Easingwold Primary School – Computing Curriculum Progression

KS1

	Year A			Year B		
Overview	Easingwold Primary School follow the iComputing curriculum, using Chromebook and iPads to deliver the contents. These units have been carefully selected and sequenced so that they build upon each other, regardless of the year that children begin KS1. The KS1 curriculum will build upon some of the skills taught in Reception. However, for most of the children this will be the first year of formal computing teaching. There has historically been a deficiency in programming skills further up the school and the heavy emphasis on algorithms and programming in the Autumn Term for both years should give children a solid foundation understanding of programming language and skills in order to kick start their understanding and application of computer programming and algorithms.					
	Autumn	**Spring**	**Summer**	**Autumn**	**Spring**	**Summer**
	AUTUMN 1 – Year 1 - iAlgorithm Sessions 1-3 Year 1 - iProgram Sessions 1-5 AUTUMN 2 – Y1 - iAnimate Sessions 1-6	SPRING 1 – Year 1 - iSafe Sessions 1-4 SPRING 2 – Year 1 – iModel Sessions 1-4	SUMMER 1 – Year 2 – iPub Sessions 1-5 SUMMER 2 – Year 2 – iPad – Unit 1	AUTUMN 1 – Year 1 - iAlgorithm Sessions 4-6 Year 1 - iProgram Sessions 1-5 UNIT 2 AUTUMN 2 – Y2 – iProgram Sessions 1-6	SPRING 1 – Year 2 - iSafe Session 1-5 SPRING 2 – Year 1 – iData Sessions 1-4	SUMMER 1 & 2 – INCLUDE ESAFETY RECAP ACROSS BOTH UNITS Year 2 - iDo Mail Sessions 1-3 Year 2 iBlog Sessions 1-6
Unit Rationale	These units have been selected for autumn term so children have a positive, detailed introduction to programming to set them up for the rest of the year and beyond. It assumed that if children begin in Year 1, Year A, they will cover this content before moving into year 2. If children have begun in Year B, children will consolidate their understanding of this learning in these sessions.	It is important that ESafety is taught regularly and consistently throughout pupils' years at ECPS. Therefore, as well as touching on this topic regularly throughout computing sessions, children will have a dedicated unit to exploring the issue of ESafety. iModel explores how computer models work, which is the foundation for computer networks that is covered in Spring Year 3/4, Year A.	iPub focuses on computer literacy skills. If children begun in Year B, this will refresh their understanding of digital literacy. If children began in Year A, this is the first time children are introduced to digital literacy skills more formally. It was decided that by Summer term, children would be more ready to learn these skills as they have had a year exploring and becoming more proficient with Chrombooks and iPads. Summer 2 sees a return to programming to refresh the skills taught in Autumn term, ahead of moving into the next year.	These units have been selected for autumn term so children have a positive, detailed introduction to programming to set them up for the rest of the year and beyond. It assumed that if children begin in Year 1, Year B, they will cover this content first, moving back to Year A to consolidate their understanding of this learning in these sessions. If they begin in Year A, this will be a clear progression of the skills learned in previous sessions.	It is important that ESafety is taught regularly and consistently throughout pupils' years at ECPS. Therefore, as well as touching on this topic regularly throughout computing sessions, children will have a dedicated unit to exploring the issue of ESafety. The iData unit is the first introduction to data for KS1 and will be built upon in LKS2, both Year A and Year B.	This is the introduction to mail and blogging for children. If children begun in Year A, this will refresh their understanding of digital literacy. If children have begun in Year B, this is the first time children are introduced to digital literacy skills more formally. It was decided that by Summer term, children would be more ready to learn these skills as they have had a year exploring and becoming more proficient with Chrombooks and iPads.

