Information Technology Progression detail						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
· Learn how to type letters, with increasing confidence using a keyboard. · Explore combining painting tools to make digital art. · Use ICT hardware to interact with age-appropriate computer. · Learn to dictate short, clear sentences into a digital device.	· Learn how to type words quickly and correctly using a keyboard. · Make simple word processed documents and change the appearance of text. · Use and combine a variety of painting tools to create a picture.	· Make word processed documents combining images with text. · Change the appearance of text so it matches a document's theme. · Use and combine a variety of brush styles and painting tools to create a picture. · Create a multimedia e-book combining: text, painted pictures	· Type text into different programs and change its style by applying a range of font effects. · Create documents and posters by combining text boxes with inserted images. · Create a multimedia e-book combining: text, images voice recordings and shapes. · Shoot a digital photo and explore tools to edit it.	· Type and design a variety of documents, posters and leaflets using ICT. · Learn rules for creating neat word processed work. · Produce a multimedia video topic with music and narration. · Create online multiple-choice quizzes. · Shoot and edit digital photos effectively. Create a photo collage. · Create a word collage.	· Enter formulae into a spreadsheet to solve calculations and model scenarios, including using =SUM() and statistical functions. · Change the format of cells of cells using: text alignment, borders and data types. · Create a multimedia on-screen presentation over several slides, adding animation and transition effects to enhance it. · Compare ways for manipulating digital images to enhance them.	· Write spreadsheet formulae to solve maths problems (e.g. unit convertors). · Create an on-screen presentation with slide transitions, advanced animation effects and action buttons. · Edit images using layering techniques. · Create and edit a stop motion animation. · Be able to create tables
Summary of core progression in information technology						

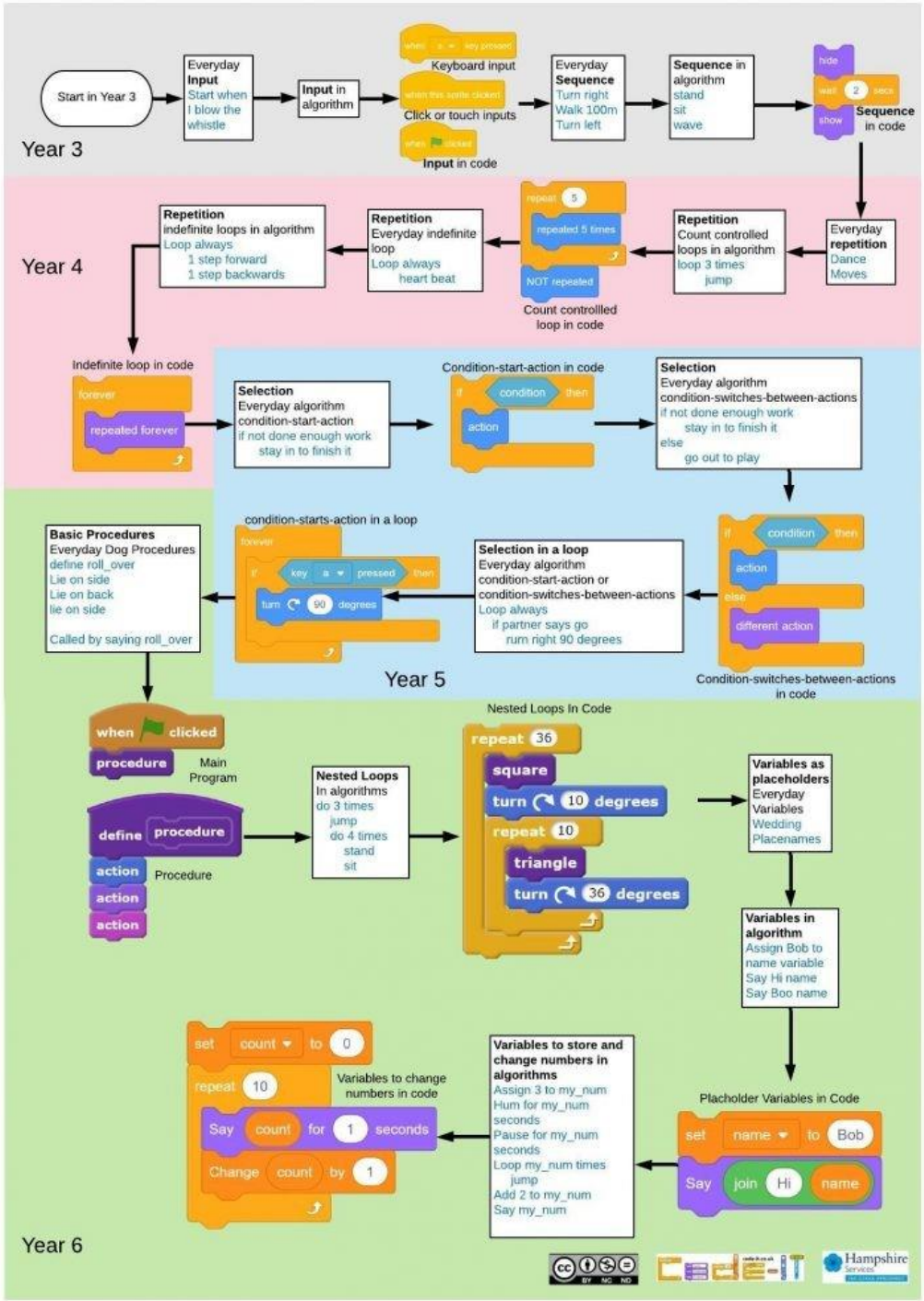
Learn to start typing and navigation around a computer word processing packages Use basic drawing packages	Improve fluency in typing words Create basic pictures	Typing speeds improving and creating e-booklets More detail to pictures	Change style and presentation of text Create more detailed e-books	Speeds of typing and navigation are now such that they can confidently use these to fulfil a range of tasks	Basic formulas in and formatting in excel Multimedia presentation with transitions	More detailed formulas in excel Advanced multimedia presentations with action buttons

