Deddington Church of England Primary School Computing Curriculum overview

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Intent

Our vision.

Through inspirational teaching, all our children have the confidence to achieve success in a safe and healthy school with Christian values at its core.

At Deddington Primary School, we want our pupils to achieve the highest standards possible through a coordinated and sequenced scheme of high-quality learning experiences. We aim to foster life-long learning behaviours through: independence, resilience, choice, collaboration and personal discovery. We want our pupils to be fully prepared and equipped for the next stages of their education and for life in modern Britain.

Implementation

We implement our vision and curriculum intent in the following ways:

- Deeply embedded vision, values and our 6 principles of success.
- A supportive and nurturing environment encouraging pupil achievement in all areas of Computing.
- A broad and balanced curriculum through all aspects of Computing, used to enhance subject across the curriculum and as a subject in his own right.
- Strong, supportive but ambitious and determined leadership.
- Clear progressive skills forming the foundation of the delivery and assessment of Computing.
- Pupils reflect upon their personal development.
- All pupils are encouraged to discover, explore and develop their own personal skills, talents and interests through a wide range of learning opportunities within computing, our updated curriculum gives those children who have a particular skill in this area to work at greater depth and to those he need support, small, manageable progressive steps.
- High quality teaching through passion, praise, subject knowledge and enthusiasm.
- Using Turn it On not only for technical support but also to help rewrite and delver our curriculum, ensuring our software and our intent are compatible.
- A commitment to constantly improving our practice.
- High quality and appropriate resources to support teaching and learning, staff to plan ahead and make sure they have the appropriate resources. Providing CPD where needed,
- Using cross-curricular links and opportunities to ensure pupils can transfer and apply the skills they develop.
- An offer of a school club.
- E-Safety sessions are given priority at the start of every term and compliments our PSHE scheme.

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Impact

- Pupils are happy at school and feel safe, nurtured and cared for. They are proud of the school and demonstrate the 'Deddington Way' in everything they do and achieve.
- Staff are proud of our school and all that we achieve together as a team.
- Achievement in Computing is at least good and is constantly improving.
- Observations of learning indicate pupils consistently demonstrate impeccable behaviour and learning attitudes.
- Rates of participation in after school clubs and extra-curricular activities are strong and increasing.
- Achievement and success within digital opportunities is high.
- Visitors and prospective parents consistently comment on the lovely atmosphere, ethos and environment the school team have created.
- Children know how to keep themselves safe online and where and how to report concerns.
- Children are ready to move on to the next phase of their education being fully aware of latest developments in technology.

The National Curriculum for Computing across Key Stages

Key stage 1

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key stage 2

Pupils should be taught to:

- 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
- 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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.

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Subject strands

Computer Systems and Networks Creating Media - A and B Programmimg- A and B Data and Information E- Safety

At Deddington CE Primary School , from September 2024 for Years 1-6 we are using the Teach Computing Curriculum, designed by the organisation STEM. All resources are found at https://teachcomputing.org/curriculum

Curriculum topics by term.

	Term 1 Computer Systems and Networks	Term 2 Creating Media - A	Term 3 Programming- A	Term 4 Data and Information	Term 5 Creating Media - B	Term 6 Programming- B
EYFS	Understanding the World What technology is used at home – who is a trusted adult?	Expressive Arts and Design Tools used to create images, sequences of movement	Communication and Language Retelling stories and giving instructions	Mathematics Shapes and patterns with objects	Literacy We're going on a Bearhunt/Gruffalo	Mathematics Beebots
Year 1	Technology Around Us Microsoft Word	Digital Painting Paintzapp Online free Link this bit to Christmas card or art focus The key skills are using the shape and line tools of Paintzapp, and using fill and undo.	Moving A Robot Beebots	Grouping Data Unplugged – Practical	Digital Writing Microsoft Word The key skills are using word to write name,add capital letters use bold italic and underline.	Programming Animations Scratch JR Online free
Year 2	Information Technology Around Us Microsoft PowerPoint Mostly unplugged activities – s	Digital Photography Digital Cameras- alternative unit Twinkl Digital Artists Recap key art skills on Paintzapp-	Robot Algorithms Beebots	Pictograms j2eonline online free This unit could be combined with the Year 2 Maths	Digital Music Chrome music lab Online free	Programming Quizzes Scratch Jr Online free