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National Curriculum Statement	• To understand what algorithms are and how they are implemented as programs on digital devices • To understand programs execute by following precise, unambiguous, instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs • Use technology purposefully to create, organise, store, manipulate and retrieve digital content	• To use technology purposefully to create, organise, store, manipulate and retrieve digital content • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies • Identify a range of ways to report concerns about content and contact	• Use technology purposefully to create, organise, store, manipulate and retrieve digital content • Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions • create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs • Use technology purposefully to create, organise, store, manipulate and recognise common uses of information technology beyond school • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	• To understand what algorithms are and how they are implemented as programs on digital devices • To understand programs execute by following precise, unambiguous, instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs	• To use technology purposefully to create, organise, store, manipulate and retrieve digital content • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies • Identify a range of ways to report concerns about content and contact • Use technology purposefully to create, organise, store, manipulate and retrieve digital content • Recognise common uses of information technology beyond school	• Recognise common uses of information technology beyond school
Knowledge	**AUTUMN 1 –** **Year 1 - iAlgorithm** Unplugged **Year 1 - iProgram** To develop understanding that computers are controlled by a sequence of instructions in the context of programmable physical and virtual toys. **AUTUMN 2 –** **Y2 - iAnimate** Great Fire of London Storyboard – tell the story in stop motion animation. To use technology purposefully to create, organise, store and manipulate digital content. •	**SPRING 1 –** **Year 1 - iSafe** Personal information and being safe online. **SPRING 2 –** **Year 1 – iModel** Storyboard of a game or story based on Big Freeze topic. • To explore how computer models work and how they can be used to represent real or imaginary environments, situations or scenarios.	**SUMMER 1 –** **Year 2 – iPublish** Develop an e-book about Easingwold To understand the history of technology. To present their findings and develop digital literacy skills by producing a multimedia, interactive e-book. **SUMMER 2 –** Year 2 – iPad Daisy the Dinosaur Practising and recapping on programming skills from the beginning of the year. To use simple programming and algorithms in the context of a cartoon, to manipulate certain actions. • To recap the basics of objects, sequencing, repetition and events handling.	**AUTUMN 1 –** **Year 1 - iAlgorithm Sessions 4-6** Unplugged To develop basic understanding of algorithms as a set of precise instructions **Year 1 - iProgram Sessions 1-5** **UNIT 2** Scratch programming To develop understanding that computers are controlled by a sequence of instructions in the context of coding blocks **AUTUMN 2 –** **Y2 – iProgram** **Sessions 1-6** Animation of 3 little pigs. To use programming language and block coding •	**SPRING 1 –** **Year 2 - iSafe** **Session 1-5** Personal information and being safe online. **SPRING 2 –** **Year 1 – iData** **Sessions 1-4** Use mathematical context linked to topic. For example India population vs England population. To collect, organise and represent data using digital graphing tools. •	**SUMMER 1 & 2 –** **INCLUDE ESAFETY RECAP ACROSS BOTH UNITS** **Year 2 - iDo Mail Sessions 1-3** Email local suppliers to find out more information about the food we eat. To understand that email can be used over distances. To develop reading, writing and digital literacy. To use technology safely and respectfully, keeping personal information private. **Year 2 iBlog** **Sessions 1-6** Post and update posts on SeeSaw about current learning. Learn how to respond to comments respectfully. To develop reading, writing and digital literacy. • To use technology safely and respectfully, keeping personal information private.

