Key Concepts Progressive Curriculum Map
Computing

Includes EYFS – Years 1 to 6 – Greater Depth

Knowledge, Skills and Understanding breakdown for Computing

EYFS		
Algorithms and Programs	**Data Retrieving and Organising**	**Communicating**
	• Can they select and use technology for particular purposes?	• Can children recognise that a range of technology is used in places such as homes and schools?

EYFS (Challenging)

• Can children find out about and use a range of everyday technology?

Knowledge, Skills and Understanding breakdown for Computing

Year 1

Algorithms and Programs	Data Retrieving and Organising	Communicating
• Can they create a simple series of instructions - left and right? • Can they record their routes? • Do they understand forwards, backwards, up and down? • Can they put two instructions together to control a programmable toy? • Can they begin to plan and test a Bee-bot (or similar) journey?	• Can they capture images with a camera? • Can they enter information into a template to make a graph? • Can they talk about the results shown on a graph?	• Can they word process ideas using a keyboard? • Can they use the spacebar, back space, enter, shift and arrow keys?

Year 1 (Challenging)

Knowledge, Skills and Understanding breakdown for Computing

Year 2

Algorithms and Programs	Data Retrieving and Organising	Communicating
• Can they write a simple algorithm? • Can they predict the outcomes of a set of instructions? • Can they use right angle turns? • Can they test and amend a set of instructions? • Can they write a simple program and debug (test) it?	• Can they find information on a website? • Can they click links in a website? • Can they experiment with text, pictures and sounds to make a simple slide show? • Can they use the shape tools to draw?	• Can they word process a piece of text? • Can they insert/delete a word using the mouse and arrow keys? • Can they highlight text to change its format (B, U, I)?

Year 2 (Challenging)

• Can they create a presentation in a small group?
• Can they record sounds into software and playback?
• Can they insert prerecorded sounds into a presentation?

Digital Resilience in Key Stage 1

Knowledge & understanding	Skills
• Understand the different methods of communication • Know that bookmarking is a way to find safe sites again quickly. • Begin to understand that not everything on the internet is true. • Know that it is not always possible to copy some text and pictures from the internet. • Know that personal information should not be shared online. • Know they must tell a trusted adult immediately if anyone tries to contact or meet them, or if they feel uncomfortable about content they may be exposed to when online	• Follow the school's Acceptable Use Policy. • Use the search engines agreed by the school. • Report appropriately if they find something inappropriate online or something they are unsure of • Use the internet for learning and communicating with others, making choices when navigating through sites. • Use a login and password to access the secure network.

Knowledge, Skills and Understanding breakdown for Computing: Lower Key Stage 2

Algorithms and Programs	Data Retrieving and Organising	Communicating
• Can they design and write simple programs that achieve specific goals? • Can they make accurate predictions about the outcome of a program they have written? • Can they test an algorithm and correct simple mistakes? • Can they experiment with variables to control outcomes? • Can they use repeat instructions to carry out specified operations? • Can they experiment with variables to control outcomes? • Can they give an on-screen robot specific directional instructions that takes them from x to y?	• Can they review images on a camera and delete unwanted images? • Can they save files/images to appropriate locations from a range of digital devices? • Can they use photo editing software to crop photos and add effects? • Can they find relevant information by browsing a webpage? • Can they search for an image, copy and paste it into a document? • Can they use 'Save picture as' to save an image to the computer? • Can they copy and paste relevant text into a document? • Can they create a simple spreadsheet? • Can they use the terms cells, rows and columns? • Can they enter data and use the templates within the program to create bar charts, line graphs and pie charts?	• Can they use electronic communication? • Can they open and send an attachment? • Can they combine text, images and sounds and show awareness of audience? • Do they know how to manipulate text, underline text, centre text, change font and size • Can they begin to create a presentation that moves from slide to slide and is aimed at a specific audience? • Can they use the automatic spell checker to edit spellings? • Can they access a specific website using a given URI?

