



# Newnham Junior School – Computing Curriculum Map

<b>Computer Science</b> Knowledge - How networks function Skills - Programming	<b>Information Technology</b> Knowledge – Software for specific outcomes Skills - Programming	<b>Digital Literacy</b> Knowledge – How to stay safe online Skills – Using technology respectfully
Theme 1- Understanding and using algorithms	Theme 1 – Searching the internet	Theme 1 – Digital literacy
Theme 2 – Understanding and using input and output	Theme 2 – Using software	Theme 2 – Questioning validity
Theme 3 – Understanding how computers work	Theme 3 – Understanding how ICT helps us	Theme 3 – Recognising and dealing with unsafe/unkind behaviour online
Theme 4 – Creating code		Theme 4 – Internet safety
<b>YEAR 3 - We are Safe Online, We are Connected, We are Writers, We are Programmers/ Bug Fixers, We are Presenters, We are Musicians</b>		
Design, write and debug programs that accomplish specific goals, use sequence and selection in programs ( <i>through Scratch projects</i> ), use logical reasoning to explain how some simple algorithms work, solve problems by decomposing them into smaller parts ( <i>building resilience to debug effectively</i> ) and detect and correct errors in algorithms and programs	Use search technologies effectively  Select and use internet services <i>using internet based programs for a purpose including emails</i>	To be digitally literate and know that they have a digital footprint and that they are accountable for their online behaviour (can use technology purposefully and safely)  Can accomplish goals using word processing software
Explain that a process acts on the inputs and that an output is produced by the process	Using digital devices Use video recording device Select, use and combine a variety of software Use video devices to create video, upload and edit	Understanding advertisement used in online services
Explain the role of a switch, server, and wireless access point in a network  Know how a computer network can be used to share information and how information is passed through multiple connections	Create content that accomplish given goals Developing effective word processing skills and use Scratch to program for a purpose.	Can recognise unsafe/unkind behaviour on the internet therefore knowing how to cope with it and ensuring they are never a part of it  <i>The SMART rules of safe Internet use. Understand the term cyberbullying)</i>
Create Code in Scratch for specific outcomes		Know how to keep themselves safe online and understand and respect age related restrictions  Understand the need for a strong password, what privacy settings are; safe email exchange, identify different forms of online communication and know the positive and negative aspects of online communities



# Newnham Junior School – Computing Curriculum Map

<b>Computer Science</b> Knowledge - How networks function Skills - Programming	<b>Information Technology</b> Knowledge – Software for specific outcomes Skills - Programming	<b>Digital Literacy</b> Knowledge – How to stay safe online Skills – Using technology respectfully
<b>YEAR 4 -We are Safe online, We are Software Developers, We are Toy designers, We are Internet Surfers, We are Word Processors, We are Photo Editors</b>		
To use logical reasoning to explain how some simple algorithms work, use sequence, selection, and repetition in programs, solve problems by decomposing them into smaller parts <b>and</b> detect and correct errors in algorithms and programs ( <i>Scratch maths game and toy simulation</i> )	Use search technologies effectively <i>Find suitable images for a purpose and research information effectively with an understanding of laws for Copyright</i>  Select and use internet services and access trusted search engines	To be digitally literate knowing how to correctly format a word processed document for a specific purpose Know what plagiarism is Can use photo editing software
work with variables (to develop a simple maths game in Scratch) Work with input and output and various forms of Use (explicitly taught terms input/output and combine these within a simulation toy)	Using digital devices Learn Pads Select, use and combine a variety of software Use photo editing software	Know that what they see on the internet isn't always real (question validity of what they see) Understand that different search terms give different results Evaluate the consequences of unreliable content Understand how images can be edited and know when this can be negative
Controlling or simulating physical systems(using Scratch to program a maths related game) (using Scratch again but progress of skills- using multiple sprites to create a simulation of a real life toy) Explain how the internet allows us to view the World Wide Web and know that content is created by people	Create content that accomplish given goals Understand how we can use IT to advertise an event in the real world (word processing for leaflets, posters etc) Use Scratch to create a working Maths game and a suitable toy simulation	Can recognise unsafe/unkind behaviour on the internet therefore knowing how to cope with it and ensuring they are never a part of it
Knowing that Programming is a language. Scratch is a coding language that using blocks		Know what digital citizenship is and how to keep themselves safe online especially understanding what they should keep private