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Skills	• To follow a simple algorithm. • To devise a simple programme • To understand that algorithms are a precise set of instructions to be followed. • To make predictions based on an algorithm • To understand what animation is, including how stop-frame animation works from single picture captures. • To understand that animation consists of characters, a stage, sound and a story. • To understand that stop-motion animation involves moving physical characters, settings and props.	• To understand what being online may look like, the different feelings we can experience online and how to identify adults who can help us. • To understand that the internet is a great place to develop rewarding relationships, but that people online can manipulate others, how this can make someone feel and how to approach trusted adults to support us. • To understand that photos can be shared online and the importance of seeking permission before hand. • To understand what personal information is. • To understand that personal information is unique to us an must not be shared, unless with a close, trusted adult. • To identify characteristics of people who are worthy	• To use and understand the function of spacebar, backspace, arrow keys, caps lock and return keyboard keys. • To use two hands when typing. • To confidently use a mouse to navigate the screen, using double click to open a file or programme. • To log in to and log out of a user profile. • To understand the difference between logging off and turning a machine. • To use right-click and copy/paste to retrieve and move information. • To develop basic understanding of algorithms as a set of precise instructions • To debug instructions when the virtual or physical toy does not reach the intended destination. To use simple coding block language program, such as	• To develop basic understanding of algorithms as a set of precise instructions • To debug instructions when the virtual or physical toy does not reach the intended destination. To use simple coding block language program, such as scratch, to manipulate digital content.	• To understand what being online may look like, the different feelings we can experience online and how to identify adults who can help us. • To understand that the internet is a great place to develop rewarding relationships, but that people online can manipulate others, how this can make someone feel and how to approach trusted adults to support us. • To understand that photos can be shared online and the importance of seeking permission before hand. • To understand what personal information is. • To understand that personal information is unique to us an must not be shared, unless with a close, trusted adult. • To identify characteristics of people who are worthy	• To use and understand the function of spacebar, backspace, arrow keys, caps lock and return keyboard keys. • To use two hands when typing. • To confidently use a mouse to navigate the screen, using double click to open a file or programme. • To log in to and log out of a user profile. • To understand the difference between logging off and turning a machine. • To use right-click and copy/paste to retrieve and move information. • To explore websites by clicking on hyperlinks. • To understand that email can be used over distances. • To find and use the @ key on the keyboard • To contribute to a class email. • To contribute to a class blog and understand how to keep personal

		of trust and how to identify risky situations. • To know that technology has changed through time. • To develop understanding that computers are controlled by a sequence of instructions. • To learn about some uses of the internet. • To use language associated with the internet (e.g. search bar, link, web page) To explore websites by clicking on hyperlinks.	scratch, to manipulate digital content.		of trust and how to identify risky situations. • To collect and organise information to solve a problem. • To create a graph using digital tools. • To create a pictogram using collected data. • To sort information on a criterion. • To present data using a graph.	information safe at the same time. • To learn how to respond to comments respectfully on a class blog.
Vocabulary	Sequence; instructions; forwards; back; turn; up; down; algorithm; predict; debug; pattern; repeat Stop motion; image; animation; movie; flip book; audio;	Feelings; worry; report; technology Choose; decide; point; click; drag	forward; backward; repeat; move; turn; grow; shrink; jump; roll; spin; command; program; test; debug; execute; predict	Sequence; instructions; forwards; back; turn; up; down; algorithm; predict; debug; pattern; repeat	Information; precious; secure; safe; parents Survey; tally; information; data; pictogram; graph; software; select; click; icon	email; type; send; snail mail; to; from; communication; reply blog; online; website; text; images; audio; video; webpage; hyperlink; login; username; password

