Malmesbury Park Primary School

PROGRESSION OF SKILLS AND KNOWLEDGE FOR COMPUTING

PROGRAMMING AND CODING

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movement or new images. • Complete a simple program on a computer	• To give precise instructions. • To combine start up and input events. • Explore what happens when a sequence of instructions is given.	• To write code that responds to inputs from the keyboard. • Program buttons to make objects move. • Improve/change sequences or commands.	• Create simple animations and simulations using sequences of instructions. • Use conditional statements within code (If…) • Write code that controls a simple external circuit. • Begin to look for errors in code to ensure its effectiveness.	• Create simple code that uses variables • Write code that includes repetition and loops. • Debug own code	• Create code that can change an objects speed • Write code that can generate random numbers and use this in a simulation • Confidently debug code	• Use variables to create more complex outcomes • Manipulate inputs to create useful outputs • Use properly values and parameters to store information about objects • Write and use code (Python) to control more complex external circuits.
Related National Curriculum Objectives	• Understanding 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.		• 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 algorithms work and to detect and correct errors in algorithms and programs. • 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.			

DIGITAL LITERACY

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Select and use technology hardware to interact with age-appropriate computer software	• Use a space bar, backspace, delete, arrow keys, return • To word process a short text • Combine an image from the internet with text • Talk about websites they have been on • Recognise an email address	• Choose a suitable subject and collect some information • To bring to use 2 hands to type • To recognise common uses of technology beyond school • To retrieve and store digital content • Explore a website by clicking on arrows, menus and hyperlinks • Open and select to reply to an email as a class	• To manipulate, organise, store and retrieve digital content • Use a variety of font styles, colours and sizes • Continue to practise typing with 2 hands. Change layout of slides when presenting information • Insert picture or text from internet or personal files. • Type in a URL to find a website • Add websites to favourites list • Use a search engine to find a range of media, e.g. images, texts • Log into an email account, open, create and send an email	• To explore touch typing • Use search engines effectively • Confidently use a range of presentation approaches • Use effective transitions between slides • To evaluate digital content • Download and save files from an email • Email more than one person and reply to all	• Work independently to create multi-slide presentations that combine text, images and speaker notes • Embed sounds and moving graphics with a document • Continue to practise touch typing • Understand websites such as Wikipedia are made by users (link to e-safety)	• Work on increasing words per minute using touch typing • Research and present work independently ensuring reliability of information • Make decisions about which software is best for the desired outcome • Use their knowledge of domain names to aid their judgements of the validity of websites.
Related National Curriculum Objectives	*-Recognise common uses of information technology beyond school.* *-Use technology safely and respectfully, keeping personal information private; where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*		*-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.* *-Understands computer networks, including the Internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration.* *-Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*			

MULTIMEDIA						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• They select and use technology for particular purposes	• Capture a short video • Discuss which videos to keep and delete	• Develop skills for capturing moving images • Convey ideas for capturing video footage • Arrange clips to create a short film	• Capture a video for a purpose • Chose which clips to keep and which to discard • Trim and arrange clips to convey meaning	• Add titles and credits • Use slide translations and special effects to add to a movie	• Storyboard and capture video for a purpose • Plan for the use of special effects and transitions	• Plan a multi-scene animation including character, scenes, camera angles and special effects
Related National Curriculum Objectives	-Use technology purposefully to create, organise, store, manipulate and retrieve 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. -Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.			

DIGITAL IMAGERY						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.	• Use a digital camera to take a photo • To add text to a photo.	• Create and save a digital picture • Use technology to manipulate a digital picture • To use a digital image to create a repeating pattern	• Use the print screen or snip function to capture an image • Acquire, store and combine images from cameras or the internet for a purpose	• Use advanced settings on cameras to take digital images • Manipulate and layer images • Use CAD(computer aided design) to design 3D shapes	• Confidently use advanced settings on cameras to take digital images • Use a range of tools to edit and manipulate photos • Use software to create 3D representations	• Confidently take, upload, save, retrieve and embed photos • Confidently edit and manipulate photos for a purpose, evaluating their success
Related National Curriculum Objectives:	-Use technology purposefully to create, organise, store, manipulate and retrieve digital content. -Recognise common uses of technology beyond school.		-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.			

