Computing

Intent	At Inglehurst Infant School, we aim to prepare learners for their future by providing them with high quality computing lessons that will teach them the knowledge and skills they will need to equip them in later life. We understand that our pupils are living in a world surrounded by devices and technology and they need to be taught how to thrive as digital citizens. We want to ensure pupils become confident and competent at using a range of technology positively, responsibly and safely. We ensure at our school that Online Safety is at the forefront of everything we do. We provide e-safety lessons throughout school so that pupils can use technology responsibly and safely in school and at home. Pupils are taught what to do if they are concerned or worried about anything they see on their devices and where they can go to get help or support. We follow the guidance from the 'thinkuknow' website www.thinkuknow.co.uk in KS1 and in EYFS we follow guidance from https://www.childnet.com . The children have a whole school assembly on e-safety annually and complete a multitude of online safety lessons in class as well as taking part in online safety day.
Implementation	In the Early Years, ICT is taught to gain a greater Understanding of the world by recognising that a range of technology is used in their homes and at school. In each Early Years classroom there will be computing resources available at all times as part of continuous provision. Children in Early years also have a weekly slot available for accessing the school IPAD's. The children will learn how to operate simple equipment, they will have opportunity to experiment and explore with technological toys with knobs and pulleys as well as using real objects such as camera's, beebots, and microphones. The children will explore how things work and how things happen. Children in the Early years will use a range age appropriate computer software and learn how to complete simple computer programmes. In KS1 we follow the National curriculum for computing (2014). We ensure our teaching implements the three main parts of the National curriculum; digital Literacy, information technology and computer Science. Our computing curriculum was designed to link with the two year rolling topic programme we follow at our school. The curriculum builds upon pupil's prior knowledge and skills. We recognise that ICT can be taught both discreetly and taught to enhance or provide extra learning opportunities in other areas of the curriculum. Pupils have regular computing lessons practising their computing skills using IPAD' s, laptops or other technological software. Children learn how use a range of computing programmes, apps and software including; Microsoft office, scratch, 2 create, 2 type, revelation natural art, clicker 7, beebot educational apps, I- movie app and sketch nation. By the end of KS1 pupils will be able to; • use technology to purposefully to create, store, manipulate and retrieve digital content. • use technology safely and respectively and know where to go for help and support. • recognise uses of technology beyond school. • create and debug simple programmes. • understand what algorithms are. • predict the behaviour of simple programmes.
Impact	Monitoring of the teaching and learning of computing takes place using pupil interviews, staff questionnaires, through professional dialogue and the scrutiny of children's work on the server, in topic books and on display boards. By the end of KS1 all children are competent and confident using a range of technology respectfully and safely. They have learnt skills that are transferrable and can support their learning in other areas of the curriculum. They will have also learnt skills that can be built upon to support them in later life whether in their places of work or study. Children have developed a good understanding of online safety by the end of KS1 and know how stay safe and how to behave responsibly online.

Experience for all children
• Online Safety assembly to celebrate Internet safety day. • 'Hands on' experiences with a variety of technology

Computer Science				
	EYFS	Year 1	Year 2	Year 3
Hardware	• Learning how to operate a camera to take photographs of meaningful creations or moments • Learning how to explore and tinker with hardware to develop familiarity and introduce relevant vocabulary • Learning how to operate a camera • Recognising that a range of technology is used in places such as homes and schools • Learning what a keyboard is and how to locate relevant keys • Learning what a mouse is and developing basic mouse skills such as moving and clicking	• Learning how to explore and tinker with hardware to find out how it works • Understanding that computers and devices around us use inputs and outputs, identifying some of these • Learning where keys are located on the keyboard • Learning how to operate a camera	• Understanding what a computer is and that it's made up of different components • Recognising that buttons cause effects and that technology follows instructions • Learning how we know that technology is doing what we want it to do via its output. • Using greater control when taking photos with tablets or computers • Developing confidence with the keyboard and the basics of touch typing	• Understanding what the different components of a computer do and how they work together • Drawing comparisons across different types of computers • Learning what a server does
Networks and data representation		•what the internet is		• Learning what a network is and its purpose • Identifying the key components within a network, including whether they are wired or wireless • Recognising links between networks and the internet • Learning how data is transferred
Computational thinking	• Using logical reasoning to read simple instructions and predict the outcome	• Learning that decomposition means breaking a problem down into smaller parts • Using decomposition to solve unplugged challenges • Using logical reasoning to predict the behaviour of	• Articulating what decomposition is • Decomposing a game to predict the algorithms used to create it • Using decomposition to decompose a story into smaller parts	• Using decomposition to explain the parts of a laptop computer • Using decomposition to explore the code behind an animation • Using repetition in programs • Understanding that computers follow instructions