Easingwold Primary School – Computing Curriculum Progression

LKS2

	Year A			Year B		
Overview	This is the year where children will have access to 1:1 devices and will therefore be able to practise and develop the digital literacy skills they have learned in KS1. These sessions have been selected and carefully sequenced to build upon KS1 units so children are returning to and consolidating understanding from previous years, as well as extending this knowledge. The progression of Year A and B has been taken into account and where pupils begin in one year, the skills will follow on or be consolidated in the following year. There is a greater emphasis on ESafety, as we have found this to be the time when our children are more likely to use devices at home independently. There will be programming units in every year to continue to close the programming skills gap. Data is covered in every year as it is important our children can manipulate data electronically, ready for the working world.					
	Autumn	**Spring**	**Summer**	**Autumn**	**Spring**	**Summer**
	AUTUMN 1 Year 3 iProgram – Sessions 1-6 AUTUMN 1 Year 3 iSafe – Sessions 1 – 6	SPRING 1 Year 3 iData Sessions 1 – 5 SPRING 2 Year 3 iNetwork Sessions 1 - 4 RECAP ESAFETY PRINCIPLES	SUMMER 1 Year 4 iAnimate Sessions 1 - 5 SUMMER 2 Year 3 iPad Unit 1 Kodable Session 1 - 4	AUTUMN 1 Year 4 iProgram – Sessions 1-6 AUTUMN 1 Year 4 iSafe – Sessions 1 – 8	SPRING 1 Year 4 iData Sessions 1 – 5 SPRING 2 Year 3 iSimulate Sessions 1 – 5	SUMMER 1 – Year 4 iMail - Sessions 1-5 RECAP ESAFETY PRINCIPLES SUMMER 2 Year 4 iPad Unit 1 Litebot - Sessions 1-5
Unit Rationale	These iProgramming session will build on the foundations from KS1 and will use block coding to sequence events. Children will be introduced to conditional formatting blocks, 'when' and 'if'. iSafe will be taught in autumn term ahead of the other learning. Children will be taught about safety and security now they have access to devices on a 1:1 basis.	These units build on the knowledge children gained in KS1 around network models and data handling. Because of the importance of data and the cross curricular links, it will be visited twice over the 2 year period.	iAnimate follows on from the KS1 unit iAnimate, using the same skills. It is expected that children will apply their understanding from KS1, but with the addition of using frames per second and GIFs. Kodable recaps on the programming taught in autumn, giving children another chance to apply these skills.	These iProgramming session will build on the foundations from KS1 and will use block coding to sequence events. Children will be introduced to conditional formatting blocks, 'when' and 'if'. Children will be taught about safety and security now they have access to devices on a 1:1 basis.	The iData unit builds on the knowledge children gained in KS1 around data handling. Because of the importance of data and the cross curricular links, it will be visited twice over the 2 year period. iSimulate builds on from the KS1 unit, iModel but takes this learning further by exploring simulations and variables.	iMail builds on the learning from KS1 in the summer term. With the children using 1:1 devices, this will explore how to use mail further, including tone and ESafety principles learned throughout the year.

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National Curriculum Statement	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems: solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems: solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems: solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Easingwold Primary School – Computing Curriculum Progression

Skills	• To use graphical programming language, such as Scratch, to draw regular 2D shapes. • To extend understanding of algorithms, using precise instructions in a range of digital contexts to begin to create digital content. • To recognise when instructions will not work and debug them by correcting a sequence of events. • To use fewer blocks to carry out commands by introducing and developing understanding of repeat and loop coding block. • To understand their responsibility as a digital citizen and that all information that goes on the internet can never be deleted. • To recognise when an encounter does not feel right and understand some measures that can be taken to stay safe. • To identify the benefits of sharing information online, but also risks. • To distinguish between personal information which is and isn't safe to share. • To raise awareness of appropriateness and inappropriate contents online and to understand the consequences of sharing without consent. • To understand how we can protect ourselves online.	• To understand how information in a database is organised. • To understand the advantages of a computer basted database over a paper one. • To find and enter information to create additional records in a database. • To understand that a network connects devices together and makes it possible to transfer data and knowledge. • To know the key parts of a computer network and how information is exchanged between devices. • To understand how data travels through a network. • To understand that devices on networks have a unique address. • To use language associated with the internet (e.g. URL, tab, search engine)	• To understand that animation can be created using digital tools. • To sequence and create a basic digital animation. • To trim and arrange clips to convey meaning. • To add titles, credits, slide transitions and special effects to a clip. • To research information on the internet copying information and combining with other sources about the same topic in a document. • To copy and paste graphics into a programme, resizing and rotating an image. • To record, save and retrieve sound clips to add to a programme.	• To use graphical programming language, such as Scratch, to draw regular 2D shapes. • To extend understanding of algorithms, using precise instructions in a range of digital contexts to begin to create digital content. • To recognise when instructions will not work and debug them by correcting a sequence of events. • To use fewer blocks to carry out commands by introducing and developing understanding of repeat and loop coding block. • To understand their responsibility as a digital citizen and that all information that goes on the internet can never be deleted. • To recognise when an encounter does not feel right and understand some measures that can be taken to stay safe. • To identify the benefits of sharing information online, but also risks. • To distinguish between personal information which is and isn't safe to share. • To raise awareness of appropriateness and inappropriate contents online and to understand the consequences of sharing without consent. • To understand how we can protect ourselves online.	• To understand how information in a database is organised. • To understand the advantages of a computer basted database over a paper one. • To find and enter information to create additional records in a database. • To use graphical programming language, such as Scratch, to draw regular 2D shapes. • To extend understanding of algorithms, using precise instructions in a range of digital contexts to begin to create digital content. • To recognise when instructions will not work and debug them by correcting a sequence of events. • To use fewer blocks to carry out commands by introducing and developing understanding of repeat and loop coding block.	• To understand how email travels over networks and how to retrieve them. • To know how to attach a file to an email. • To use email to communicate ideas. • To use the enter or return key rather than the mouse enter your command. • To increase typing speed with both hands. • To use shift to trigger caps lock ability whilst typing in lowercase. • To open and navigate files and documents confidently using double click action to open. • To save and print work from a range of sources. • To use ctrl & c (copy) and ctrl & v (paste) keyboard shortcuts to retrieve and move information.