Computer Science - programming						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
· Understand that an algorithm is a sequence of instructions which can be programmed on a digital device.	· Follow simple algorithms to make things happen. · Debug programs with support so they run correctly.	· Write and share simple algorithms for others to follow. · Debug programs with a little support so they run correctly.	· Use logical reasoning to write simple algorithms explaining the sequence commands should run in. · Program a sequence of actions using timings to create a simple animation. · Write code that includes conditional events (e.g. run commands when objects hit).	· Use logical reasoning to create simple flowcharts explaining the sequence commands should run in. · Test, debug and improve programs with support.	· Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation · To use condition start-action in code · To use condition switches between actions in code	· Can independently understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation · To use nested loops in code · To use variables within code Extension · To learn how to write code using a text-

			· Debug programs independently so they run correctly.		· Start to use condition-starts-action in a loop code ·	based language (e.g. Python and/or HTML). · Detect and correct errors in programs (syntax and logical bugs).
Summary of core progression in Computer Science						
	Children initially moving themselves to understand how to follow a simple algorithm. They then program a simple route for a Kubo to follow	Children progress from simple routes to include subordinate routes. Children move onto thinking about loop routes which is where they end up in year 5 with loops in block coding	We use microbits to understand simple elements of block code- They code LED lights to link with art work and flashcards for learning numbers in a foreign language – develop the wait command	Pupils develop their understanding of flowchart algorithms (links with: science and conductivity; volcanoes topic)	Pupils use loop if functions	Pupils use variables within their codes. They learn to use repeated if functions.

See table below for KS2 progression

KS2 Progression in coding


Year 3
Start in Year 3
Everyday Input
Start when I blow the whistle
Input in algorithm
Keyboard input
Click or touch inputs
Input in code
Everyday Sequence
Turn right
Walk 100m
Turn left
Sequence in algorithm
stand
sit
wave
Sequence in code
Year 4
Everyday repetition
Dance
Moves
Repetition
Count controlled loops in algorithm
loop 3 times
jump
repeat 5
repeated 5 times
NOT repeated
Count controllled loop in code
Repetition
Everyday indefinite loop
Loop always
heart beat
Repetition
indefinite loops in algorithm
Loop always
1 step forward
1 step backwards
Indefinite loop in code
forever
repeated forever
Selection
Everyday algorithm
condition-start-action
if not done enough work
stay in to finish it
Condition-start-action in code
if condition then
action
Selection
Everyday algorithm
condition-switches-between-actions
if not done enough work
stay in to finish it
else
go out to play
Year 5
Condition-switches-between-actions in code
if condition then
action
else
different action
Selection in a loop
Everyday algorithm
condition-start-action or
condition-switches-between-actions
Loop always
if partner says go
rum right 90 degrees
condition-starts-action in a loop
forever
if key a pressed then
turn 90 degrees
Basic Procedures
Everyday Dog Procedures
define roll_over
Lie on side
Lie on back
lie on side
Called by saying roll_over
Year 6
Nested Loops In Code
when clicked
procedure
Main Program
define procedure
action
action
action
Procedure
Nested Loops
In algorithms
do 3 times
jump
do 4 times
stand
sit
repeat 36
square
turn 10 degrees
repeat 10
triangle
turn 36 degrees
Variables as placeholders
Everyday
Variables
Wedding
Placenames
Variables in algorithm
Assign Bob to name variable
Say Hi name
Say Boo name
Placholder Variables in Code
set name to Bob
Say join Hi name
Variables to store and change numbers in algorithms
Assign 3 to my_num
Hum for my_num seconds
Pause for my_num seconds
Loop my_num times
jump
Add 2 to my_num
Say my_num
set count to 0
repeat 10
Say count for 1 seconds
Change count by 1
Variables to change numbers in code

