

INTENT

Computing Curriculum Year A and B: Planning, Progress and Long-Term Knowledge Growth

YEAR 6	Substantive Computing Content	Recurring substantive themes, ideas and language (Key Concepts)	Subject rationale: Supporting pupils' wider Computing curriculum journey	Basic disciplinary training
Autumn Term Unit 6.2 Online Safety	Digital Literacy:	<p>The unit of work on online safety will teach the children about how to keep themselves safe online. The children will learn that although the Internet is a brilliant resource for learning and entertainment, some people the Internet to cause you harm.</p> <p>Pupils will be secure in their knowledge of the term 'digital footprint' and have an understanding of what information is left behind after visiting a website or using social media.</p> <p>This unit of work will also investigate screen time and remind the children of the dangers of using digital screens too much in their day-to-day lives.</p> <p>Pupils will be secure in key vocabulary including e.g. digital footprint, password, PEGI rating, phishing, screen time and spoof website</p>	<p>The unit of work on Online Safety is revisited each year as the children move through their school journey. The year 6 unit follows the learning the children receive in year 5 on trusted adults, passwords and referencing sources. It also feeds into work the children will cover at secondary school and their wider life as the internet becomes integral into our lives.</p>	<p>Collaboration</p> <p>I can use other people's ideas. I can share my ideas. We can talk together to solve a problem. I can teach my peers and they can teach me.</p>
	To identify benefits and risks of mobile devices broadcasting the location of the user/device.			
	To identify secure sites by looking for privacy seals of approval.			
	To identify the benefits and risks of giving personal information.			
	To review the meaning of a digital footprint.			
	To have a clear idea of appropriate online behaviour.			
	To begin to understand how information online can persist.			
	To understand the importance of balancing game and screen time with other parts of their lives.			
To identify the positive and negative influences of technology on health and the environment.				
Unit 6.1 Coding	Computer Science:	<p>The unit on Coding will be taught alongside and linked to our quest work. The children will develop their understanding of how to use multiple functions in a program. They will secure their knowledge of flowcharts and how these can be used to create and debug programs. The children will then apply their learning by designing and creating their own text-based adventure game.</p> <p>Pupils will be secure in key vocabulary including e.g. action, alert, algorithm,</p>	<p>This unit of Coding builds upon the children's prior learning from year 5 and year 4. The year 6 unit will further develop the children's knowledge by building on their work on debugging and variables in year 4 and simulating a physical system and launch commands in year 5.</p> <p>Linking the children's final designing and creating of their own text-based adventure game will further embed their knowledge across the curriculum and their specific coding knowledge and skills.</p>	<p>Making mistakes</p> <p>I can enjoy things that go wrong and learn from them. I see mistakes as a normal part of solving problems.</p> <p>Algorithm design</p> <p>What do I need to think about to make this happen? What are the steps I will need to do to solve this problem?</p>
	To design a playable game with a timer and a score.			
	To plan and use selection and variables.			
	To understand how the launch command works.			
	To use functions and understand why they are useful.			
	To understand how functions are created and called.			
	To use flowcharts to create and debug code.			
	To create a simulation of a room in which devices can be controlled.			

Unit 6.3 Spreadsheets	To understand how user input can be used in a program.	background, button, called, command, co-ordinates, debug, decomposition, developer, flowchart, function, number variable, nested, predict, procedure, prompt, run, simulation, string, tab, timer, user input and variable		
	To understand how 2Code can be used to make a text-adventure game.			
	Information Technology:	This unit on Spreadsheets will link to the maths curriculum and teach the children about probability. The children will develop their knowledge of spreadsheets using 2Calculate as a vehicle of learning. The children will then apply their learning by creating a spreadsheet to model a real-life situation and come up with solutions. Pupils will be secure in key vocabulary including e.g. average, advance mode, copy and paste, columns, cells, charts, count, dice, equals tool, formula, rows, spreadsheet and timer	This unit of Spreadsheets builds upon the children's prior learning as it is revisited each year through school. The year 6 unit will build on the knowledge of formulae from year 5 and give the children the opportunity to embed this learning by making their own spreadsheets for a purpose.	Abstraction and generalisation Which is the information I actually need? What don't I need to know? Have I made this more complicated than I need to? Will this work for other things?
	To use a spreadsheet to investigate the probability of the results of throwing many dice.			
	To use a spreadsheet to calculate the discount and final prices in a sale.			
	To use a spreadsheet to plan how to spend pocket money and the effect of saving money.			
To use a spreadsheet to plan a school charity day to maximise the money donated to charity.				
Spring Term Unit 6.4 Blogging	Information Technology:	This unit of work looking at Blogging will teach the children what a blog is, how one can be created and the effect a blog can have on the audience. The unit will be taught alongside our quest work and the children will use their wider learning to support the themes and content of their blogs. Pupils will be secure in key vocabulary including e.g. audience, blog, blog page, blog post, collaborative and icon	The unit of Blogging builds upon the children's knowledge of writing for different audiences from the computing and English curriculums. The children will also need to use their knowledge of online safety to ensure that they model safe working practices when using the internet to voice feelings and opinions.	Collaboration I can use other people's ideas. I can share my ideas. We can talk together to solve a problem. I can teach my peers and they can teach me.
	To identify the purpose of writing a blog.			
	To identify the features of a successful blog.			
	To plan the theme and content for a blog.			
	To understand how to write a blog and a blog post.			
	To consider the effect upon the audience of changing the visual properties of the blog.			
	To understand how to contribute to an existing blog.			
	To understand how and why blog posts are approved by the teacher.			
To understand the importance of commenting on blogs.				