Easingwold Primary School – Computing Curriculum Progression

	• To understand the need for a strong password, how passwords should never be shared and applying the characteristics of a strong password to password creation. • To identify different forms of advertising online and how to protect ourselves against them. • To notice the difference between positive and hurtful interactions and generate solutions for cyber bullying. • To distinguish between when it is appropriate and harmful to use other people's work online. • To explore strategies for identifying different forms of spam and safely managing unwanted messages.			• To understand the need for a strong password, how passwords should never be shared and applying the characteristics of a strong password to password creation. • To identify different forms of advertising online and how to protect ourselves against them. • To notice the difference between positive and hurtful interactions and generate solutions for cyber bullying. • To distinguish between when it is appropriate and harmful to use other people's work online. • To explore strategies for identifying different forms of spam and safely managing unwanted messages.		
Knowledge	**AUTUMN 1** **Year 3 iProgram –** **Sessions 1-6** Create an animated character in keeping with the stone age topic. To design, write and debug programs using coding blocks in the context of game development. **AUTUMN 1** **Year 3 iSafe –** **Sessions 1 – 6** Downloaded from Common Sense Media	**SPRING 1** **Year 3 iData** **Sessions 1 – 5** Just2Easy Database J2Data To organise and interrogate data in a database. Database of information relating to holiday in Egypt. **SPRING 2** **Year 3 iNetwork** **Sessions 1 - 4**	**SUMMER 1** **Year 4 iAnimate** **Sessions 1 - 5** Animate Greek Myth. To design and create computer animations ad combine this with narratives to create own animated stories. **SUMMER 2** **Year 3 iPad Unit 1** **Kodable** **Session 1 - 4**	**AUTUMN 1** **Year 4 iProgram –** **Sessions 1-6** To create a maze to run away from the volcano. To design, write and debug programs using written code. **AUTUMN 1** **Year 4 iSafe –** **Sessions 1 – 8** Downloaded from Common Sense Media To develop knowledge, understanding and skills	**SPRING 1** **Year 4 iData** **Sessions 1 – 5** Just2Easy Database J2Data To organise and interrogate data in a database. **SPRING 2** **Year 3 iSimulate** **Sessions 1 – 5** Explore simulations in the context of electricity and simulating a real life circuit.	**SUMMER 1 –** **Year 4 iMail** **Sessions 1-5** Email to different nature charities to find out more about their work. E.g. The Wildlife Trust To learn about communicating safely over distances. **RECAP ESAFETY PRINCIPLES** **SUMMER 2** **Year 4 iPad Unit 1** **Litebot** **Sessions 1-5**

