



Computing - Subject Content Overview

With deep cross curricular links, we deliver an exciting and rigorous curriculum that address the challenges and opportunities offered by the technologically rich world in which we live – creating responsible digital citizens who understand how to keep themselves safe online. Our pupils learn the vocabulary, ideas and principles of computer science that underpin how digital technology works, alongside the practical experience of programming. Preparing children for future study, the workplace and the digital world, our curriculum builds computational thinking by developing real world problem solvers who can confidently use and apply information technology – including through creative and collaborative projects.

Our children are familiar with new technology, and use it across the curriculum to support their learning. Facilities include interactive whiteboards, laptops and iPads.

We equip children with the knowledge and resilience to use digital technologies responsibly and safely in response to current events and changing trends in our children's online activities, so that our pupils are better prepared for today's world and the future.

THREAD: Computer Science

Key Skills and Knowledge		
	Nursery	Reception
PSED	<ul style="list-style-type: none"> Remember rules without needing an adult to remind them. 	<ul style="list-style-type: none"> Show resilience and perseverance in the face of a challenge. Know and talk about the different factors that support their overall health and wellbeing: sensible amounts of 'screen time'.
PD	<ul style="list-style-type: none"> Match their developing physical skills to tasks and activities in the setting. 	<ul style="list-style-type: none"> Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
UW	<ul style="list-style-type: none"> Explore how things work. 	
EAD		<ul style="list-style-type: none"> Explore, use and refine a variety of artistic effects to express their ideas and feelings.
ELG – MS		<ul style="list-style-type: none"> Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. Explain the reasons for rules, know right from wrong and try to behave accordingly.
ELG – CM		<ul style="list-style-type: none"> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
Year 1	<ul style="list-style-type: none"> To predict the behaviour of simple programs To understand what algorithms are and how they are implemented on digital devices 	
Year 2	<ul style="list-style-type: none"> To use logical reasoning to predict the behaviour of simple programs To create simple programs To create and debug simple programs To debug simple programs by using logical reasoning to predict the actions instructed by the code To understand that programs execute by following precise and unambiguous instruction 	
Year 3	<ul style="list-style-type: none"> To design, write and debug programs that control or simulate virtual events To use logical reasoning to explain how some simple algorithms work To understand that computer networks enabling the sharing of data and information To understand that the internet is a large network of computers and that information can be shared between computers 	
Year 4	<ul style="list-style-type: none"> To decompose programs into smaller parts To use logical reasoning to detect and correct errors in algorithms and programs To select, use and combine a variety of software, systems and content that accomplish given goals 	



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	<ul style="list-style-type: none">• To understand what services are and how they provide services to a network• To understand how results are selected and ranked by search engines
Year 5	<ul style="list-style-type: none">• To design, input and test an increasingly complex set of instructions to a program or device• To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems• To design, write and test simple programs that follow a sequence of instructions or allow a set of instructions to be repeated• To design, write and test simple programs with opportunities for selection, where a particular result will happen based on actions or situations controlled by the user• To use logical reasoning to explain how increasingly complex algorithms work to ensure a program's efficiency• To begin to use internet services to share and transfer data to a third party
Year 6	<ul style="list-style-type: none">• To include use of sequences, selection and repetition with the hardware used to explore real world systems• To design, write and debug programs that accomplish specific goals including controlling or stimulating physical systems: solve problems by decomposing them into smaller parts• To create programs which use variables• To use variables, sequence, selection and repetition programs• To use logical reasoning to explain how increasingly complex algorithms work and to detect and correct errors in algorithms and programs efficiently• To understand how computer networks enable computers to communicate and collaborate• To begin to use internet searches within his/her own creations to share and transfer data to a third party

THREAD: Digital Literacy



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Year	Key Skills
Year 1	<ul style="list-style-type: none"> To recognise common uses of information technology in the home and school environment To understand where to go for help and support when he/she has concerns about content or contact on the internet or other online technologies
Year 2	<ul style="list-style-type: none"> To recognise common uses of information technology beyond school To use technology safely and keep personal information private
Year 3	<ul style="list-style-type: none"> To use technology safely and respectfully, keeping personal information private To use technology safely and recognise acceptable and unacceptable behaviour To use simple search technologies and recognise that some sources are more reliable than others
Year 4	<ul style="list-style-type: none"> To use technology responsibly and understand that communication online may be seen by others To understand where to go for help and support when he/she has concerns about content or contact on the internet or other online technologies
Year 5	<ul style="list-style-type: none"> To understand the need to only select age appropriate content
Year 6	<ul style="list-style-type: none"> To use technology respectfully and responsibly To identify a range of ways to report concerns about content and contact in and out of school To use filters in search technologies effectively and is discerning when evaluating digital content



