

Cycle A
Year 1/2 Computing Curriculum

Autumn Computing systems and networks – IT around us Creating media – Digital photography	Spring Programming A – Robot algorithms Data and Information - Pictograms	Summer Creating Media – Making Music Programming B – Introduction to quizzes
Children will know by the end of this unit: Computing systems and networks – Technology outside school (Purple Mash) <ul style="list-style-type: none"> • How to recognise the uses and features of information technology • How to identify information technology beyond school • How to explain how to use information technology safely • To walk around the local community and find examples of where technology is used • To record examples of technology outside school Creating media – Digital photography <ul style="list-style-type: none"> • How to use digital device to take a photograph • How to make choices when taking a photograph • How to describe what makes a good photograph • How to decide how photographs can be improved • How to use tools to change an image • How to recognise that photos can be changed 	Children will know by the end of this unit: Programming A – Robot algorithms <ul style="list-style-type: none"> • How to describe a series of instructions as a sequence • How to explain what happens when we change the order of instructions • How to use logical reasoning to predict the outcome of a program (series of commands) • How to explain that programming projects can have code and artwork • How to design an algorithm • How to create and debug a program that I have written Data and Information – Pictograms <ul style="list-style-type: none"> • How to recognise that we can count and compare object using tally charts • How to recognise that objects can be represented as pictures • How to create a pictogram • How to select objects by attribute and make comparisons • How to recognise that people can be described by attributes 	Children will know by the end of this unit: Creating Media – Making Music (Purple Mash) <ul style="list-style-type: none"> • How to make music digitally using 2sequence • How to explore, edit and combine sounds using 2sequence • How to edit and refine composed music • How to think about how music can be used to express feelings and create tunes which depict feelings • How to upload a sound from a bank of sounds into the sounds section • How to record and upload environmental sounds into Purple Mash • How to use these sounds to create tunes in 2Sequence Programming B – Presenting ideas (PURPLE MASH) <ul style="list-style-type: none"> • To explore how a story can be presented in different ways • To make a quiz about a story or class topic • To make a fact file on a non-fiction topic • To make a presentation to the class

<p>Online safety Staying Safe Online Pupils will learn how to stay safe online and how to avoid sharing personal information and images.</p>	<ul style="list-style-type: none"> • How to explain that we can present information using a computer <p>Online safety 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>Online safety My Online Life Pupils will develop their knowledge of how to behave online and whether to trust everything that they read.</p>
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Cycle A		
Year 3/4 Computing Curriculum		
Autumn	Spring	Summer
Computing Systems and networks – Connecting computers Creating Media - Animation	Programming A –Sequence in music Data and information – Branching databases	Creating media – Desktop publishing Programming B – Events and actions
Children will know by the end of this unit: Computing Systems and networks – Connecting computers <ul style="list-style-type: none"> • How to explain how digital devices function • How to identify input and output devices • How to recognise how digital devices can change the way we work • How to explain how a computer network can be used to share information • How to explore how digital devices can be connected • How to recognise the physical components of a network Creating Media – Animation <ul style="list-style-type: none"> • How to explain that animation is a sequence of drawings or photographs • How to relate animated movement with a sequence of images • How to plan an animation • How to identify the need ot work consistently and carefully • How to review and improve an animation • How to evaluate the impact of adding other media to an animation 	Children will know by the end of this unit: Programming A – Sequence in music <ul style="list-style-type: none"> • How to explore a new programming environment • How to identify that commands have an outcome • How to explain that a program has a start • How to recognise that a sequence of commands can have an order • How to change the appearance of my project • How to create a project from a task description Data and information – Branching databases <ul style="list-style-type: none"> • How to create questions with yes/no answers • How to identify the object attributes needed to collect relevant data • How to create a branching database • How to explain why it is helpful for a database to be well structured • How to identify objects using a branching database • How to compare the information shown in a pictogram with a branching database 	Children will know by the end of this unit: Creating media – Desktop publishing <ul style="list-style-type: none"> • How to recognise how text and images convey information • How to recognise that text and layout can be edited • How to choose appropriate page settings • How to add content to a desktop publishing publication • How to consider how different layouts can suit different purposes • How to consider the benefits of desktop publishing Programming B – Events and actions <ul style="list-style-type: none"> • How to explain how a sprite moves an existing project • How to read a program to move a sprite in four directions • How to adapt a program to a new context • How to develop my program by adding features • How to identify and fix bugs in a program • How to design and create a maze based challenge

