**PARKFIELD PRIMARY SCHOOL**

**LONG TERM OVERVIEW**

**Computing** Information Technology | Digital Literacy | Computer Science – Programming | Computer Science - Theory

| | Autumn | Spring | Summer |
|---|---|---|---|
| **Year 1** | Typing skills<br>Basic word processing<br>Digital painting | Programming robots<br>Creating a multimedia e-book<br>Components of a computer<br>Technology uses beyond school<br>E-safety: basic rules<br>QR Codes | Programming sequences of commands to animate pictures<br>Internet searching skills<br>E-safety: media players<br>Basic photo editing skills |
| **Year 2** | | | |
| **Year 3** | Word processor text formatting tools<br>Photo collages<br>Creating posters using text boxes<br>Programming commands to run at different times | Algorithms<br>Using conditional events in programs<br>Digital communication methods<br>E-safety: passwords | Exploring digital maps<br>Uses of technology and their impact<br>Digital painting<br>Creating an e-book<br>E-safety: gaming safely |
| **Year 4** | URLS and the topology of the Internet<br>E-safety: child-friendly websites<br>Internet searching skills<br>Photo editing<br>Movie making<br>Online quiz making | LOGO-type programming<br>Using a variable in a program<br>Using repeat events in a program<br>Debugging | Trifold leaflet design<br>Board game design<br>Internet terminology<br>E-safety: Message sharing consequences |
| **Year 5** | Poster design<br>Spreadsheets<br>Internet searching skills<br>Drawing tools – shape pictures | E-safety: Zip it Block it Flag it<br>History of technology<br>Linear on-screen presentation<br>Using numbers in a program | E-safety: messaging safely, digital footprints, sharing safely and vlogging rules<br>Photo editing<br>Impact of technology on society |
| **Year 6** | Internet searching skills<br>App design<br>Photo editing<br>Animation presentation<br>E-safety: sharing photos safely | Algorithms and flowcharts<br>Programming complex games<br>Digital maps – route finding<br>Spreadsheet maths programs<br>E-safety: digital citizen behaviours | E-safety: concept cartoons<br>Stop motion animations<br>Binary numbers |

# Parkfield Computing Progression – Attainment Expectations

## Information Technology

| WT Y1 (ELG) | AT Year 1 | | AT Year 2 | | AT Year 3 | | AT Year 4 | | AT Year 5 | | AT Year 6 | | AB Y6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WT Y2 | AB Y1 | WT Y3 | AB Y2 | WT Y4 | AB Y3 | WT Y5 | AB Y4 | WT Y6 | AB Y5 | | |
| • Learn how to type letters quickly and correctly using a keyboard.<br>• Explore combining painting tools to make digital art.<br>• Complete a simple program on a computer.<br>• Use ICT hardware to interact with age-appropriate computer. | • Learn how to type words quickly and correctly using a keyboard.<br>• Make simple word processed documents and change the appearance of text.<br>• Use and combine a variety of painting tools to create a picture.<br>• Create simple interactive games to play.<br>• Create a multimedia e-book combining: text, painted pictures and recorded sound.<br>• Compose music using ICT. | | • Make word processed documents combining images with text.<br>• Change the appearance of text so it matches a document's theme.<br>• Use and combine a variety of brush styles and painting tools to create a picture.<br>• Compare tools for editing images saved from the web. | | • Type text into different programs and change its style by applying a range of font effects.<br>• Create documents and posters by combining text boxes with inserted images.<br>• Create a photo collage.<br>• Create a multimedia e-book combining: text, images voice recordings and shapes.<br>• Shoot a digital photo and explore tools to edit it. | | • Type and design a variety of documents, posters and leaflets using ICT.<br>• Learn rules for creating neat word processed work.<br>• Produce a multimedia video topic about topic with music and narration.<br>• Create online multiple-choice quizzes.<br>• Shoot and edit digital photos effectively.<br>• Create a word collage. | | • Enter formulae into a spreadsheet to solve calculations and model scenarios, including using =SUM() and statistical functions.<br>• Change the format of cells of cells using: text alignment, borders and data types.<br>• Create pictures using drawing tools (shapes).<br>• Create an animated GIF image.<br>• Create a multimedia on-screen presentation over several slides, adding animation and transition effects to enhance it.<br>• Compare ways for manipulating digital images to enhance them. | | • To design an information app that contains multimedia pages linked together using hyperlinks.<br>• Create an on-screen presentation with slide transitions, advanced animation effects and action buttons.<br>• Edit images using layering techniques.<br>• Create and edit a stop motion animation. | • Write spreadsheet formulae to solve maths problems (e.g. unit convertors). |