				statistics unit. In White rose hub.		
Year 3	Connecting Computers Unplugged	Stop Frame *** Animation Tablets- imotion (may not have resources for this unit) Alternative Unit – Pivotstick Figurefrom previous LTP	Sequencing Sounds Scratch Online free	Branching Databases j2e online free	Desktop Publishing Canva – accounts needed (free) This can be also taught using ppt publisher/sway Key skills are Mixing text and images and changing a layout- also link to a topic or literacy text	Events and Actions in Progress ScratchJr
Year 4	The Internet Chrome Music Lab Online free	Audio Production Audacity (Microphones and headphones)	Repetition in Shapes FMS logo Online free	Data Logging*** (Need alternative unit for microbits) Alternative unit Twinkle – How to use BBC Microbit or https://mrmorrison.co.uk/microbit/starter/	Photo Editing Paint.net online free	Repetition in Games Scratch
Year 5	Systems and Searching Internet	Video Production Canva – accounts needed digital cameras or tablets Alternative unit – SketchUp3d from previous LTP	Selection in Physical Computing*** Crumble (need to loan from STEM)	Flat- file Databases j2e.com online free	Vector Graphics Google Drawing online free	Selection in Quizzes Scratch
Year 6	Communication and Collaboration Internet	Webpage Creation Microsoft Sway/PPT and hyperlinks can be used.	Variables in Games Scratch	Introduction to Spreadsheets Googleslides/excel	3D Modelling TinkerCad – free accounts needed	Sensing Movement Microbits

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Curriculum topics by term.

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
F1	Topic	Understanding the World	Expressive Arts and Design	Communication and language	Mathematics	Literacy	Mathematics
	'I Know' The knowledge to be learnt	To know who is a trusted adult To say how technology is used at home To know screen time is to be managed To create a map	To use different tools to create images To create a simple movement sequence To learn a song	To listen to familiar stories To say steps to achieve a goal To give clear instructions To practise explaining how something works.	To count objects To group similar objects To describe a shape To make a repeating pattern To see a mistake in a repeating pattern	To act out a story To retell a story To give instructions To order a set of instructions	To program a Beebot To make a beebot follow a map To take turns To direct the beebot to make a shape.
	Key Vocabulary	Teachers, TA's parents, ipads, tablets, phones, laptops, screen time, maps made from lego, junk models	Pencil ,crayon, paintbrush, finger, sponge , turn, roll,	Enjoy, fairytale, traditional tale, story, poems, first, then, next, after that, forwards, backwards, left, right, repeat, start, begin, go	Object, label, group, search, image, colour, shape, value, , less, most, fewest, the same, mistake, debug	Beginning, middle, end, first, then, after, next, forwards, backwards, left, right, repeat, start, begin, go	Program, steps, forwards, backwards, next, after that, shapes, numbers Algorithm
	'I can' The skills to be developed	I know which adults to trust at home and school I can say the names of devices used at home I know that screen time needs to be controlled I can create a map using abstract materials.	I can make marks using different tools I can link two or three different movements together I can recall words to a song.	I can retell a familiar story I can say how I can make something I can give instructions is a variety of situations. I can show another child how to do a task.	I can count a set of objects I can group similar objects I can describe a shape I can repeat a pattern I can correct a pattern	I can act out a familiar story To retell a familiar story To give a set of instructions To order a sequence of events.	I can use the term program when controlling a beebot. I can program the beebot to move around a mat. I can work with a partner and take turns I can program a beebot to make a shape.