		simple programs • Developing the skills associated with sequencing in unplugged activities • Learning that an algorithm is a set of step by step instructions used to carry out a task, in a specific order • Follow a basic set of instructions • Assembling instructions into a simple algorithm	• Learning what abstraction is • Learning that there are different levels of abstraction • Explaining what an algorithm is • Following an algorithm • Creating a clear and precise algorithm • Learning that computers use algorithms to make predictions • Learning that programs execute by following precise instructions • Incorporating loops within algorithms	• Using an algorithm to explain the roles of different parts of a computer • Using logical reasoning to explain how simple algorithms work • Explaining the purpose of an algorithm • Forming algorithms independently
Programming	• Following instructions as part of practical activities and games and learning to debug when things go wrong • Learning to give simple instructions • Learning that an algorithm is a set of instructions to carry out a task, in a specific order • Experimenting with programming a Bee-bot/Bluebot and learning how to give simple commands • Learning to debug instructions, with the help of an adult, when things go wrong	• Programming a Bee-bot/Virtual Bee-bot to follow a planned route • Learning to debug instructions when things go wrong • Developing a how to video to explain how the Bee-bot works. • Learning to debug an algorithm in an unplugged scenario	• Using logical thinking to explore software, predicting, testing and explaining what it does • Using an algorithm to write a basic computer program • Learning what loops are • Incorporating loops to make code more efficient	• Using logical thinking to explore more complex software; predicting, testing and explaining what it does • Incorporating loops to make code more efficient • Remixing existing code • Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected

Information technology				
	EYFS	Year 1	Year 2	Year 3
Using Software	• Following instructions as part of practical activities and games and learning to debug when things go wrong • Learning to give simple instructions • Learning that an algorithm is a set of instructions to carry out a task, in a specific order • Experimenting with programming a Bee-bot/Bluebot and learning how to give simple commands • Learning to debug instructions, with the help of an adult, when things go wrong	• Programming a Bee-bot/Virtual Bee-bot to follow a planned route • Learning to debug instructions when things go wrong • Developing a how-to video to explain how the Bee-bot works. • Learning to debug an algorithm in an unplugged scenario	• Using logical thinking to explore software, predicting, testing and explaining what it does • Using an algorithm to write a basic computer program • Learning what loops are • Incorporating loops to make code more efficient	• Using logical thinking to explore more complex software; predicting, testing and explaining what it does • Incorporating loops to make code more efficient • Remixing existing code • Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected
Using email and the internet	• Using a simple online paint tool to create digital art	• Using a basic range of tools within graphic editing software • Taking and editing photographs • Understanding how to create digital art using an online paint tool • Developing control of the mouse through dragging, clicking and resizing of images to create different effects • Developing understanding of different software tools	• Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts • Using word processing software to type and reformat text • Using software to create story animations • Creating and labelling images	• Taking photographs and recording video to tell a story. • Using software to edit and enhance their video adding music, sounds and text on screen with transitions
Using data	• Representing data through sorting and categorising objects in unplugged scenarios • Representing data through pictograms • Exploring branch databases through physical games	• Introduction to spreadsheets • Representing data in tables, charts and pictograms • Sorting data and creating branching databases • Identifying where digital content can have advantages over paper when storing and manipulating data	• Collecting and inputting data into a spreadsheet • Interpreting data	• Understanding the vocabulary associated with databases: field, record, data • Learning about the pros and cons of digital versus paper databases • Sorting and filtering databases to easily retrieve information • Creating and interpreting charts and graphs to understand data