# Parkfield Computing Progression – Attainment Expectations

## Digital Literacy

| WT Y1 (ELG) | AT Year 1 | | AT Year 2 | | AT Year 3 | | AT Year 4 | | AT Year 5 | | AT Year 6 | | AB Y6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WT Y2 | AB Y1 | WT Y3 | AB Y2 | WT Y4 | AB Y3 | WT Y5 | AB Y4 | WT Y6 | AB Y5 | | |
| • Navigate around websites with guidance.<br>• Know where to go for help or support when online. | • Learn how to communicate sensibly using Showbie.<br>• Know how to use a web browser to navigate a website when doing Internet research.<br>• Search for sensible, suitable images online.<br>• Know rules for staying safe online, including how to safely use Internet media players.<br>• Scan QR codes. | | • Know how to use a web browser to navigate websites effectively when doing Internet research.<br>• Search for sensible, suitable images online and insert them into a document.<br>• Know rules for staying safe online and why they must be followed.<br>• Scan and create QR codes. | | • Compare digital communication methods, including when they are appropriate to use.<br>• Explain the features of a strong password.<br>• Know what electronic mail is and the services offered by an email client.<br>• Explore a virtual map and compare different viewing options on it.<br>• Understand how to stay safe when playing computer games. | | • Learn how to search the web effectively.<br>• Learn how to interpret URLs.<br>• Learn about the importance of only joining and using child-friendly websites.<br>• Understand that there are consequences for making bad decisions online. | | • Compare online encyclopedias for doing Internet research on.<br>• Cross-reference search results to help validate information on them.<br>• Describe online hazards and how to respond to them safely.<br>• Explain the 'Zip it, Block it, Flag it' slogan.<br>• Understand the term 'digital footprint' and describe strategies for reducing it.<br>• Know how to stay safe when watching and recording vlogs.<br>• Compare techniques used for manipulating and putting pressure on people online.<br>• Understand how to safely send text messages. | | • Learn how to evaluate the usefulness of a website.<br>• Discuss reasons for and against sharing material publicly online.<br>• Understand the importance of online consent.<br>• Learn how to safely share images online.<br>• Research localities using a digital map and use advanced tools like route finders. | | • Describe the safest response to possibly dangerous online scenarios (concept cartoons). |

# Parkfield Computing Progression – Attainment Expectations

## Computer Science - Theory

| WT Y1 (ELG) | AT Year 1 | | AT Year 2 | | AT Year 3 | | AT Year 4 | | AT Year 5 | | AT Year 6 | | AB Y6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WT Y2 | AB Y1 | WT Y3 | AB Y2 | WT Y4 | AB Y3 | WT Y5 | AB Y4 | WT Y6 | AB Y5 | | |
| • Recognise that a range of technology is used in places such as homes and schools.<br>• Identify the main parts of a computer. | • Identify and name the main components of a computer.<br>• Name common input and output devices of computer systems.<br>• Describe uses of technology beyond school. | | • Identify, name and explain the function of the main components of a computer.<br>• Name and compare common input and output devices of computer systems.<br>• Identify and describe uses of technology beyond school. | | • Identify uses of technology beyond school and discuss reasons why they are helpful (e.g. robots and simulations).<br>• Understand how a computer stores data. | | • Understand the main hardware components of a computer system, including the functions of different input and output devices.<br>• Learn how the Internet works, including how it is structured and how data travels along it.<br>• Understand how search engines operate, including how they rank results. | | • Understand how digital images are stored and displayed on a computer.<br>• Describe the impact of technology on society, including on people's: spiritual, moral, social and cultural development.<br>• Understand what e-commerce is and what its impact is.<br>• Find out about the history of computing.<br>• Describe uses of GPS. | | • Describe the services offered by the Internet.<br>• Understand the history of WWII computer code breaking. | • Understand how binary numbers work. |

