New Computing Objectives – Academic Year 2020/2021

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
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.	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.

These are the new objectives for Computing.

Multimedia: Text, Image, Sound and Motion					
Year One	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Year Six**
I can paint with different colours using undo or eraser to correct mistakes

I can use different tools such as brush, pen, line, shape and fill

I can use a digital still camera to take a picture

I understand the need to frame the image and keep the camera still

I can record an audio sound

I can play back an audio recording

I can save, retrieve and organise work | I can discuss the quality of my images and make decisions e.g. delete a blurred image

I can use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape

I can add text strings and text boxes

I can use a photograph within a document

I can combine a set of photographs to tell a story

I can capture video | I can use the print screen function to capture an image

I can select and use a certain area of an image

I can zoom in and out on subjects appropriately

I can download the video files from the video camera

I can use software to capture video for a purpose

I can crop and arrange clips to create a short film

I can use software to record, create and edit sounds and capture still images | I can group, copy and move shapes within a picture

I can insert a picture/text/graph/hyperlink from the internet or a personal file

I can order shapes / images by sending them to the back / front

I can crop and / or rotate an image where needed

I can adjust the colours on a photo

I can plan an animation using a storyboard

I can shoot frames to combine into an animation

I can edit an animation to improve it / make it more realistic | I can add and combine shapes to design a 3D model

I can add detail to my 3D model

I can improve a photo with editing tools e.g. blur, filters, add border

I can edit the video; trimming and re-ordering clips

Insert a picture/text/graph/hyperlink from the internet or personal file

I can add a voice-over and / or background music to a video

I can add titles and credits to my video

I can create an audio recording and add it to other software | I can take photos for a given purpose and use them in my work

I can collect audio from a variety of resources including own recordings and internet clips

I can plan and create an animation for a given purpose

I can edit an animation to improve it / make it more realistic

I can combine an animation with other software

I can publish an animation and use a movie editing |

	I understand the need to frame the image and move the camera carefully I can play back a video recording I can save, retrieve and organise work	I can download and save a recording I can save, retrieve and organise work I can use appropriate keyboard commands to amend text on a device (shortcuts)	I can put sounds over an animation I can plan and create an animation for a given purpose I can save, retrieve and organise work	I can save, retrieve and organise work	package to edit/refine and add titles I can select and use appropriate multimedia tools, and combine these for a given purpose with confidence I can save, retrieve and organise work
Handling Data					
Year One	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Year Six**
I can sort items into sets or simple tables I can develop simple classification skills by carrying out simple sorting activities using ICT I can draw a simple graph, e.g. pictogram / block graph I can explain what the graph shows	I can read and use a simple database to find information I can add information to a database I can collect and record data purposefully I can present data in a bar chart	I can create a branching database to sort and organise items I can filter and sort records in a database to answer questions I can design a questionnaire to collect information, and display the information in a graph or table	I can present data in a graph, selecting the most appropriate layout I understand the difference between discrete and continuous data I can answer questions relating to graphs, and pose my own questions I can use my graph in a document / presentation to share findings with others	I can interrogate a database using more complex searches I can design and create a database I can use information in a database to create a graph in order to answer questions I can use simple functions, e.g. SUM, AVERAGE, to solve problems	I can design and create a spreadsheet for a specific purpose, incorporating different features of design and function I can construct data on the most appropriate application I know how to interpret data,

	I can answer and ask questions about bar charts	I can talk about the different ways data can be organised I can sort and organise information to use in other ways I can search a ready-made database to answer questions	I can add text and numbers to spreadsheet cells I can add simple formulae: +-*/ I can change the appearance of cells, e.g. size, borders and colours I can copy and paste formulae within a spreadsheet	I can use brackets to organise formulae I can change data in a formula to answer 'What if?' questions I can change the format of cells appropriately D5.8 I can create a graph using spreadsheet data	including spotting inaccurate data and comparing data I can use keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets I can add data to an existing database

Technology in Our Lives					
Year One	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Year Six**
Recognise ways that technology is used in the home and community, e.g. taking photos, blogs, shopping I can explore a website using buttons, menus and hyperlinks	I can find out facts by navigating websites I know each website has a unique address I can navigate to a website via favourites and typing in address	I can type in a URL to find a website I can search online for images and information safely I can talk about the reliability of information on the internet	I can use more complex search criteria to narrow down my search I know that not all websites are accurate and can check information using a different site I can make notes from information found on	I know the information found on some sites will be biased I know that images and text found on websites is subject to copyright I know how to credit the use of websites in my work, and why this should be done	I understand how computer networks work, including the internet I understand the difference between the internet and an internet service,