Wider use of technology		• Recognising common uses of information technology, including beyond school • Understanding some of the ways we can use the internet	• Learning how computers are used in the wider world	• Understanding the purpose of emails. • Learning what a search engine is • Recognising how social media platforms are used to interact

Digital Literacy				
	EYFS	Year 1	Year 2	Year 3
	• Recognising that a range of technology is used in places such as homes and schools • Learning to log in and log out • When using the internet alongside an adult, or independently, learning what to do if they come across something that worries them or makes them feel uncomfortable	• Logging in and out and saving work on their own account • Understand the importance of a password • When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable • Recognising when someone has been unkind online • Learning some top tips for staying safe online • Understanding how we 'share' information on the internet	• Understanding that personal information should not be shared on the internet. • Learning how to be respectful to others when sharing content online.	• Learning to be a responsible digital citizen; understanding their responsibilities to treat others respectfully and recognising when digital behaviour is unkind • Learning about cyberbullying • Learning that not all emails are genuine, recognising when an email might be fake and what to do about it • Learning that not all information on the internet is factual • Understanding who personal information should/ should not be shared with

KS1		
Term	Cycle A	Cycle B
Autumn	Fun and games; E-safety Equipment rules Switching on/ shutting down/ logging on mouse and keyboard skills. Let's celebrate; Video recording E-safety Similarities and differences of technology past and present.	Marvellous me; -E-safety- CEOP Jessie and friends' videos. -IPAD Skills- taking pictures and video recordings. Light, Camera, Action; -Recognises uses of technology used outside of school. -E-safety posters -Puppet pals' app- creating animations. -Film a weather or news report.

Vocabulary	Internet, Online strangers, E-safety, Personal information, Support, switching on, shutting down, trackpad, click, drag, drop, cursor, mouse double click, type, open, close, scroll, log on, password, delete, erase, select, drawing tool	Internet, online strangers, E-safety, personal information, support, TAG- Tell and grown up camera, swipe ,app, click, record, video, pause, play, capture, view, delete ,computers, media, mouse, keyboard, I-Pads, technology, phones , advertising, online safety ,private/personal information, cyber threats, stranger danger, Log in, password/code, recording, sound effects, filming, button, passcode, press
Spring	**Food glorious food;** Sketch nation app- coding. Researching skills. PowerPoint Internet safety assembly. (date TBC) **The nature of the beast;** Revelation natural art- digital art. Researching skills	**Extreme Explorers;** Bee bots – programming and algorithms What is the Internet? What can we use it for? Internet research- Explorers. Online safety day. 8th February 2022. (Whole school assembly) **Ingenious Inventions;** What Technology we use beyond school and how it works. Sketch Nation App- Coding, create a game.
Vocabulary	Chart, table ,data ,collect ,input ,select ,type ,tab ,scroll, film ,props, plan, clips, video ,record ,play ,pause ,stop ,review ,delete ,select ,open ,app ,new project ,add ,clips, select, tool bar ,trackpad, Internet , search engine ,tab ,website address ,type ,research	Directions, algorithms, instructions, forwards, backwards, left turn, right turn, 90 degrees, 180 degrees, clockwise, anticlockwise, programmer, robot, **Treasure map, grid, bee-bot, directions, predictions, instructions, buttons, input, output, programmable,** **Internet, web address, search engine, safe search, research, facts, Internet safety, respect, online, personal information.**
Summer	**Stories around the world;** Data handling. Making a film/ video clip on I movie. **Blast off!** Beebots- programming and algorithms. Clicker 7- making an e- book.	**Secret Superheroes;** Design a Superhero on 2 create. Word processing skills. **The world around me;** Data handling and inputting data. Internet research skills To make a fact file on Microsoft PowerPoint.
Vocabulary	IPAD, Select, app, beebot, algorithm, predict, reason, forward, backwards, right turn, left turn, pause, play, delete, clicker 7, tool bar, e-book, image, sound, word bank, select	mouse, click, draw, font, size, drag, copy, paste, text, colour, image, insert, Chart, table, data, collect, input, select, type, tab, scroll, interpreting, tally, Internet explorer research, search engine, website, address, type, select, click, enter, e-safety, presentation slide ,text, font ,size ,background ,select ,click, scroll, highlight, Insert ,picture, type, delete