# Parkfield Computing Progression – Attainment Expectations

## Computer Science - Programming

| WT Y1 (ELG) | AT Year 1 | | AT Year 2 | | AT Year 3 | | AT Year 4 | | AT Year 5 | | AT Year 6 | | AB Y6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WT Y2 | AB Y1 | WT Y3 | AB Y2 | WT Y4 | AB Y3 | WT Y5 | AB Y4 | WT Y6 | AB Y5 | | |
| • Understand that an algorithm is a sequence of instructions which can programmed on a digital device.<br>• Design computer programs in which pictures animate around a scene in an order. | • Follow simple algorithms to make things happen.<br>• Control real and on-screen robots to move along routes using numerical commands (e.g. forward 3).<br>• Design computer programs in which pictures animate around a scene based on different events – at the start, when they are clicked on and when you swipe the screen.<br>• Debug programs with support so they run correctly. | | • Write and share simple algorithms for others to follow.<br>• Enter LOGO commands to program a robot turtle so it draws shapes and patterns.<br>• To design computer programs in which pictures animate around a scene based on different events – at the start, when they are clicked on, with button presses and when you swipe the screen.<br>• Debug programs with a little support so they run correctly. | | • Use logical reasoning to write simple algorithms explaining the sequence commands should run in.<br>• Program a sequence of actions using timings to create a simple animation.<br>• Write code that includes conditional events (e.g. run commands when objects hit).<br>• Debug programs independently so they run correctly. | | • Use logical reasoning to create simple flowcharts explaining the sequence commands should run in.<br>• Enter and repeat LOGO commands to program an on-screen turtle so it draws shapes, patterns and pictures.<br>• Create games and apps that include variables in them (e.g. as a score counter).<br>• Test, debug and improve programs with support. | | • Design and program games that include variables (e.g. for a score counter) and changing object properties (e.g. the speed and direction of a moving car).<br>• Generate random numbers in code.<br>• Test, debug and improve programs independently. | | • To create flowcharts of real life systems showing how steps of algorithms are linked together.<br>• To design and program games that include conditional events, score variables, random number generators and time limits. | • To learn how to write code using a text-based language (e.g. Python and/or HTML).<br>• Detect and correct errors in programs (syntax and logical bugs). |

**PARKFIELD PRIMARY SCHOOL**
**LONG TERM OVERVIEW**
**Computing**

| Year | Information Technology | Digital Literacy | Computer Science - Programming | Computer Science - Theory |
|---|---|---|---|---|
| **Year 1** | • To learn how to type words quickly and correctly using a keyboard.<br>• To make simple word processed documents and change the appearance of text.<br>• To use and combine a variety of brush styles and painting tools to create a picture.<br>• To create simple interactive games to play.<br>• To create a multimedia e-book combining: text, painted pictures and recorded sound.<br>• To compose music using ICT.<br>• To compare tools for editing images saved from the web. | • To learn how to communicate sensibly using Showbie.<br>• To know how to use a web browser to navigate a website when doing Internet research.<br>• To search for sensible, suitable images online and insert them into a document.<br>• To explain how to stay safe online and where to go for help or support, including how to safely use Internet media players.<br>• To scan and create QR codes. | • To understand that an algorithm is a sequence of instructions which can programmed on a digital device.<br>• To follow simple algorithms to make things happen.<br>• To write and share simple algorithms for others to follow.<br>• To control real and on-screen robots to move along routes using numerical commands (e.g. forward 3).<br>• To enter LOGO commands to program a robot turtle so it draws shapes and patterns.<br>• To design computer programs in which pictures animate around a scene based on different events – at the start, when they are clicked on, with button presses and when you swipe the screen.<br>• To debug programs so they run correctly. | • To identify, name and explain the function of the main components of a computer.<br>• To name and compare common input and output devices of computer systems<br>• To identify and describe uses of technology beyond school. |
| **Year 2** | | | | |