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
	Topic	Technology Around Us	Digital Painting	Moving a Robot		Digital Writing-	Proramming Animations

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Year 1	'I Know' The knowledge to be learnt	To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text To create rules for using technology responsibly	To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I chose the tools I use To explain why I chose the tools I used To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper	To explain what a given command will do To act out a given word To combine 'forwards' and 'backwards' commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem	Use term to catch up on previous terms	To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text To explain why I used the tools that I chose To compare typing on a computer to writing on paper	To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program
	Key Vocabulary	Technology, computer, mouse, trackpad, keyboard, screen, click, drag, input device,shift, spacebar, capital letter, full stop, safely, responsibly	Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, George Seurat, Pointillism, prefer, dislike, like	Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program	Object, label, group, search, image, colour, shape, property, value, data set, less, most, fewest, the same	Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, appropriate, design

	'I can' The skills to be developed	I can locate examples of technology in the classroom I can explain how these technology examples help us **I can explain where to go for help when I have concerns about content or contact when online** I can name the main parts of a computer I can switch on and log into a computer I can use a mouse to open a program I can click and drag to make objects on a screen I can use a mouse to create a picture I can type /delete my name on a computer	I can explain that different paint tools do different jobs I can choose appropriate paint tools and colours to recreate the work of an artist I can say which tools were helpful and why I can explain that pictures can be made in lots of different ways	I can predict/match/run a command on a device I can predict the outcome of a sequence involving 'forwards' and 'backwards' commands I can compare left and right turns I can experiment with 'turn' and 'move' commands to move a robot I can predict the outcome of a sequence involving up to four commands I can explain what my program should do I can choose the order of commands in a sequence I can debug my program I can identify several possible solutions	I can describe/ count objects I can describe a property of an object I can group objects I can count a group of objects I can group objects in more than one way I can compare groups of objects I can decide how to group objects to answer a question I can record and share what I have found	I can open a word processor I can recognise/identify keys on a keyboard I can use letter, number, and Space keys I can use Backspace to remove text I can type capital letters I can explain what the keys that I have already learnt about do I can select a word by double-clicking I can select all of the text by clicking and dragging I can change the font I can identify the toolbar and use bold, italic, and underline I can make changes to	I can find /use the commands to move a sprite I can use more than one block by joining them together I can use a **Start** block in a program I can run my program I can find blocks that have numbers I can change the value I can say what happens when I change a value I can show that a project can include more than one sprite I can delete a sprite I can add blocks to each of my sprites I can decide how each sprite will move

		I can save/open my work to a file I can identify rules to keep us safe and healthy when we are using technology in and beyond the home				text on a computer	I can create an algorithm for each sprite I can add programming blocks based on my algorithm I can test the programs I have created

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Year 2	Topic	Information Technology Around Us	Digital Photography	Robot Algorithims	**Pictograms**	Digital Music	Programming Quizzes
	'I Know' The knowledge to be learnt	To recognise the uses and features of information technology To identify the uses of information technology in the school	To use a digital device to take a photograph and make choices To describe and improve a photograph. To use tools to change an image	To describe a series of instructions as a sequence To explain what happens when we change the order of instructions	To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures	To say how music can make us feel To identify that there are patterns in music	To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome

		To identify information technology beyond school To explain how information technology helps us To explain how to use information technology safely To recognise that choices are made when using information technology	To understand that photos can be changed Or Digital Artists – Twinkl To To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I chose the tools I use To explain why I chose the tools I used To use a computer on my own to paint a picture	To use logical reasoning to predict the outcome of a program To explain that programming projects can have code and artwork To use logical reasoning to predict the outcome of a program To explain that programming projects can have code and artwork	To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer	To experiment with sound using a computer To use a computer to create a musical pattern To create music for a purpose To review and refine our computer work	To create then change a program using a given design To create then improve a program using my own design
	Key Vocabulary	Information technology (IT), computer, barcode, scanner/scan	Device, camera, photograph, capture, image, digital, landscape, portrait, horizontal, vertical, field of view, narrow, wide, format, framing, focal point, subject, matter, flash, focus, background, foreground, editing, filter, pixel, changed, real	Instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging	More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, attribute, group, same, different, most popular, least popular	Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, instrument, create, open, edit	Sequence, command, program, run, program, start, predict, blocks, actions, sprite, modify, match, debug, features, evaluate

