto different apps, devices and websites by using specific login information.
- I can keep my private and personal information safe.
- I can report any unusual or suspicious activity to an adult.
- I can say why I should use copyright-free images.
- I can find copyright-free images.
- I can describe what is meant by the term 'fair use'.
- I understand that the content that I share can be shared either:
 - Within my network.
 - On the internet.
- I can use a search engine to find appropriate websites/pages to link to my own website.
- I can explain the implication of linking to content owned by others.
- I can create hyperlinks to link to other people's work.

	Create a web-page using Google Sites (ask OpenZone to allow the use for this unit) on an artist of your choice.		
Spring 2 Link to further resources: Data and information <i>Spreadsheets</i> Apps: Google Sheets Google Maps	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 Knowledge/Skills	Key Knowledge/Skills	Key Knowledge/Skills
	- I can collect data. - I can suggest how to structure my data. - I can enter data into a spreadsheet. - I can explain what an item of data is. - I can choose an appropriate format for a cell. - I can apply an appropriate format to a cell. - I can explain which data types can be used in calculations. - I can construct a formula in a spreadsheet.	- I can use technology safely and responsibly. - I can log onto different apps, devices and websites by using specific login information. - I can keep my private and personal information safe. - I can report any unusual or suspicious activity to an adult. - I know not to use sensitive, personal or private data as part of my spreadsheet.	

	• I can identify that changing inputs changes outputs. • I can calculate data using different operations. • I can create a formula which includes a range of cells. • I can apply a formula to multiple cells by duplicating it. • I can use a spreadsheet to answer questions. • I can explain why data should be organised. • I can apply a formula to calculate the data I need to answer questions. • I can produce a chart. • I can use a chart to show the answer to a question. • I can suggest when to use a table or chart. Opportunities to link with the arts: Spreadsheets/Infographics Data Visualisation Artist: Mona Chalabi Task: Turn data into infographics using Adobe.		
Summer 1 Link to further resources: Programming A		• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical

<i>Variables in games</i> Apps/Programs: Scratch 3.0 Hour of Code		behaviour; identify a range of ways to report concerns about content and contact.	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 Knowledge/Skills	Key Knowledge/Skills	Key Knowledge/Skills
		• I can use technology safely and responsibly. • I can log onto different apps, devices and websites by using specific login information. • I can keep my private and personal information safe. • I can report any unusual or suspicious activity to an adult.	• I can identify examples of information that are variable. • I can explain that the way a variable changes can be defined. • I can identify that variables can hold numbers or letters. • I can identify a program variable as a placeholder in memory for a single value. • I can explain that a variable has a name and a value. • I can recognise that the value of a variable can be changed. • I can decide where in a program to change a variable.

			• I can make use of an event in a program to set a variable. • I can recognise that the value of a variable can be used by a program. • I can choose the artwork for my project. • I can create algorithms for my project. • I can explain my design choices. • I can create the artwork for my project. • I can choose a name that identifies the role of a variable. • I can test the code that I have written. • I can identify ways that my game could be improved. • I can use variables to extend my game. • I can share my game with others. Opportunities for the arts: Generative art (discuss why this is good and bad) Instead of drawing every shape themselves, the artist programs the computer to make decisions. For example:
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			• Draw 100 circles. • Make each circle a random colour. • Put each circle in a random position. Every time the program runs, the artwork looks different. That's why the question is: "How can a computer make different artwork every time?"
Summer 2 Link to further resources: Programming B <i>Sensing</i> Micro:bit (loan) Micro:bit simulator BBC Microbit Emulator		• 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 Knowledge/Skills	Key Knowledge/Skills	Key Knowledge/Skills
		• I can use technology safely and responsibly. • I can log onto different apps, devices and websites by using specific login information. • I can keep my private and personal information safe. • I can report any unusual or suspicious activity to an adult.	• I can apply my knowledge of programming to a new environment. • I can test my program on an emulator. • I can transfer my program to a controllable device/emulator. • I can identify examples of conditions in the real world. • I can use a variable in an if, then, else statement to select the flow of a program. • I can determine the flow of a program using selection. • I can use a condition to change a variable. • I can experiment with different physical inputs. • I can explain that checking a variable doesn't change its value. • I can use an operand (e.g. <=>) in an if, then statement. • I can explain the importance of the order of conditions in else, if statements. • I can modify a program to achieve a different outcome.

			• I can decide what variables to include in a project. • I can design the algorithm for my project. • I can design the program flow for my project. • I can create a program based on my design. • I can test my program against my design. • I can use a range of approaches to find and fix bugs. Opportunities for the arts: Responsive Digital Art Artist: Camille Utterback Task: Create a piece of digital artwork on Scratch 3.0 that changes in response to user input or movement. EG: Hover cursor here and the background colour changes.
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GDS Opportunities	• Children incorporate graphics where appropriate, using the most effective text wrapping formats. • Children conduct a video chat with more than one person at a time. • Children create a video to share e-Safety rules and good rules to follow when using technology. • Children compare the information provided on two tabbed websites looking for bias and perspective.
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