Lower Key Stage (Challenging)

• Can they use different search methods when searching for information on the web?
• Can they bookmark a page into your favourites?
• Can they copy and paste the graph/bar chart and use it in another document?

Digital Resilience in Lower Key Stage 2

Knowledge & understanding	Skills
• Understand the need for rules to keep them safe when exchanging learning and ideas online. • Recognise that information on the internet may not be accurate or reliable. • Understand that the internet contains fact and opinion and begin to distinguish between them. • Understand the need for caution when using an internet search for images and other content and what to do if they find unsuitable material • Understand that copyright exists on most digital images, video and recorded music. • Understand the need to keep personal information and passwords private. • Understand that if they make personal information available online it may be seen and used by others. • Know how to respond if asked for personal information or feel unsafe about content of a message. • Recognise that cyber bullying is unacceptable and will be sanctioned. • Know how to report an incident of cyber bullying. • Know difference between online communication tools used in school and those used at home • Understand that there may be a difference in outcomes of internet searches at home and school.	• Follow the school's Acceptable Use Policy. • Begin to identify when communications should not be opened and when an attachment may not be safe.

Knowledge, Skills and Understanding breakdown for Computing: Upper Key Stage 2

Algorithms and Programs	Data Retrieving and Organising	Communicating
• Can they explain how an algorithm works? • Can they combine sequences of instructions and procedures to turn devices on or off? • Do they understand input and output? • Can they use an ICT program to control an external device that is electrical and/or mechanical? • Can they write programs that have sequences and repetitions? • Can they detect and correct errors in algorithms and programs they have written? • Can they check and refine a series of instructions? • Can they use an ICT program to control a number of events for an external device? • Can they use ICT to measure sound, light or temperature using sensors and interpret the data? • Can they explore 'what if' questions by planning different scenarios? • Can they use input from sensors to trigger events?	• Can they produce and upload a podcast? • Can they record, edit and apply filters to sounds using sound recording software? • Can they create a simple formula in a spreadsheet and then check for accuracy and plausibility? • Can they create more complex graphs and tables to be copied and pasted into other documents? • Can they explore how to edit and manipulate digital images? • Can they use compression techniques to make digital file sizes smaller ? • Can they competently use the internet as a search tool?	• Can they use the word count tool to check the length of a document? • Can they use bullets and numbering tools? • Can they use digital devices to record sounds and capture both still and video images? • Can they use a range of presentation applications for a specific purpose and audience? • Can they use a range of different methods when using search engines? • Can they compare the results of different searches? • Can they be discerning in evaluating digital content which they find online? • Can they understand how, why and when you would collaborate using a range of digital devices?

Upper Key Stage 2 (Challenging)

• Can they create a sophisticated multimedia presentation?

Digital Resilience in Upper Key Stage 2

Knowledge & understanding	Skills
• Discuss the positive and negative impacts of the use of digital communication in their own lives and those of their peers and family. • Understand the potential risk of providing personal information online. • Recognise why people may publish content that is not accurate and identify where content may be false or biased. • Recognise the potential risks of using internet communication tools and understand how to minimise those risks (including scams and phishing). • Understand that some material on the internet is copyrighted and may not be copied or downloaded. • Understand that some messages may be malicious and know how to deal with this. • Understand that online environments have security settings, which can be altered, to protect the user. • Understand that some malicious people may use various techniques to make contact and elicit personal information. • Know that it is unsafe to arrange to meet unknown people online. • Understand they should not publish other people's pictures or tag them without permission. • Know that all online activity leaves a digital footprint which is extremely difficult to remove. • Know what to do and how to report appropriately if they discover something malicious, suspicious or inappropriate.	• Follow the school's Acceptable Use Policy. • Make safe choices about use of technology and use technology in ways which minimises risk • Create strong passwords and manage them so that they remain strong. • With regard to digital resilience, begin to select and use appropriate communication tools to solve problems by collaborating and communicating with others within and beyond school.