<p>Online safety Staying Safe Online Pupils will discuss how to stay safe when talking to people online and how to stay respectful.</p>	<p>Online safety 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>Online safety My Online Life Pupils will develop their knowledge of how to create a positive online reputation and how technology can impact on health.</p>
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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: Computing systems and networks – Sharing information <ul style="list-style-type: none"> • How to explain that computers can be connected together to form systems • How to recognise the role of computer systems in our lives • How to recognise how information is transferred over the internet • How to explain how sharing information online lets people in different places work together • How to contribute to a shared project online • How to evaluate different ways of working together online Creating media – Video editing <ul style="list-style-type: none"> • How to explain what makes a video effective • How to identify digital devices that can record video • How to capture video using a range of techniques • How to create a storyboard • How to identify that video can be improved through reshooting and editing • How to consider the impact of the choices made when making and sharing a video 	Children will know by the end of this unit: Programming A – Selection in physical computing <ul style="list-style-type: none"> • How to control a simple circuit connected to a computer • How to write a program that includes count-controlled loops • How to explain that a loop can stop when a condition is met • How to explain that a loop can be used to repeatedly check whether a condition has been met • How to design a physical project that includes selection • How to create a program that controls a physical computing project Data and information – Flat-file databases <ul style="list-style-type: none"> • How to use a form to record information • How to compare paper and computer-based databases • How to outline how grouping and then sorting data allows us to answer questions • How to explain that tools can be used to select specific data • How to explain that computer programs can be used to compare data visually 	Children will know by the end of this unit: Creating media – Vector drawing <ul style="list-style-type: none"> • How to identify that drawing tools can be used to produce different outcomes • How to create a vector drawing by combining shapes • How to use tools to achieve a desired effect • How to recognise that vector drawings consist of layers • How to group objects to make easier to work with • How to evaluate my vector drawing Programming B – Selection in quizzes <ul style="list-style-type: none"> • How to explain how selection is used in computer programs • How to relate that a condition statement connects a condition to an outcome • How to explain how selection directs the flow of a program • How to design a program which uses selection • How to create a program which uses selection • How to evaluate my program

<p>Online safety Staying Safe Online Pupils will further their understanding of respecting others online.</p>	<ul style="list-style-type: none"> • How to apply my knowledge of database to ask and answer real-world questions <p>Online safety 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</p>	<p>Online safety 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.</p>
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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
Children will know by the end of this unit: Computing Systems and network – Technology around us <ul style="list-style-type: none"> • How to identify technology • How to identify a computer and its main parts • How to use a mouse in different ways • How to use a keyboard to type on a computer • How to use the keyboard to edit text • How to create rules for using technology responsibly Digital Media – Creating pictures (Purple Mash) <ul style="list-style-type: none"> • To learn the functions of the 2paint a picture tool • To learn about the recreate the Impressionist style of art (Monet, Degas, Renoir) • To recreate pointillist art and look at the work of pointillist artists such as Seurat • To learn about the work of Piet Mondrian and recreate the style using the lines template • To learn about th work of William Morris and recreate the style using the patterns template • To explore surrealism and eCollage 	Children will know by the end of this unit: Programming A – Moving a Robot <ul style="list-style-type: none"> • How to explain what a given command will do • How to act out a given word • How to combine forwards and backwards commands to make a sequence • How to combine four direction commands to make sequences • How to plan a simple program • How to find more than one solution to a problem Data and Information – Grouping data, pictograms and lego builders (Purple Mash) <ul style="list-style-type: none"> • How to sort items using a range of criteria • How to sort items on the computer using the ‘grouping activities in purple mash • To understand that data can be represented in picture format • How to contribute to a class pictogram • How to use a pictogram to record the results of an experiment • How to compare the effects of adhering strictly to instructions to completing tasks without complete instructions 	Children will know by the end of this unit: Creating Media – Digital Writing <ul style="list-style-type: none"> • How to use a computer to write • How to add and remove text on a computer • How to identify that the look of text can be changed on a computer • How to make careful choices when changing text • How to explain why I used the tools that I chose • How to compare typing on a computer to writing on paper Programming B – Animated Story Books (Purple Mash) <ul style="list-style-type: none"> • To introduce e-books and the 2Create a Story tool • To add animation to a story • To add sound to a story, including voice recording and music the children have composed • To work on a more complex story, including adding background and copying and pasting pages • To share e-books on a class display board