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	To develop knowledge, understanding and skills necessary to be a safe and responsible digital citizen.	To explore the difference between the internet and the World Wide Web and understand how some networks work. Use the internet to search safely and effectively. **RECAP ESAFETY PRINCIPLES**	To extend understanding of algorithms and programming, debugging programs using a game-based learning app.	necessary to be a safe and responsible digital citizen.	To learn how to explore simulations, investigate options. To test their predictions and debug sequences.	To extend understanding of algorithms and programming, debugging programs using a coding app.
Vocabulary	Sprite; up; down; left; right; x; y; axis; coordinates; sequence; programme; debug; run script	database; record; question; field; data; enter Device; network; switch; server; wireless access point (WAP); WIFI; router; LAN (local access network)	design; plan; animate; storyboard; test; debug; edit; animation; frame; sequence; frame rate; FPS (Frames per second); CGI; GIF (Graphics Interchange Format)	Sprite; up; down; left; right; x; y; axis; coordinates; sequence; programme; debug; run script	binary; series; base; on; off; data; digital simulation; rule; pattern; variable; input; output	Email; send; receive; internet; mail; inbox; log in; log out; telecommunications; email address; server

Easingwold Primary School – Computing Curriculum Progression

UKS2

	Year A			Year B		
Overview	In these years, children will still have access to 1:1 devices and will be mostly proficient in using these in every day contexts. The progression of Year A and B has been taken into account and where pupils begin in one year, the skills will follow on or be consolidated in the following year. These units build on learning from the previous 2 years and there will be an emphasis on ESafety teaching around more mature matters, such as online communication, the validity of online content and how to report offensive behaviour. The foundations of good programming teaching will support the more difficult java and script coding opportunities. There will be programming units in every year to continue to close the programming skills gap.					
	Autumn	**Spring**	**Summer**	**Autumn**	**Spring**	**Summer**
	AUTUMN 1 Year 5 iProgram Unit 1 Sessions 1 – 8 AUTUMN 2 Year 5 iSafe Sessions 1-6 OR Year 6 iSafe Sessions 1 -9 (condensed as needed)	SPRING 1 Year 5 iWeb Sessions 1 – 5 SPRING 2 Year 6 iApp Unit 1 Sessions 1 – 6	SUMMER 1 Year 5 iCrypto Sessions 1 – 6 SUMMER 2 Year 5 iDraw Sessions 1-6	AUTUMN 1 Year 5 iSafe Sessions 1-6 OR Year 6 iSafe Sessions 1 -9 (condensed as needed) AUTUMN 2 Year 6 iNetwork Sessions 1 – 5	SPRING 1 Year 6 iApp Unit 2 Sessions 1 – 7 SPRING 2 Year 6 iData Sessions 1 - 5	SUMMER 1 Year 6 iProgram Unit 1 testing SUMMER 2 Year 5 iModel Sessions 1 - 6
Unit Rationale	Children begin with iProgram to develop computational thinking using block coding, with a greater focus on variables and how they work. Because Year 5/6 are pure year groups, children will study the Esafety unit appropriate for their year group.	iWeb follows on from the KS1 unit of iModel and the KS2 unit of iNetworks and iSumulate. The Y6 iApp brings together the skills of programming and apply the skills to a project, allowing children to take more ownership. The rationale being that by Y6, they should have the skills necessary to produce a project like this.	iCrypto follows on from the iMail units, but looks at the progression of messaging and encrypted messaging. Children should have the understanding of how mail works now to apply this to how we got to this point. iDraw introduces children to images and shapes and is in Summer 2 as children will now have a good understanding of handling and manipulating mouse movements.	Because Year 5/6 are pure year groups, children will study the Esafety unit appropriate for their year group. iNetwork follows on from the KS1 unit of iModel and the KS2 unit of iNetworks and iSumulate and brings the learning together using more technical vocabulary and complicated structures	The Y6 iApp brings together the skills of programming and apply the skills to a project, allowing children to take more ownership. The rationale being that by Y6, they should have the skills necessary to produce a project like this. This is the final data unit and looks at spreadsheets, formulae and advanced options in the programme.	Children begin with iProgram to develop computational thinking using block coding, with a greater focus on conditioning formats and programing according to a plan. iModel is a chance for children to experience graphic design ahead of moving to secondary school.