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	'I can' The skills to be developed	I can identify examples of computers and IT I can describe some uses of computers and IT I can identify that a computer is a part of IT I can recognise common types of technology I can demonstrate how IT devices work together I can say why we use IT I can talk about different rules for using IT I can say how rules can help keep me safe	I can recognise what devices can be used to take photographs I can explain the process of taking a good photograph I can take photos in both landscape and portrait format I can discuss how to take a good photograph I can improve a photograph by retaking I can experiment with different light sources I can explain why a picture may be unclear I can recognise which photos have been changed I can identify which photos are real and which have been changed	I can follow instructions given by someone else I can choose a series of words that can be acted out as a sequence I can give clear instructions I can use an algorithm to program a sequence on a floor robot I can show the difference in outcomes between two sequences that consist of the same instructions I can identify different routes around my mat I can test my mat to make sure that it is usable I can create an algorithm to meet my goal I can use my algorithm to create a program	I can record data in a tally chart I can enter data onto a computer I can use a computer to view data in a different format I can use pictograms to answer simple questions about objects I can answer 'more than'/'less than' and 'most/least' questions I can collect the data I need I can create a pictogram and draw conclusions from it I can use a computer program to present information in different ways I can share what I have found out using a computer	I can describe music using adjectives I can say what I do and don't like about a piece of music I can create a rhythm pattern I can play an instrument following a rhythm pattern I can connect images with sounds I can use a computer to experiment with pitch I can create a rhythm which represents an animal I've chosen I can create my animal's rhythm on a computer I can add a sequence of notes to my rhythm I can review my work	I can identify the start of a sequence I can identify that a program needs to be started I can show how to run my program I can work out the actions of a sprite in an algorithm I can decide which blocks to use to meet the design I can build the sequences of blocks I need I can choose the images for my own design I can create an algorithm I can build sequences of blocks to match my design I can improve my project by adding features

			Or – Digital artists Ican explain that different paint tools do different jobs I can choose appropriate paint tools and colours to recreate the work of an artist I can say which tools were helpful and why I can explain that pictures can be made in lots of different ways	I can test and debug each part of the program	I can give simple examples of why information should not be shared	I can explain how I changed my work	I can debug my program

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Year 3	Topic	Connecting Computers-	Stop-frame Animation or *Alternative Unit – Pivotstickfigure*	Sequencing Sounds	**Branching Databases**	Desktop Publishing	Events and Actions in Programming
	'I Know' The knowledge to be learnt	To explain how digital devices function To identify input and output devices To recognise how digital devices can	To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images	To explore a new programming environment To identify that commands have an outcome	To create questions with yes/no answers To identify the attributes needed to collect data about an object To create a branching database	To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings	To explain how a sprite moves in an existing project To create a program to move a sprite in four directions

		change the way that we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network	To plan an animation To identify the need to work consistently and carefully To review and improve an animation **To evaluate the impact of adding other media to an animation**	To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description	To explain why it is helpful for a database to be well structured To plan the structure of a branching database To independently create an identification tool	**To add content to a desktop publishing publication** **To consider how different layouts can suit different purposes** To consider the benefits of desktop publishing	To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge
	Key Vocabulary	Digital device, input, output, process, program, connection, network, network switch, server, wireless access point (WAP)	Animation, flip book, stop frame, animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, delete, frame, media, import, transition	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, event, task, design, code, run the code, order, note, chord, algorithm, bug, debug	Attribute, value, questions, table, objects, branching databases, objects, equal, even, separate, order, organise, j2data,selecting, pictogram, information, decision tree, questions	Text, images, advantages, disadvantages, communicate, font, style, template, desktop publishing, copy, paste, layout, purpose, benefits	Motion, event, sprite, algorithm, logic, move, resize, algorithm, extension block, pen up, set up, design, action, debugging, errors, setup, test