<p>Online safety 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>	<ul style="list-style-type: none">• How to follow and create simple instructions on the computer• How to consider how the order of instructions affects the results <p>Online safety 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>Online safety My Online Life Pupils will develop their knowledge of how to behave online and how to recognise online bullying.</p>
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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
Children will know by the end of this unit: Computing systems and networks – The Internet <ul style="list-style-type: none"> • How to describe how networks physically connect to other networks • How to recognise how networked devices make up the internet • How to outline how websites can be shared via the World Wide Web (WWW) • How to describe how content can be added and accessed on the World Wide Web (WWW) • How to recognise how the content of the WWW is created by people • How to evaluate the consequences of unreliable content Creating media – Audio editing <ul style="list-style-type: none"> • How to identify that sound can be digitally recorded • How to use a digital device to record sound • How to explain that a digital recording is stored as a file • How to explain that audio can be changed through editing 	Children will know by the end of this unit: Programming A – Repetition in shapes <ul style="list-style-type: none"> • How to identify that accuracy in programming is important • How to create a program in a text- based language • How to explain what repeat means • How to modify a count-controlled loop to produce a given outcome • How to decompose a task into small steps • How to create a program that uses count-controlled loops to produce a given outcome Data and information – Data logging <ul style="list-style-type: none"> • How to explain that data gathered over time can be used to answer questions • How to use a digital device to collect data automatically • How to explain that a data logger collects ‘data points’ from sensors over time • How to use data collected over a long duration to find information 	Children will know by the end of this unit: Creating media – Photo editing <ul style="list-style-type: none"> • How to explain that digital images can be changed • How to change the composition of an image • How to describe how images can be changed for different uses • How to make good choices when selecting different tools • How to recognise that not all images are real • How to evaluate how changes can improve an image Programming B - Repetition in games <ul style="list-style-type: none"> • How to develop the use of count-controlled loops in a different programming environment • How to explain that in programming there are infinite loops and count controlled loops • How to develop a design that includes two or more loops which run at the same time • How to modify an infinite loop in a given program • How to design a project that includes repetition • To create a project that includes repetition

<ul style="list-style-type: none"> • How to show that different types of audio can be combined and played together • How to evaluate editing choices made <p>Online safety Staying Safe Online Pupils will further their understanding of online bullying and how to get help.</p>	<ul style="list-style-type: none"> • How to identify the data needed to answer questions • How to use collected data to answer questions <p>Online safety 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>Online safety 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>
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Cycle B
Year 5/6 Computing Curriculum

Autumn Computing systems and networks – Communication Creating media – Web page creation	Spring Programming A – Variables in games Data and information – Spreadsheets	Summer Creating media – 3D modelling Programming B – Sensing
Children will know by the end of this unit: Computing systems and networks – Communication <ul style="list-style-type: none"> To identify how to use a search engine To describe how search engines select results To explain how search results are ranked To recognise why the order of results is important, and to whom To recognise how we communicate using technology To evaluate different methods of online communication Creating media – Web page creation <ul style="list-style-type: none"> To review an existing website and consider its structure To plan the features of a web page To consider the ownership and use of images (copyright) To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content owned by other people 	Children will know by the end of this unit: Programming A – Variables in games <ul style="list-style-type: none"> To define a ‘variable’ as something that is changeable To explain why a variable is used in a program To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project To evaluate my project Data and information – Spreadsheets <ul style="list-style-type: none"> To identify questions which can be answered using data To explain that objects can be describes using data To explain that formulas can be used to produce calculated data To apply formulas to data, including duplicating 	Children will know by the end of this unit: Creating media – 3D modelling <ul style="list-style-type: none"> To use a computer to create and manipulate three-dimensional (3D) digital objects To compare working digitally with 2D and 3D graphics To construct a digital 3D model of a physical object To identify that physical objects can be broken down into a collection of 3D shapes To design a digital model by combining 3D objects To develop and improve a digital 3D model Programming B – Sensing <ul style="list-style-type: none"> To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device

<p>Online safety Staying Safe Online Pupils will further their understanding of online gaming and chat sites.</p>	<ul style="list-style-type: none"> • To create a spreadsheet to plan an event • To choose suitable ways to present data <p>Online safety 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>	<ul style="list-style-type: none"> • To develop a program to use inputs and outputs on a controllable device <p>Online safety 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 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.