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THREAD: Information Technology

Year	Key Skills
Year 1	<ul style="list-style-type: none"> To use technology to purposely create digital content
Year 2	<ul style="list-style-type: none"> To use technology to purposely create, organise, store, manipulate and retrieve digital content To use technology to purposely create digital content comparing the benefits of different programs
Year 3	<ul style="list-style-type: none"> To use simple search technologies To recognise familiar forms of input and output devices and how they are used To make efficient use of familiar forms of input and output devices To with support select and use a variety of software to accomplish goals
Year 4	<ul style="list-style-type: none"> To use other input devices such as cameras or sensors To with support select and use a variety of software on a range of digital devices To with support select, use and combine a variety of software on a range of digital devices to accomplish given goals
Year 5	<ul style="list-style-type: none"> To use filters in search technologies effectively To independently select and use appropriate software for a task To independently select, use and combine a variety of software to design and create content for a given audience
Year 6	<ul style="list-style-type: none"> To use filters in search technologies effectively and is discerning when evaluating digital content independently select, use and combine a variety of software to design and create content for a given audience, including collecting, analysing, evaluating and presenting data and information To design and create a range of programs, systems and content for a given audience To independently select, use and combine a variety of software to collect, analyse, evaluate and present data and information



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⊞ Sandal Magna Community Academy – Long Term Plan 2020-2021

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
1	Unit 1.1 Online safety and exploring purple mash (4 weeks) Unit 1.2 Grouping and sorting (2 Weeks)	Unit 1.3 Pictograms (3 weeks) Unit 1.4 Lego Builders (3 weeks)	Unit 1.5 Maze Explorers (3 weeks) Unit 1.6 Animated Story Books (5 Weeks)	Unit 1.6 Animated story books Continued (5 Weeks)	Unit 1.7 Coding (6 Weeks)	Unit 1.8 Spreadsheets (3 Weeks) Unit 1.9 Technology outside school (2 Weeks)	
2	Unit 2.1 Coding (6 Weeks)	Unit 2.2 Online Safety (3 Weeks) Unit 2.3 Spreadsheets (3 Weeks)	Unit 2.4 Questioning (5 Weeks)	Unit 2.5 Effective Searching (3 Weeks) Unit 2.6 Creating pictures (5 Weeks)	Unit 2.6 Creating pictures (5 Weeks) Unit 2.7 Making Music (3 weeks)	Unit 2.8 Presenting ideas (4 Weeks) (3 weeks left for revisiting/time lost)	
3	Unit 3.1 Coding (6 Weeks)	Unit 3.2 Online Safety (3 Weeks) Unit 3.3 Spreadsheets (3 Weeks)	Unit 3.4 Touch Typing (4 Weeks) Unit 3.5 Email (6 Weeks)	Unit 3.5 Email (6 Weeks)	Unit 3.6 Branching Databases (4 Weeks) Unit 3.7 Simulations (3 Weeks)	Unit 3.7 Simulations (3 Weeks) Unit 3.8 Graphing (3 Weeks)	
4	Unit 4.1 Coding (6 Weeks)	Unit 4.2 Online Safety (4 Weeks)	Unit 4.3 Spreadsheets (6 Weeks)	Unit 4.4 Writing for different audiences (5 Weeks)	Unit 4.5 Logo (4 Weeks) Unit 4.6 Animation (3 Weeks)	Unit 4.7 Effective Search (3 Weeks) Unit 4.8 Hardware Investigators (2 Weeks)	Unit 4.9 Making Music (4 weeks) Fit into music lessons.
5	Unit 5.1 Coding (6 Weeks)	Unit 5.2 Online Safety (3 Weeks)	Unit 5.3 Spreadsheets (6 Weeks)	Unit 5.4 Databases (4 Weeks)	Unit 5.5 Game Creator (5 Weeks) Unit 5.6 3D Modelling (4 Weeks)	Unit 5.6 3D Modelling (4 Weeks) Unit 5.7 Concept maps (4 Weeks)	
	Unit 5.8 Word Processing Ongoing throughout the year (Focus on Autumn 2)						
6	Unit 6.1 Coding (6 Weeks)	Unit 6.2 Online Safety (2 Weeks) Unit 6.3 Spreadsheets (5 Weeks)	Unit 6.4 Blogging (5 Weeks)	Unit 6.5 Text Adventures (5 Weeks)	Unit 6.6 Networks (3 Weeks) Unit 6.7 Quizzing (4 weeks)	Unit 6.9 Spreadsheets using excel (6 weeks)	6.8 Binary Code (4 Weeks)

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