

Cycle A

Year 1/2 Computing Curriculum

Autumn	Spring	Summer
<p>Computing systems and networks – IT around us Creating media – Digital photography</p> <p>Children will know by the end of this unit: <b>Computing systems and networks – Technology outside school (Purple Mash)</b></p> <ul style="list-style-type: none"> <li>How to recognise the uses and features of information technology</li> <li>How to identify information technology beyond school</li> <li>To record examples of technology outside school</li> </ul> <p><b>Creating media – Digital photography</b></p> <ul style="list-style-type: none"> <li>How to use digital device to take a photograph</li> <li>How to describe what makes a good photograph</li> <li>How to recognise that photos can be changed</li> </ul> <p><b>Online safety</b> Staying Safe Online Pupils will learn how to stay safe online and how to avoid sharing personal information and images.</p>	<p>Programming A – Robot algorithms Data and Information - Pictograms</p> <p>Children will know by the end of this unit: <b>Programming A – Robot algorithms</b></p> <ul style="list-style-type: none"> <li>How to describe a series of instructions as a sequence</li> <li>How to explain what happens when we change the order of instructions</li> <li>How to design an algorithm</li> </ul> <p><b>Data and Information – Pictograms</b></p> <ul style="list-style-type: none"> <li>How to recognise that we can count and compare object using tally charts</li> <li>How to recognise that objects can be represented as pictures</li> <li>How to create a pictogram</li> <li>How to explain that we can present information using a computer</li> </ul> <p><b>Online safety</b> Screen out the Mean Pupils will learn how to communicate appropriately online and what friendship means online. Pupils will also explore how to respond to cyberbullying.</p>	<p>Creating Media – Making Music Programming B – Introduction to quizzes</p> <p>Children will know by the end of this unit: <b>Creating Media – Making Music (Purple Mash)</b></p> <ul style="list-style-type: none"> <li>How to make music digitally using 2sequence</li> <li>How to explore, edit and combine sounds using 2sequence</li> <li>How to upload a sound from a bank of sounds into the sounds section</li> <li>How to record and upload environmental sounds into Purple Mash</li> <li>How to use these sounds to create tunes in 2Sequence</li> </ul> <p><b>Programming B – Presenting ideas (PURPLE MASH)</b></p> <ul style="list-style-type: none"> <li>To explore how a story can be presented in different ways</li> <li>To make a quiz about a story or class topic</li> <li>To make a fact file on a non-fiction topic</li> <li>To make a presentation to the class</li> </ul> <p><b>Online safety</b> My Online Life Pupils will develop their knowledge of how to behave online and whether to trust everything that they read.</p>



Cycle A		
Year 3/4 Computing Curriculum		
Autumn	Spring	Summer
<p>Computing Systems and networks – Connecting computers Creating Media - Animation</p>	<p>Programming A –Sequence in music Data and information – Branching databases</p>	<p>Creating media – Desktop publishing Programming B – Events and actions</p>
<p>Children will know by the end of this unit: <b>Computing Systems and networks – Connecting computers</b></p> <ul style="list-style-type: none"> <li>• How to identify input and output devices</li> <li>• How to recognise how digital devices can change the way we work</li> <li>• How to explore how digital devices can be connected</li> <li>• How to recognise the physical components of a network</li> </ul> <p><b>Creating Media – Animation</b></p> <ul style="list-style-type: none"> <li>• How to explain that animation is a sequence of drawings or photographs</li> <li>• How to relate animated movement with a sequence of images</li> <li>• How to review and improve an animation</li> </ul> <p><b>Online safety</b> Staying Safe Online Pupils will discuss how to stay safe when talking to people online and how to stay respectful.</p>	<p>Children will know by the end of this unit: <b>Programming A – Sequence in music</b></p> <ul style="list-style-type: none"> <li>• How to explore a new programming environment</li> <li>• How to identify that commands have an outcome</li> <li>• How to explain that a program has a start</li> <li>• How to recognise that a sequence of commands can have an order</li> </ul> <p><b>Data and information – Branching databases</b></p> <ul style="list-style-type: none"> <li>• How to create questions with yes/no answers</li> <li>• How to create a branching database</li> <li>• How to explain why it is helpful for a database to be well structured</li> </ul> <p><b>Online safety</b> Online Detectives Pupils will learn how to use advanced internet searching to explore whether the internet can be used to authenticate facts. They will also explore the benefits of using strong passwords.</p>	<p>Children will know by the end of this unit: <b>Creating media – Desktop publishing</b></p> <ul style="list-style-type: none"> <li>• How to recognise how text and images convey information</li> <li>• How to recognise that text and layout can be edited</li> <li>• How to choose appropriate page settings</li> </ul> <p><b>Programming B – Events and actions</b></p> <ul style="list-style-type: none"> <li>• How to read a program to move a sprite in four directions</li> <li>• How to develop my program by adding features</li> <li>• How to identify and fix bugs in a program</li> <li>• How to design and create a maze based challenge</li> </ul> <p><b>Online safety</b> My Online Life Pupils will develop their knowledge of how to create a positive online reputation and how technology can impact on health.</p>