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National Curriculum Statement	• Design, write and debug programs that accomplish spific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	• Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • Design, write and debug programs that accomplish spific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Design, write and debug programs that accomplish spific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input and output	• Design, write and debug programs that accomplish spific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Use technology safely, respectfully and responsibly; recognise • cceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	• Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • Design, write and debug programs that accomplish spific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• Design, write and debug programs that accomplish spific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts • Use sequence, selection and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Easingwold Primary School – Computing Curriculum Progression

Skills	• To understand the history of computing and how binary coding paved the way for algorithms and digital coding. • To use growing knowledge of icon-based programming and algorithms, such as scratch and Kodu, to manipulate digital content. • To introduce a basic language of JavaScript and understand how to create basic commands and apply computational thinking. • To anticipate if instructions will not work and debug sequences before testing them, adjusting them further if they do not have the intended outcome. • To use the most effective combination of coding blocks, including conditional statements, variables and external triggers to manipulate digital content.	• To know that networks allow users to communicate and share information. • To know that a router sends and receives information as packets of data. • To know that computers linked to the internet have their own IP address. • To know that websites can be traced to a particular web server. • To know that search engines maintain and rank an index of websites. • To use clear search terms to narrow down searches on the internet. • To know websites are written in HTML. • To begin to read and write basic HTML coding. • To use language associated with the internet (e.g. HTML, indexing, IP) • To understand the history of computing and how binary coding paved the way for algorithms and digital coding. • To use growing knowledge of icon-based programming and algorithms, such as scratch and Kodu, to manipulate digital content. • To introduce a basic language of JavaScript and understand how to create basic commands and apply computational thinking. • To anticipate if instructions will not work and debug sequences before testing them, adjusting them further if they do not have the intended outcome. • To use the most effective combination of coding blocks, including conditional statements, variables and	• To understand the history of computing and how binary coding paved the way for algorithms and digital 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testing them, adjusting them further if they do not have the intended outcome. • To use the most effective combination of coding blocks, including conditional statements, variables and external triggers to manipulate digital content. • **<u>Year 6</u>** • To explore and customise the right security and privacy settings, including two-factor verification. • To identify situations of harassment or online bullying online and learn specific ways to respond to cyber bulling if you witness it. • To evaluate what it means to be a bystander or upstander online and how to behave if you experience harassment. • To learn there are different ways to intervene in specific situations and choose how to respond from various options that feel safe to the individual.	• To know that networks allow users to communicate and share information. • To know that a router sends and receives information as packets of data. • To know that computers linked to the internet have their own IP address. • To know that websites can be traced to a particular web server. • To know that search engines maintain and rank an index of websites. • To use clear search terms to narrow down searches on the internet. • To know websites are written in HTML. • To begin to read and write basic HTML coding. • To use language associated with the internet (e.g. HTML, indexing, IP) • To use growing knowledge of icon-based programming and algorithms, such as scratch and Kodu, to manipulate digital content. • To introduce a basic language of JavaScript and understand how to create basic commands and apply computational thinking. • To anticipate if instructions will not work and debug sequences before testing them, adjusting them further if they do not have the intended outcome. • To use the most effective combination of coding blocks, including conditional statements, variables and	• To understand the history of computing and how binary coding paved the way for algorithms and digital coding. • To use growing knowledge of icon-based programming and algorithms, such as scratch and Kodu, to manipulate digital content. • To introduce a basic language of JavaScript and understand how to create basic commands and apply computational thinking. • To anticipate if instructions will not work and debug sequences before testing them, adjusting them further if they do not have the intended outcome. • To use the most effective combination of coding blocks, including conditional statements, variables and external triggers to manipulate digital content. • To identify some parts of a spreadsheet, including cell references. • To understand the advantages of a spreadsheet and how it is difference to a database. • To understand that spreadsheets can be used to store numerical data and carry out calculations. • To know how to enter and run formulas in a spreadsheet. • To know how to generate graphs and charts using data within a spreadsheet.