	'I can' The skills to be developed	I can classify input and output devices I can describe a simple process I can design a digital device I can explain how I use digital devices for different activities I can explain how messages are passed through multiple connections I can discuss why we need a network switch I can explain the role of a switch, server, and wireless access point in a network I can identify how devices in a network are connected together I can identify networked devices around me	I can draw a sequence of pictures I can create an effective flip book—style animation I can explain how an animation/flip book works I can create an effective stop-frame animation I can create a storyboard I can use onion skinning to help me make small changes between frames I can review a sequence of frames to check my work I can evaluate the quality of my animation	I can identify the objects in a Scratch project (sprites, backdrops) I can explain that objects in Scratch have attributes (linked to) I can recognise that commands in Scratch are represented as blocks I can create a program following a design and understand that each sprite is controlled by the commands I choose I can predict the coding blocks used to move a sprite I can match coding blocks to their actions I can build a sequence of commands I can decide the actions for each sprite in a program	I can investigate questions with yes/no answers I can select an attribute to separate objects into groups I can create a group of objects within an existing group I can create yes/no questions using given attributes I can arrange objects into a tree structure I can select objects to arrange in a branching database I can compare two branching database structures I can independently create questions to use in a branching database	I can identify the advantages and disadvantages of using text and images I understand how to use emojis respectfully online I can change font style, size, and colours for a given purpose I can edit text I can choose the best locations for my content I can paste text and images to create a magazine cover I can make changes to content after I've added it I can choose a suitable layout for a given purpose I can identify the uses of desktop publishing in the real world	I can choose which keys to use for actions and explain my choices I can choose a character for my project I can choose a suitable size for a character in a maze I can program movement I can identify additional features (from a given set of blocks) I can choose suitable keys to turn on additional features I can build more sequences of commands to make my design work I can test and modify a program against a given design

		I can identify the benefits of computer networks	I can add other media to my animation I can evaluate my final film	I can make design choices for my artwork I can implement my algorithm as code		I can say why desktop publishing might be helpful	I can make design choices and justify them I can implement my design I can evaluate my project

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Year 4	Topic	The Internet	Audio Production	Repetition in shapes	Data Logging- *alternative unit Microbits Twinkl*	Photo Editing	Repetition in Games
	'I Know' The knowledge to be learnt	To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared	To identify that sound can be recorded To explain that audio recordings can be edited To recognise the different parts of creating a podcast project	To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means	To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects 'data points' from sensors over time	To explain that the composition of digital images can be changed To explain that colours can be changed in digital images To explain how cloning	To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count-controlled loops

		via the World Wide Web (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content	To apply audio editing skills independently To combine audio to enhance my podcast project To evaluate the effective use of audio	To modify a count-controlled loop to produce a given outcome To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome	To recognise how a computer can help us analyse data To identify the data needed to answer questions To use data from sensors to answer questions	can be used in photo editing To explain that images can be combined To combine images for a purpose To evaluate how changes can improve an image	To develop a design that includes two or more loops which run at the same time To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition
	Key Vocabulary	Internet, network, router, network security, network switch, wireless access point (WAP), router, website, web page, web address, router, routing, route tracing, browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, accurate, honest, adverts	Audio, record, playback, microphone, speaker, headphones, input, output, start, stop, podcast, save, file, selection, edit, mixing, time shift, export, MP3, evaluate, feedback	Program, turtle, commands, code, snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure	Data, table (layout), input device, sensor, data logger, logging, data point, interval, analyse, import, export, logged, collection, analyse, review, conclusion	Image, edit, arrange, select, digital, crop, undo, save, search, copyright, composition, save, pixels, rotate, flip, adjustments, effects, colours, hue/saturation, sepia, version, illustrator, clone, recolour, magic wand, sharpen, brighten, fake, real, composite, background, foreground, retouch, paste, alter, publication, elements, original, fontstyle, border,	Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count controlled loop, animate, costume, event block, duplicate, modify, debug, refine, evaluate, algorithm