Cycle A		
Year 5/6 Computing Curriculum		
Autumn	Spring	Summer
Computing systems and networks – Sharing information Creating media – Video editing	Programming A – Selection in physical computing Data and information – Flat-file databases	Creating media – Vector drawing Programming B – Selection in quizzes
Children will know by the end of this unit: <b>Computing systems and networks – Sharing information</b> <ul style="list-style-type: none"> <li>How to explain that computers can be connected together to form systems</li> <li>How to recognise the role of computer systems in our lives</li> <li>How to explain how sharing information online lets people in different places work together</li> <li>How to contribute to a shared project online</li> </ul> <b>Creating media – Video editing</b> <ul style="list-style-type: none"> <li>How to explain what makes a video effective</li> <li>How to identify digital devices that can record video</li> <li>How to capture video using a range of techniques</li> <li>How to consider the impact of the choices made when making and sharing a video</li> </ul> <b>Online safety</b> Staying Safe Online Pupils will further their understanding of respecting others online.	Children will know by the end of this unit: <b>Programming A – Selection in physical computing</b> <ul style="list-style-type: none"> <li>How to control a simple circuit connected to a computer</li> <li>How to write a program that includes count-controlled loops</li> <li>How to explain that a loop can stop when a condition is met</li> <li>How to create a program that controls a physical computing project</li> </ul> <b>Data and information – Flat-file databases</b> <ul style="list-style-type: none"> <li>How to use a form to record information</li> <li>How to outline how grouping and then sorting data allows us to answer questions</li> <li>How to explain that tools can be used to select specific data</li> <li>How to explain that computer programs can be used to compare data visually</li> </ul> <b>Online safety</b> Picture Perfect? Pupils will explore the world of online ‘influencers’ and vloggers on YouTube. They will look at the commercial aspect of vloggers and what happens when it all goes wrong	Children will know by the end of this unit: <b>Creating media – Vector drawing</b> <ul style="list-style-type: none"> <li>How to identify that drawing tools can be used to produce different outcomes</li> <li>How to create a vector drawing by combining shapes</li> <li>How to recognise that vector drawings consist of layers</li> <li>How to group objects to make easier to work with</li> </ul> <b>Programming B – Selection in quizzes</b> <ul style="list-style-type: none"> <li>How to explain how selection is used in computer programs</li> <li>How to relate that a condition statement connects a condition to an outcome</li> <li>How to explain how selection directs the flow of a program</li> <li>How to design a program which uses selection</li> </ul> <b>Online safety</b> My Online Life Pupils will develop their knowledge of what an online community is. They will also look at copyright and how to interpret information found online.

### Disciplinary Knowledge

Across the Schools of Woolton Hill our children are taught a variety of disciplinary knowledge:

- Solve problems by breaking them down into smaller parts.
- Apply the fundamental principles and concepts of computer science: including abstraction, sequence, selection and repetition, logic, algorithms and data representation.
- Design, write and debug programs that accomplish specific goals.
- Use logical reasoning to explain how some simple algorithms work and to find and correct errors in algorithms and programs.
- Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
- Use technology safely, respectfully and responsibly.
- Select, use and combine software on a range of digital devices to create a programs, that accomplish given goals, including collecting, analysing, evaluating and presenting data.