Easingwold Primary School – Computing Curriculum Progression

		external triggers to manipulate digital content.		• To identify situations when it's better to wait for face-to-face communication with a peer, opposed to using a device to respond. • To recognise that seeking help is a strength and recognise the tools of reporting abuse when online.	external triggers to manipulate digital content.	
Knowledge	**AUTUMN 1** **Year 5 iProgram** **Unit 1** **Sessions 1 – 8** To explore computational creations by designing games and exploring concepts of conditionals and repetition. **AUTUMN 2** **Year 5 iSafe** **Sessions 1-6** **OR** **Year 6 iSafe** **Sessions 1 -9 (condensed as needed)**	**SPRING 1** **Year 5 iWeb** **Sessions 1 – 5** To use basic website language of html to slice together information to create own webpage. **SPRING 2** **Year 6 iApp** **Unit 1** **Sessions 1 – 6** To introduce children to mobile app development using block-base coding language to develop an app.	**SUMMER 1** **Year 5 iCrypto** **Sessions 1 – 6** Creating and decrypting cyphers. To learn that messages throughout time have been encrypted and decrypted using ciphers. **SUMMER 2** **Year 5 iDraw** This unit introduces children to graphical draw using digital tools. They will explore how images are constructed from shapes and use a variety of geometric shapes, lines, colours, effects and layering to create graphic images.	**AUTUMN 1** **Year 5 iSafe** **Sessions 1-6** **OR** **Year 6 iSafe** **Sessions 1 -9 (condensed as needed)** **AUTUMN 2** **Year 6 iNetwork** **Sessions 1 – 5** To explore how computer networks connect people and investigate how search engines work by modelling the connections and processes involved in networking.	**SPRING 1** **Year 6 iApp** **Unit 2** **Sessions 1 – 7** To extend children's mobile app development skills using a simplified JavaScript language, so children can apply their computational thinking. **SPRING 2** **Year 6 iData** **Sessions 1 - 5** To introduce children to spreadsheets and teach them to enter information and run formulae to calculate totals and produce charts.	**SUMMER 1** **Year 6 iProgram** **Unit 1** Using the context of games development the children explore computational creation by designing games and explore the concepts of conditionals and data, iteration and incremental development and systematic testing **SUMMER 2** **Year 5 iModel** This unit introduces children to graphical modelling in three-dimensional space (3D). They will explore working with 3D shapes and design and build a model of their ideal school playground
Vocabulary	Sprite; up; down; left; right; xy coordinates; condition; if; boolean; true; false; variable	internet; communicate; world wide web; email; Instant Messaging; Skype; Facetime; FTP components; events; properties; test; debug; program; code; android; iOS; operating system;	signaling; semaphore; down, low, out, high, up; across; Communication; signal; message; data; binary; encode; decode; morse; dots; dashes; dit; dah; on; off vectors; group; resize; rotate; fill; stamp; handles;	network; internet; wired; wireless; data; devices; communicate; connected; LAN; WAN; network switch; router	mobile; smart; phone; tablet; apps; technology; touch; communication; input; output spreadsheet, cell, cell reference; calculate; formula; formulae; SUM; modelling; variables	Algorithm; plan; sprite; costume; iteration (repetition); test; bug 2D, 3D, dimensions, model, Graphics; resize; rotate; vertex; axis; evaluate

		hardware; software; conditional; handler	duplicate; layer; send to front; send to back; send Backwards; send forwards			