	'I can' The skills to be developed	I can describe the internet as a network of networks 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 describe where websites are stored when uploaded to the WWW I can explain that websites and their content are created by people **I can suggest who owns the content on websites**	I can use a computer to record audio I can inspect the soundwave view to know where to trim my recording I can record content following my plan I can review the quality of my recordings I can improve my voice recordings I can arrange multiple sounds to create the effect I want I can explain the difference between saving a project and exporting an audio file I can suggest improvements to an audio recording	I can program a computer by typing commands I can explain the effect of changing a value of a command I can write and test an algorithm to produce a given outcome I can identify patterns in a sequence I can use a count-controlled loop to produce a given outcome I can explain that a computer can repeatedly call a procedure I can design a program that includes count-controlled loops I can make use of my design to write a program	I can suggest questions that can be answered using a given data set I can explain what data can be collected using sensors and it can be recorded. I can recognise that a data logger collects data at given points I can explain that there are different ways to view data I can use a data logger to collect data I can interpret and explain data that has been collected using a data logger	**I can use photo editing software to crop an image** **I understand that editing images can be unethical** I can experiment and explain with different colour effects I can remove parts of an image using cloning I can use a range of tools to copy between images **I can explain why photos might be edited** I can create a project that is a combination of other images I can combine text and my image to complete the project	I can predict/modify the outcome of a snippet of code 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 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 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 I can explain why I need to think carefully before I share or reshare content		I can develop my program by debugging it			I can evaluate the steps I followed when building my project

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
	Topic	Systems and Searching	Video Production Alternative unit – SketchUp3d from previous LTP	Selection in Physical Computing	Flat- File Databases	Vector Graphics	Selection in Quizzes

Year 5	'I Know' The knowledge to be learnt	To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To identify how to use a search engine To describe how search engines select results To explain how search results are ranked **To recognise why the order of results is important, and to whom**	To explain what makes a video effective To use a digital device to record video To capture video using a range of techniques To create a storyboard To identify that video can be improved through reshooting and editing **To consider the impact of the choices made when making and sharing a video**	To control a simple circuit connected to a computer To write a program that includes count-controlled loops To explain that a loop can stop when a condition is met To explain that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a program that controls a physical computing project	To use a form to record information To compare paper and computer-based databases To outline how you can answer questions by grouping and then sorting data To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually **To use a real-world database to answer questions.**	To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To apply what I have learned about vector drawings	To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program that uses selection To create a program that uses selection To evaluate my program
	Key Vocabulary	System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration	Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export,	Microcontroller, controller, components, LED, crocodile clips, connect, battery, program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch,	Database, data, information, record, field, sort, order, group, search, criteria, value, graph, chart, axis, compare, filter, presentation	Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse,	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement – the linking together of a condition and outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test,

			trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback	algorithm, debug, evaluate		improvement, evaluate, alternatives	run, setup, share, evaluate, constructive
	'I can' The skills to be developed	I can describe the input, process, and output of a digital system I can explain that computer systems communicate with other devices I can explain the benefits of a given computer system I can explain how to keep my personal information safe online I can explain why I should search trustworthy websites and not share any personal information online. I can explain that a search engine follows rules to rank results	I can identify features of videos I can compare features in different videos I know what to do if I see any content online that makes me feel uncomfortable I can identify and find features on a digital video recording device I can experiment with different camera angles I can make use of a microphone I can outline the scenes of my video	I can create a simple circuit and connect it to a microcontroller I can program a microcontroller to make an LED switch on I can explain what an infinite loop does I can connect more than one output component to a microcontroller I can use a count-controlled loop to control outputs I can design sequences that use count-controlled loops I can program a microcontroller to respond to an input	I can create a database using cards and order, sort it. I can explain what a field and a record is in a database I can navigate a flat-file database to compare different views of information I can choose which field to sort data by to answer a given question I can group information using a database I can choose multiple criteria to answer a given question I can outline how 'AND' and 'OR' can be used to refine data selection	I can recognise that vector drawings are made using shapes I can experiment with the shape and line tools I can explain that each element added to a vector drawing is an object I can move, resize, and rotate objects I have duplicated I can use the zoom tool to help me add detail to my drawings I can explain how alignment grids and resize handles can be used to improve consistency	I can recall/identify/modify how conditions are used in selection I can identify and design the condition and outcomes in an 'if... then... else...' statement I can create a program that uses selection to produce different outcomes I can outline a given task I can use a design format to outline my project I can identify the outcome of user input in an algorithm I can implement my algorithm to create the