Cycle B		
Year 1/2 Computing Curriculum		
Autumn	Spring	Summer
Computing Systems and network – Technology around us Digital Media – Digital painting	Programming A – Moving a Robot Data and Information – Grouping data	Creating Media – Digital Writing Programming B – Animated Story Books
<p>Children will know by the end of this unit:</p> <p><b>Computing Systems and network – Technology around us</b></p> <ul style="list-style-type: none"> <li>• How to identify technology</li> <li>• How to identify a computer and its main parts</li> <li>• How to use a mouse in different ways</li> <li>• How to use a keyboard to type on a computer</li> </ul> <p><b>Digital Media – Creating pictures (Purple Mash)</b></p> <ul style="list-style-type: none"> <li>• To learn the functions of the 2paint a picture tool</li> <li>• To learn about the work of Piet Mondrian and recreate the style using the lines template</li> <li>• To explore surrealism and eCollage</li> </ul> <p><b>Online safety</b>            Going Places Safely            Pupils will learn that they can go to exciting places online but they need to follow certain rules to remain safe.</p>	<p>Children will know by the end of this unit:</p> <p><b>Programming A – Moving a Robot</b></p> <ul style="list-style-type: none"> <li>• How to explain what a given command will do</li> <li>• How to act out a given word</li> <li>• How to combine forwards and backwards commands to make a sequence</li> <li>• How to combine four direction commands to make sequences</li> </ul> <p><b>Data and Information – Grouping data, pictograms and lego builders (Purple Mash)</b></p> <ul style="list-style-type: none"> <li>• How to sort items on the computer using the ‘grouping activities in purple mash</li> <li>• To understand that data can be represented in picture format</li> <li>• How to use a pictogram to record the results of an experiment</li> <li>• How to consider how the order of instructions affects the results</li> </ul> <p><b>Online safety</b>            Keep it Private            Pupils will learn that many websites ask for information that is private and discuss how to responsibly handle such requests.</p>	<p>Children will know by the end of this unit:</p> <p><b>Creating Media – Digital Writing</b></p> <ul style="list-style-type: none"> <li>• How to use a computer to write</li> <li>• How to add and remove text on a computer</li> <li>• How to compare typing on a computer to writing on paper</li> </ul> <p><b>Programming B – Animated Story Books (Purple Mash)</b></p> <ul style="list-style-type: none"> <li>• To introduce e-books and the 2Create a Story tool</li> <li>• To add animation to a story</li> <li>• To work on a more complex story, including adding background and copying and pasting pages</li> <li>• To share e-books on a class display board</li> </ul> <p><b>Online safety</b>            My Online Life            Pupils will develop their knowledge of how to behave online and how to recognise online bullying.</p>





Cycle B		
Year 3/4 Computing Curriculum		
Autumn	Spring	Summer
Computing systems and networks – The Internet Creating media – Audio editing	Programming A – Repetition in shapes Data and information – Data logging	Creating media – Photo editing Programming B - Repetition in games
<p>Children will know by the end of this unit:</p> <p><b>Computing systems and networks – The Internet</b></p> <ul style="list-style-type: none"> <li>How to describe how networks physically connect to other networks</li> <li>How to describe how content can be added and accessed on the World Wide Web (WWW)</li> <li>How to recognise how the content of the WWW is created by people</li> <li>How to evaluate the consequences of unreliable content</li> </ul> <p><b>Creating media – Audio editing</b></p> <ul style="list-style-type: none"> <li>How to identify that sound can be digitally recorded</li> <li>How to use a digital device to record sound</li> <li>How to explain that a digital recording is stored as a file</li> <li>How to show that different types of audio can be combined and played together</li> </ul> <p><b>Online safety</b> Staying Safe Online Pupils will further their understanding of online bullying and how to get help.</p>	<p>Children will know by the end of this unit:</p> <p><b>Programming A – Repetition in shapes</b></p> <ul style="list-style-type: none"> <li>How to create a program in a text- based language</li> <li>How to explain what repeat means</li> <li>How to modify a count-controlled loop to produce a given outcome</li> <li>How to create a program that uses count-controlled loops to produce a given outcome</li> </ul> <p><b>Data and information – Data logging</b></p> <ul style="list-style-type: none"> <li>How to use a digital device to collect data automatically</li> <li>How to explain that a data logger collects ‘data points’ from sensors over time</li> <li>How to identify the data needed to answer questions</li> </ul> <p><b>Online safety</b> Real or Fake? Pupils will become aware of ‘fake news’ and learn how to assess what they read. They will learn skills to help them determine if something is real or fake</p>	<p>Children will know by the end of this unit:</p> <p><b>Creating media – Photo editing</b></p> <ul style="list-style-type: none"> <li>How to explain that digital images can be changed</li> <li>How to change the composition of an image</li> <li>How to describe how images can be changed for different uses</li> <li>How to recognise that not all images are real</li> </ul> <p><b>Programming B - Repetition in games</b></p> <ul style="list-style-type: none"> <li>How to develop the use of count-controlled loops in a different programming environment</li> <li>How to explain that in programming there are infinite loops and count controlled loops</li> <li>How to develop a design that includes two or more loops which run at the same time</li> <li>How to modify an infinite loop in a given program</li> <li>How to design a project that includes repetition</li> </ul> <p><b>Online safety</b> My Online Life Pupils will develop their knowledge of whether they can control their online reputation. They will also look at how technology can have a negative impact on people’s lives.</p>