I can use the 'back' button I can read words, look at pictures and watch videos on a website to find information I can use letters, basic punctuation, spacebar and enter key to type words and sentences quickly I can use backspace to make corrections I can use shift key for punctuation I can use links to websites to find information	I know not all the information found on the internet will be accurate or useful I can use a search engine to find facts using key word search I can edit and improve my work by changing, adding or removing words I can change the font size, colour and style to change my work	I can present the information I have found and share it with others I can use and resize graphics within my work I can use spell check to aid my writing I can type text and insert images onto pages I can add text effects and move items around to find the best layout I can add and open attachments I can add websites to a favourites list I can use search tools to find and use an appropriate website and content	websites to present my findings I know what plagiarism is and when I can use the work of others I can use different layouts and effects (such as text box, columns, tables, borders, background colour) to refine and improve my work I can add a background colour to improve my work I can add slide transitions and animation effects I can use strategies to improve results when searching online	I can add multimedia elements, e.g. sounds, animation I can trigger animations or link to other slides when objects are pressed I can search for information using appropriate websites and advanced search functions within Google I can talk about the way search results are selected and ranked I can tell you about copyright and acknowledge the sources of information	e.g. the world wide web, VOIP I can use search engines effectively, and I know how search results are selected and ranked I can discuss and evaluate my documents, and make amendments as needed I can create a consistent design for my presentation, and present to others I can describe the opportunities computer networks and the internet offer for communication and collaboration

			Coding and Programming		
Year One	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Year Six**
I can move a programmable toy in different directions, by giving and following instructions I can combine commands to follow a route I can explore outcomes when instructions are given in different orders I can explain what an algorithm is I can describe and write algorithms to complete specific tasks	I can plan out and enter a sequence of commands to carry out specific tasks I can reorder a sequence of instructions and correct errors in programs (debug) I can explain what a program is I can predict the outcome of a program	I can refine a program by using the repeat command I can create a procedure (group of commands) to do a specific task, draw a specific shape I can solve problems by breaking them into smaller I can use variables to create an effect, e.g. repetition, if, when, loop I can keep testing a program and recognise when it needs to be debugged I can give a set of instructions to follow and predict what will happen	I can write a program, putting commands into a sequence to achieve a specific outcome I can use if...then command within a series of instructions I can test existing programs to see how they could be improved I can write a program for a specific purpose, incorporating features such as inputs, repetition and procedures	I can plan and test my algorithms and programs, detecting and correcting errors as needed I can use variables in programs I can design and write a program that controls or simulates physical systems and sensors I can keep testing a program and recognise when it needs to be debugged I can use conditional statements and edit variables	I can design and create a game, app and / or model, incorporating variables and different forms of input and output I can test, debug and modify a program to improve it I can follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program

		Online Safety			
Year One	**Year Two**	**Year Three**	**Year Four**	**Year Five**	**Year Six**
I know I need to follow rules to keep safe online I know what private information is and that I shouldn't share it online I can agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords I can seek help from an adult when I see something that is unexpected or worrying I can demonstrate how to safely open and close applications and log on and log off from websites	I know what to do if I find something inappropriate online, & where to go for help I know how to stay safe by going to appropriate websites I know that the messages or images I put online leaves a trail I know how to behave safely and respectfully online I can identify what is appropriate and inappropriate behaviour on the internet I can identify what things count as personal	I know why we need to keep passwords safe and secure I can send and reply to online messages, such as email, respectfully I know not to open messages and attachments from strangers I can identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying I can follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords I can seek help from an adult when I see something that is	I know how and why to keep my personal information private I can display myself appropriately online, e.g. avatar, code name I can act appropriately & respectfully online I know how to deal with cyberbullying I can reflect on my own digital footprint and behaviour online I can demonstrate understanding of age-appropriate websites and adverts I can explain ways to communicate with others online	I know different ways of reporting concerns about content I understand that information I put online leaves a trail, or digital footprint I know how and why to create secure passwords for online accounts I know what spam is, and how to deal with it I can be a good online citizen and friend I can seek help from an adult when they see something that is unexpected or worrying	I know different ways to report concerns about content & contact I know that some websites have age restrictions, and why these might be in place I can protect my password and other personal information I can judge what sort of privacy settings might be relevant to reducing risks I can discuss scenarios involving online risk

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