| Year | Information Technology | Digital Literacy | Computer Science - Programming | Computer Science - Theory |
|---|---|---|---|---|
| **Year 3** | • To type text into different programs and change its style by applying a range of font effects.<br>• To create documents and posters by combining text boxes with inserted images.<br>• To create a photo collage.<br>• To create a multimedia e-book combining: text, images voice recordings and shapes.<br>• To shoot a digital photo and explore tools to edit it. | • To compare digital communication methods, including when they are appropriate to use.<br>• To explain the features of a strong password.<br>• To know what electronic mail is and the services offered by an email client.<br>• To explore a virtual map and compare different viewing options on it.<br>• To understand how to stay safe when playing computer games. | • To use logical reasoning to write simple algorithms explaining the sequence commands should run in.<br>• To program a sequence of actions using timings to create a simple animation.<br>• To test, debug and improve programs.<br>• To write code that includes conditional events (e.g. run commands when objects hit). | • To identify uses of technology beyond school and discuss reasons why they are helpful (e.g. robots and simulations).<br>• To understand how a computer stores data.<br>• |
| **Year 4** | • To type and design a variety of documents, posters and leaflets using ICT.<br>• To learn rules for creating neat word processed work.<br>• To produce a multimedia video topic about topic with music and narration.<br>• To create online multiple-choice quizzes.<br>• To shoot and edit digital photos effectively.<br>• To create a word collage. | • To learn how to search the web effectively.<br>• To learn how to interpret URLs.<br>• To learn about the importance of only joining and using child-friendly websites.<br>• To understand that there are consequences for making bad decisions online. | • To use logical reasoning to create simple flowcharts explaining the sequence commands should run in.<br>• To enter and repeat LOGO commands to program an on-screen turtle so it draws shapes, patterns and pictures.<br>• To create games and apps that include variables in them (e.g. as a score counter).<br>• To test, debug and improve programs. | • To understand the main hardware components of a computer system, including the functions of different input and output devices.<br>• To learn how the Internet works, including how it is structured and how data travels along it.<br>• To understand how search engines operate, including how they rank results. |

| Year | Information Technology | Digital Literacy | Computer Science - Programming | Computer Science - Theory |
|---|---|---|---|---|
| **Year 5** | • To enter formulae into a spreadsheet to solve calculations and model scenarios, including using =SUM() and statistical functions.<br>• To change the format of cells of cells using: text alignment, borders and data types.<br>• To create pictures using drawing tools (shapes).<br>• To create an animated GIF image.<br>• To create a multimedia on-screen presentation over several slides, adding animation and transition effects to enhance it.<br>• To compare ways for manipulating digital images to enhance them. | • To compare online encyclopedias for doing Internet research on.<br>• To cross-reference search results to help validate information on them.<br>• To describe online hazards and how to respond to them safely.<br>• To explain the 'Zip it, Block it, Flag it' slogan.<br>• To understand the term 'digital footprint' and describe strategies for reducing it.<br>• To know how to stay safe when watching and recording vlogs.<br>• To compare techniques used for manipulating and putting pressure on people online.<br>• To understand how to safely send text messages. | • To design and program games that include variables (e.g. for a score counter) and changing object properties (e.g. the speed and direction of a moving car).<br>• To generate random numbers in code.<br>• To detect and correct errors in programs (syntax and logical bugs). | • To understand how digital images are stored and displayed on a computer.<br>• To describe the impact of technology on society, including on people's: spiritual, moral, social and cultural development.<br>• To understand what e-commerce is and what its impact is.<br>• To find out about the history of computing.<br>• To describe uses of GPS. |
| **Year 6** | • To design an information app that contains multimedia pages linked together using hyperlinks.<br>• To create an on-screen presentation with slide transitions, advanced animation effects and action buttons.<br>• To write spreadsheet formulae to solve maths problems (e.g. unit convertors).<br>• To edit images using layering techniques.<br>• To create and edit a stop motion animation. | • To learn how to evaluate the usefulness of a website.<br>• To discuss reasons for and against sharing material publicly online.<br>• To understand the importance of online consent.<br>• To learn how to safely share images online.<br>• To research localities using a digital map and use advanced tools like route finders.<br>• To describe the safest response to possibly dangerous online scenarios (concept cartoons). | • To create flowcharts of real life systems showing how steps of algorithms are linked together.<br>• To design and program games that include conditional events, score variables, random number generators and time limits.<br>• To detect and correct errors in programs (syntax and logical bugs).<br>• To learn how to write code using a text-based language (e.g. Python and/or HTML). | • To describe the services offered by the Internet.<br>• To understand the history of WWII computer code breaking.<br>• To understand how binary numbers work. |