Cycle B

Year 5/6 Computing Curriculum

<p><b>Autumn</b></p> <p>Computing systems and networks – Communication Creating media – Web page creation</p>	<p><b>Spring</b></p> <p>Programming A – Variables in games Data and information – Spreadsheets</p>	<p><b>Summer</b></p> <p>Creating media – 3D modelling Programming B – Sensing</p>
<p>Children will know by the end of this unit:</p> <p><b>Computing systems and networks – Communication</b></p> <ul style="list-style-type: none"> <li>To identify how to use a search engine</li> <li>To describe how search engines select results</li> <li>To explain how search results are ranked</li> <li>To recognise why the order of results is important, and to whom</li> </ul> <p><b>Creating media – Web page creation</b></p> <ul style="list-style-type: none"> <li>To review an existing website and consider its structure</li> <li>To plan the features of a web page</li> <li>To consider the ownership and use of images (copyright)</li> <li>To outline the need for a navigation path</li> <li>To recognise the implications of linking to content owned by other people</li> </ul> <p><b>Online safety</b> Staying Safe Online Pupils will further their understanding of online gaming and chat sites.</p>	<p>Children will know by the end of this unit:</p> <p><b>Programming A – Variables in games</b></p> <ul style="list-style-type: none"> <li>To define a ‘variable’ as something that is changeable</li> <li>To explain why a variable is used in a program</li> <li>To choose how to improve a game by using variables</li> <li>To design a project that builds on a given example</li> </ul> <p><b>Data and information – Spreadsheets</b></p> <ul style="list-style-type: none"> <li>To explain that objects can be described using data</li> <li>To explain that formulas can be used to produce calculated data</li> <li>To apply formulas to data, including duplicating</li> <li>To create a spreadsheet to plan an event</li> </ul> <p><b>Online safety</b> Moving On Pupils will learn how to use the skills they have learnt to respond to any challenges they might face when they leave primary school when interacting with</p>	<p>Children will know by the end of this unit:</p> <p><b>Creating media – 3D modelling</b></p> <ul style="list-style-type: none"> <li>To use a computer to create and manipulate three-dimensional (3D) digital objects</li> <li>To construct a digital 3D model of a physical object</li> <li>To identify that physical objects can be broken down into a collection of 3D shapes</li> <li>To design a digital model by combining 3D objects</li> </ul> <p><b>Programming B – Sensing</b></p> <ul style="list-style-type: none"> <li>To create a program to run on a controllable device</li> <li>To update a variable with a user input</li> <li>To use an conditional statement to compare a variable to a value</li> <li>To design a project that uses inputs and outputs on a controllable device</li> </ul> <p><b>Online safety</b> My Online Life Pupils will develop their knowledge of social media and how the media can shape our views. They will also look at online debt from games and how technology can impact on health</p>

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- Use technology safely, respectfully and responsibly.
- Select, use and combine software on a range of digital devices to create a programs, that accomplish given goals, including collecting, analysing, evaluating and presenting data.