MUSIC AND SOUND						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Shows how to operate simple equipment, e.g. turns on CD player and uses a remote control	• Record a sound at and away from the computer • Play sounds back	• Use software to record sounds • Save, retrieve and edit sounds • Change sounds recorded	• Combine, text, images and sound on a page • Combine sounds to create a simple soundtrack	• Record sounds/ narration to accompany photos • Manipulate length of recordings to fit where needed • Create a more complex soundtrack using a variety of different sounds layered together	• Collect audio from a variety of resources including own recordings and internet clips • Create a multi-track recording using effects	• Edit and refine their sound recordings to improve outcomes • Trim, arrange and edit audio levels to improve quality of the outcome
Related National Curriculum Objectives	*-Use technology purposefully to create, organise, store, manipulate and retrieve 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.*			

DATA						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Children recognise that a range of technology is used in places such as homes and schools.	• Know that images give information • Input simple data to create a bar chart/pictogram	• Collect data using tick or tally charts • Use simple graphing software to produce pictograms and basic graphs to analyse data	• Design a questionnaire to collect data • Interpret data collected and produce a graph to show findings	• Recognise which data is suitable for their topic • Select relevant data to present on a topic	• Create data collection forms and enter data accurately from these • Know which formulas to use when the spreadsheet model needs changing • Make graphs from calculations on the spreadsheet	• Know how to check for and spot inaccurate data • Understand that changing the numerical data effects the calculation. • Sort and filter information
Related National Curriculum Objectives	*-Use technology purposefully to create, organise, store, manipulate and retrieve 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.*			

E-SAFETY	
	Related National Curriculum Objectives
EYFS	• Recognise that sometimes things online can be upsetting or scary • Children are aware that they can use the internet to play and learn supported by a trusted adult/teacher • To understand the difference between real and online experiences • Know that the internet can be used to communicate with family and friends. • Know that pictures and messages can be shared safely with family using Dojo	• *To safely select and use technology for a particular purpose*
Year 1	• Understand the schools e-safety policy appropriate to age • To begin to understand they have to abide by the rules on Internet Safety • identify what things can be classed as personal information • Understand passwords are used to log in and why these should be kept private • Know what to do if they find something inappropriate online • To understand that messages can be sent electronically over distances and these should be polite and friendly	• *Use technology safely and respectfully, keeping personal information private; where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*
Year 2	• Understand the schools e-safety policy appropriate to age • Understand passwords are used to log in and why these should be kept private. • Recognise that a range of devices can be used to connect to a variety of people • Share ideas with others using email in a polite and friendly manor. • Consider the effect of their online actions on others • To know that not everything on the internet is true. • To use a search engine • Identify the steps that can be taken to keep personal data and hardware secure	• *Use technology safely and respectfully, keeping personal information private; where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*
Year 3	• Understand the schools e-safety policy; appropriate to their age • Understand passwords are used to log in to access some web content and why these should be kept private. • Use age appropriate search engines/ trusted websites provided by the teacher • Make judgements in order to stay safe, whilst communicating with others online • Understand that email/messages have to be sent to a specific email address/recipient and received emails. • Articulate examples of good and bad online behaviours and know not everything on the internet is true. • Know what to do if they access something inappropriate. • To share ideas with others by responsibly publishing online using 2Blog. • To understand that blogs can be for a wider audience and can be seen and responded to by a wider group of people and understand the need for responsible use. • Recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles)	• *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*

Year 4	• Understand the schools e-safety policy; appropriate to their age • Understand passwords are used to log in to access some web content and why these should be kept private. • Children recognise the need to keep some information private in order to protect them when communicating online. • To be able to present information and share it with others through, Blogs, forums and creating their own pages on the VLE's secure environment • Question the validity of what they see on the internet and know that not everything they see is true. • Children use the internet, as a resource to support their work, and begin to understand plagiarism/copyright • Continue to recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles). • Identify dangers when presented with scenarios • Know what to do if they access something inappropriate. • Children begin to recognise how electronic communications may be used for manipulation or persuasion	• *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*
Year 5	• Understand the schools e-safety policy; appropriate to their age. • Understand passwords are used to log in to access some web content and why these should be kept private. • Share and exchange their ideas using e-mail and electronic communications respectfully • Judge what sort of privacy settings might be relevant to reducing different risks • Judge when and when not to answer a question online. • Children understand that good online research involves processing the information (rather than copying) and interpreting it for others • Recognise that not all information on the internet is accurate or unbiased (advertising) • Recognise issues of copyright and the importance of acknowledging sources • To be able to present information and share it with others • Find 'report' and 'flag' buttons in commonly used sites and names sources of help (childline etc.)	• *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*
Year 6	• Understand the potential risks of providing personal information in an increasing range of online technologies both within and outside • Recognise their own right to be protected from the inappropriate use of technology by others and the need to respect the rights of other users • Articulate what constitutes good behaviour online and know what to do if they access something inappropriate • Use different sources to double check information found online • Act as a role model for younger pupils	• *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*