# Newnham Junior School – Computing Curriculum Map

<b>Computer Science</b> Knowledge - How networks function Skills - Programming	<b>Information Technology</b> Knowledge – Software for specific outcomes Skills - Programming	<b>Digital Literacy</b> Knowledge – How to stay safe online Skills – Using technology respectfully
<b>YEAR 5 – We are safe online, We are Game Developers, We are Artists, We are Information Sharers, We are Physical Programmers, We are Architects</b>		
To use logical reasoning to explain how some simple algorithms work, use sequence, selection, and repetition in programs, solve problems by decomposing them into smaller parts and detect and correct errors in algorithms and programs  (All developed by creating a game in Kodu and applied in Crumble Controller)	Use search technologies effectively <i>Using YouTube and know what to do if they come across inappropriate- not age related content.</i>  Select and use internet services <i>Kodu app based programming</i>	To be digitally literate and know that they have a digital footprint and that they are accountable for their online behaviour
Can describe that a computer system features inputs, processes, and outputs and the role of these systems in our lives Understand outputs such as LEDS and motors	Using digital devices  Select, use and combine a variety of software <i>Inkscape and Sketch Up</i>	Know that what they see on the internet isn't always real (question validity of what they see)  <i>Understand that rank on search sites is by popularity and some are sponsored links. To know that they see on YouTube may have been digitally altered.</i>
Controlling or simulating physical systems Explain that data is transferred over networks in packets Know how the internet allows for collaboration	Create content that accomplish given goals Create their own digital art, a working game in Kodu and Use 3D modelling software to create architecture	Can recognise unsafe/unkind behaviour on the internet therefore knowing how to cope with it and ensuring they are never a part of it
Understand a new PROGRAMMING LANGUAGE-KODU (When Do blocks- progression to 3D interface) Apply their coding knowledge to a microcontroller (Crumble controller)		Know what to do with spam email, Understand why they should cite a source, understand unsafe behaviour online



# Newnham Junior School – Computing Curriculum Map

<b>Computer Science</b> Knowledge - How networks function Skills - Programming	<b>Information Technology</b> Knowledge – Software for specific outcomes Skills - Programming	<b>Digital Literacy</b> Knowledge – How to stay safe online Skills – Using technology respectfully
<b>Year 6 – We are safe online, We are Communicators, We are App Planners, We are App Creators, We are Data Organisers</b>		
Use sequence, selection, and repetition in programs detect and correct errors in algorithms and programs <i>(developed through creating their own apps- using AppInventor and using formulas in Spreadsheets)</i>	Select and use internet services Use search technologies effectively <i>(to research existing Apps) (to find out capabilities of smartphones)</i>	To be digitally literate and know that they have a digital footprint and that they are accountable for their online behaviour <i>Understand the benefits and pitfalls of online relationships</i>
work with input and output <i>(particularly linked to mobile devices and spreadsheets)</i>	Using digital devices <i>(to know capabilities of mobile devices)</i> Select, use and combine software and use digital devices to create content	identify a range of ways to report concerns about content and contact in the context of identifying secure and unsecure websites. <i>(Understanding quality for purpose-understanding what you 'allow' an app to do when it downloads)</i>
Understand computer networks including the internet and know they can provide multiple services, such as the World Wide Web <i>(progression to include Wifi and mobile data )</i>  Using spreadsheet to use and apply formulas	Design and create a range of content that accomplish given goals using multiple services (app inventor and Microsoft Excel)	Can recognise unsafe/unkind behaviour on the internet therefore knowing how to cope with it and ensuring they are never a part of it <i>Link to social media and permissions within Apps and paid for Apps.</i> Know how to keep themselves safe online and understand and respect age related restrictions <i>understand how media plays a powerful role in shaping ideas for boys and girls</i>
<b>SCHOOL-SPECIFIC - EVENTUAL OUTCOMES FOR THE END OF KS2</b>		
To understand that algorithms provide specific outcomes and can be fixed through decomposition and logic	To be able to search for a purpose	To be digitally literate and know that they have a digital footprint and that they are accountable for their online behaviour (can use technology purposefully and safely)
To experience a range of input and output	To know which software to use for a specific outcome (knowing that there is word processing software, software for developing Art, excel to analyse data etc.)	Know that what they see on the internet isn't always real (question validity of what they see)
To understand the technology behind computers/networks	To understand how IT can enhance our lives	Can recognise unsafe/unkind behaviour on the internet therefore knowing how to cope with it and ensuring they are never a part of it
To be able to create code for specific purposes and that their programming skills are transferrable- it is just a case of learning a new language		Know how to keep themselves safe online and understand and respect age related restrictions