		I can give examples of criteria used by search engines to rank 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 decide which filming techniques I will use I can create and save video content I can store, retrieve, and export my recording to a computer I can explain how to improve a video by reshooting and editing I can select the correct tools to make edits to my video I can make edits to my video and improve the final outcome I can evaluate my video and share my opinions	I can use selection (an 'if...then...' statement) to direct the flow of a program I can identify a real-world example of a condition starting an action I can describe what my project will do I can create a detailed drawing of my project I can write an algorithm that describes what my model will do I can use selection to produce an intended outcome I can test and debug my project	I can refine a chart by selecting a particular filter I can explain the benefits of using a computer to create charts I can ask questions that will need more than one field to answer I can refine a search in a real-world context I can present my findings to a group	I can modify objects to create a new image I can use layering to create an image I can reuse a group of objects to further develop my vector drawing I can create a vector drawing for a specific purpose I can reflect on the skills I have used and why I have used them I can compare vector drawings to freehand paint drawings	first section of my program I can test my program I can share my program with others I can identify ways the program could be improved I can identify the setup code I need in my program

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
	Topic	Communication and Collaboration	Webpage Creation	Variables in Games	Introduction to Spreadsheets	3D Modelling	Sensing Movement

Year 6	'I Know' The knowledge to be learnt	To explain the importance of internet addresses To recognise how data is transferred across the internet To explain how sharing information online can help people to work together To evaluate different ways of working together online To recognise how we communicate using technology To evaluate different methods of online communication	To review an existing website and consider its structure To plan the features of a web page To consider the ownership and use of images (copyright) To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content owned by other people	To define a 'variable' as something that is changeable To explain why a variable is used in a program To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project To evaluate my project	To create a data set in a spreadsheet To build a data set in a spreadsheet To explain that formulas can be used to produce calculated data To apply formulas to data To create a spreadsheet to plan an event To choose suitable ways to present data	To recognise that you can work in three dimensions on a computer To identify that digital 3D objects can be modified To recognise that objects can be combined in a 3D model To create a 3D model for a given purpose To plan my own 3D model To create my own digital 3D model	To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device
	Key Vocabulary	Search, search engine, Google, Bing, Yahoo, Swisscows, DuckDuckGo, refine. index, crawler, bot, optimisation, links, web crawlers, content creator, ranking, communication, internet, public, private, one-way, two-way, one-toone, one-	Website, web page, browser, media, Hypertext Markup Language (HTML), layout, header, media, purpose, copyright, fair use, evaluate, preview, device, breadcrumb, trail, navigation, hyperlink, subpage, implication, external link, embed	Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share	Spreadsheet, data, data heading, data set, cells, columns and rows, data item, format, common attribute, formula, calculation, call reference, sigma, graph, evaluate, results, comparisons, questions, software, tools, data, propose	2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, modify, evaluate, improve	Micro-bit, MakeCode, input, process, output, flashing, USB, selection, condition, if… then… else, variable, random, navigation, design, task, step counter, plan, create, code, test, debug

		to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround					
	'I can' The skills to be developed	I can describe how computers use addresses to access websites I can explain that all data transferred over the internet is in packets I can send information over the internet in different ways I can explain that the internet allows different media to be shared I can recognise that working together on the internet can be public or private I can choose methods of communication to suit particular purposes	I can discuss the different types of media used on websites I know that websites are written in HTML 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 know how to use technology respectfully and responsibly when online I can add content to my own web page I can preview what my web page looks like	I can explain that the way a variable change 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 make use of an event in a program to set a variable I can create algorithms for my project I can explain my design choices	I can enter data into a spreadsheet 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 identify that changing inputs changes outputs I can create a formula which includes a range of cells I can apply a formula to multiple cells by duplicating it	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 object I can recolour a 3D object I can rotate /duplicate/group objects in three dimensions 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 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 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 decide when I should and should not share information online I can explain that communication on the internet may not be private I can explain how to report inappropriate content online	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	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	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	I can modify my 3D model to improve it	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 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

Deddington Church of England Primary School Computing Curriculum overview

Progressive knowledge overview by strand.

Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Systems and Networks		To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text	To recognise the uses and features of information technology To identify the uses of information technology in the school To identify information technology beyond school	To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way that we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network	To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To recognise how the content of the WWW is created by people	To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To identify how to use a search engine To describe how search engines select results To explain how search results are ranked	To explain the importance of internet addresses To recognise how data is transferred across the internet
Creating Media A		To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I	To use a digital device to take a photograph and make choices To describe and improve a photograph. To use tools to change an image	To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation	To identify that sound can be recorded To explain that audio recordings can be edited To recognise the different parts of creating a podcast project	To explain what makes a video effective To use a digital device to record video To capture video using a range of techniques To create a storyboard	To review an existing website and consider its structure To plan the features of a web page To consider the ownership and use of images (copyright) To recognise the need to preview pages

		chose the tools I use To explain why I chose the tools I used To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper		To identify the need to work consistently and carefully To review and improve an animation	To apply audio editing skills independently To combine audio to enhance my podcast project To evaluate the effective use of audio	To identify that video can be improved through reshooting and editing To consider the impact of the choices made when making and sharing a video	To outline the need for a navigation path To recognise the implications of linking to content owned by other people
Creating Media B		To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text To explain why I used the tools that I chose To compare typing on a computer to writing on paper	To say how music can make us feel To identify that there are patterns in music To experiment with sound using a computer To use a computer to create a musical pattern To create music for a purpose To review and refine our computer work	To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing	To explain that the composition of digital images can be changed To explain that colours can be changed in digital images To explain how cloning can be used in photo editing To explain that images can be combined To combine images for a purpose To evaluate how changes can improve an image	To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To apply what I have learned about vector drawings	To recognise that you can work in three dimensions on a computer To identify that digital 3D objects can be modified To recognise that objects can be combined in a 3D model To create a 3D model for a given purpose To plan my own 3D model To create my own digital 3D model

Computer Prgramming A		To explain what a given command will do To act out a given word To combine 'forwards' and 'backwards' commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem	To describe a series of instructions as a sequence To explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program To explain that programming projects can have code and artwork To use logical reasoning to predict the outcome of a program To explain that programming projects can have code and artwork	To explore a new programming environment To identify that commands have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description	To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means To modify a count-controlled loop to produce a given outcome To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome	To control a simple circuit connected to a computer To write a program that includes count-controlled loops To explain that a loop can stop when a condition is met To explain that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a program that controls a physical computing project	To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device
Computer Prgramming B		To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project	To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create then change a program using a given design To create then improve a program using my own design	To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program	To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count-controlled loops To develop a design that includes two or more loops which run at the same time	To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program that uses selection	To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value

		To use my algorithm to create a program		To design and create a maze-based challenge	To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition	To create a program that uses selection To evaluate my program	To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device
Data and Information		To label objects To identify that objects can be counted To describe objects in different ways To count objects with the same properties To compare groups of objects To answer questions about groups of objects	To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer	To create questions with yes/no answers To identify the attributes needed to collect data about an object To create a branching database To explain why it is helpful for a database to be well structured To plan the structure of a branching database To independently create an identification tool	To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects 'data points' from sensors over time To recognise how a computer can help us analyse data To identify the data needed to answer questions To use data from sensors to answer questions	To use a form to record information To compare paper and computer-based databases To outline how you can answer questions by grouping and then sorting data To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To use a real-world database to answer questions	To create a data set in a spreadsheet To build a data set in a spreadsheet To explain that formulas can be used to produce calculated data To apply formulas to data To create a spreadsheet to plan an event To choose suitable ways to present data