Unit 6.5 Text Adventures	Digital Literacy (Safer Internet Day):	An assembly will be held to talk about Safer Internet Day in February.	This unit builds upon internet safety taught in previous year groups and is revisited each year.	
	Follow up lesson in class following the assembly			
	Computer Science:	This unit of work on Text Adventures will develop the children's knowledge of computer games and how they are created. This unit will link to English story writing and reading as the children use their knowledge of stories to support their adventure games development.	The unit of Text Adventures follows on from coding work the children will complete in previous years. This unit also follows on from the coding unit covered earlier in year 6 and will require the children to use their knowledge of algorithms.	Algorithm design What do I need to think about to make this happen? What are the steps I will need to do to solve this problem?
	To find out what a text adventure is.			
	To use 2Connect to plan a story adventure.			
	To make a story-based adventure using 2Create a Story.			
Unit 6.7 Quizzing	To introduce an alternative model for a text adventure which has a less sequential narrative.	Pupils will be secure in key vocabulary including e.g. text-based adventure, concept map, debug, sprite and function		Decomposition Can I explain the different parts of this problem and solution? How are the parts of the problem connected?
	To use written plans to code a map based adventure in 2Code.			
	Information Technology:	During this unit quizzing , the children will learn to create picture based quizzes for younger children. This unit will support and embed the children's knowledge of grammar as they create quizzes connected to this area of learning.	The unit of quizzing is a new unit of learning in year 6. Although not covered in previous years, the children will need to use their knowledge of audience and how they need to ensure that their quizzes meet these needs. The children will also build upon their knowledge of designing and writing programs for a purpose.	Perseverance I don't give up. I'm prepared to keep having a go to see what happens. I keep going, even when things seem confusing. I'm determined to find solutions.
	To create a picture-based quiz for young children.			
	To learn how to use the question types within 2Quiz.			
	To explore the grammar quizzes.			
Summer Term	To make a quiz that requires the player to search a database.	Pupils will be secure in key vocabulary including e.g. audience, collaboration, concept map, database and quiz		
	To make a quiz to test your teachers or parents.			
	Computer Science:	During this unit on Networks , the children will understand computer networks including the Internet, and explore how these networks offer opportunities for communication and collaboration.	The unit of Networks builds upon the children's knowledge and learning around online safety from previous years. The children will learn about the internet and how	Collaboration I can use other people's ideas. I can share my ideas. We can talk together to solve a problem. I can teach my peers and they can teach me.
	To learn about what the Internet consists of.			
	To find out what a LAN and a WAN are.			
	To find out how the Internet is accessed in school.			
Unit 6.6 Networks	To research and find out about the age of the Internet.	Pupils will be secure in key vocabulary including e.g. internet, world wide web, network, local area network (LAN), wide area network (WAN), router, network cables and wireless		
	To think about what the future might hold.			
	Computer Science:	During this unit on Binary , the children will be able to explain how all data is saved in a computer memory in a binary format.	This unit of work is a new unit of learning in year 6. Although not covered in other year groups, the children will need to use their knowledge of algorithms and how these	Pattern recognition Is this similar to a problem I've already solved? How is it different?
	To examine how whole numbers are used as the basis for representing all types of data in digital systems.			

Unit 6.8 Binary	To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems).	Pupils will be secure in key vocabulary including e.g. base 10, base 2, binary, bit, byte, decimal, denary, digit, gigabyte, integer, kilobyte, integer, machine code, megabyte, nibble, switch, terabyte, transistor and variable	are used in coding to allow computers and programs to run. This learning will also ensure the children have the knowledge in place to cover this area in more detail in KS3.	Which parts of the problem are the same? Which parts of the problem are different?
	To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics.			
Unit 6.9 Spreadsheets	Information Technology:	Within this unit on Spreadsheets , the children will build on their knowledge from earlier in the year. They will use Google sheets as a new program to become confident with using. They will learn how Google sheets can be used as a way to plan and organise events in future life. Pupils will be secure in key vocabulary including e.g. alignment, calculate, cell, cell reference, chart, column, formula(e), function, range, row, spreadsheet, style, sum, text wrapping, value and workbook	The unit of work on Spreadsheets is revisited each year as the children move through their school journey. The year 6 unit follows the learning the children receive in year 5 on using spreadsheets to plan for events. It will build on the Spreadsheets unit covered earlier in the year and give the children a chance to use a different program to use and gain confidence with.	Perseverance I don't give up. I'm prepared to keep having a go to see what happens. I keep going, even when things seem confusing. I'm determined to find solutions.
	To know what a spreadsheet looks like.			
	To navigate and enter data into cells.			
	To introduce some basic data formulae for percentages, averages and max and min numbers.			
	To demonstrate how the use of spreadsheets can save time and effort when performing calculations.			
	To use a spreadsheet to model a situation.			
	To demonstrate how a spreadsheet can make complex data clear by manipulating the way it is presented.			
	To create a variety of graphs in sheets.			
	To apply spreadsheet skills to solving problems.			
Digital Literacy (transition work):	The children will learn about how technology is now in all aspects of life. The children will spend time learning about peer pressure and transition to secondary schools and the advantages and disadvantages of technology.	This short unit of work builds on the online safety learning the children have received previously in school and sets the children up for life and learning at secondary school.		
To understand the use of technology and the links to peer pressure in secondary school.				

National Curriculum Objective	Strand	Units
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Computer Science	6.1 6.5, 6.9
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Computer Science	6.1
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Computer Science	6.5
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Computer Science	6.1 6.5, 6.9
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.	Computer Science	6.2
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.	Computer Science	6.4
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.	Computer Science	6.6
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Information Technology	6.2
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.	Information Technology	6.1, 6.3 6.4, 6.5 6.7, 6.9
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact*.	Digital Literacy	6.2 6.4