Digital Literacy						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
· Navigate around websites with guidance. · Know where to go for help or support when online.	· Know how to use a web browser to navigate a website when doing Internet research. · Search for sensible, suitable images online. · Know rules for staying safe online, including how to safely use Internet media players.	· Know how to use a web browser to navigate websites effectively when doing Internet research. · Search for sensible, suitable images online and insert them into a document. · Know rules for staying safe online and why they must be followed.	· Compare digital communication methods, including when they are appropriate to use. · Explain the features of a strong password. · Understand how to stay safe when playing computer games.	· Learn how to search the web effectively. · Learn about the importance of only joining and using child-friendly websites. · Understand that there are consequences for making bad decisions online.	· Compare a range of online sites for doing Internet research on. · Cross-reference search results to help validate information on them. · Describe online hazards and how to respond to them safely. · Understand the term 'digital footprint' and describe strategies for reducing it. · Know how to stay safe when watching and recording videos online. · Compare techniques used for manipulating and putting pressure on people online. · Understand how to safely send digital messages.	· Learn how to evaluate the usefulness of a website. · Discuss reasons for and against sharing material publicly online. · Understand the importance of online consent. · Learn how to safely share images online. · Research localities using a digital map and use advanced tools like route finders. · To plan their own school trip to Wellington College.
Summary of core progression in Digital Literacy						
E-safety week to highlight what is covered and talked about every time child go on line. Child e-safety chart developed by the school council to constantly be shared during these sessions https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s						

Year Reception - Long term overview		
Information Technology	**Computer Science - programming**	**Digital Literacy**
· Learn to type letters with increasing confidence using a keyboard. · Explore combining painting tools to make digital art. · Use ICT hardware to interact with age-appropriate computer. · Learn to dictate short, clear sentences into a digital device. **Useful Apps** Seesaw, Word, Pages Google Docs Pic Collage,	· Understand that an algorithm is a sequence of instructions which can be programmed on a digital device. · To initially be able to direct a person around a maze · Initially starting with a simple coding app to direct a mole (sprite) to its hole · To be able to create a simple route with the Kubo Learn how to drag and drop https://studio.code.org/s/pre-express-2019/stage/1/puzzle/1 Simple follow code https://studio.code.org/s/pre-express-2019/stage/2/puzzle/1	· Navigate around websites with guidance. · Know where to go for help or support when online.

Year 1 Long term overview

Information Technology	Computer Science - programming	Digital Literacy
· Learn how to type words quickly and correctly using a keyboard. Learning to : -use the space bar to make space and delete to delete letters/words -make a new line using enter/return -dictate into a digital device more accurately and with punctuation. · Children will type into computers to initially learn to log on They will use activities on the following website https://www.everyschool.co.uk/i.c.t.-key-stage-1-navigation-skills.html This will develop valuable computer navigation skills. They will develop mouse, keyboard, scrollbar and drag and drop skills. · Make simple word processed documents and change the appearance of text. Children will make simple documents to link in with their writing They will repeat and refine these skills when making greetings cards. · Use and combine a variety of painting tools to create a picture. Children will use painting tools to create cards to fit in with key celebrations	· Following the Kubo KS1 curriculum lessons (4 x 25minute lessons) https://kubo.education/lesson-plan-1/ · Follow simple algorithms to make things happen. Initially children will use their body to understand the Movement TagTiles Children will use the Kubo to: -Demonstrate how Movement TagTiles work to create a simple algorithum -Make routes for KUBO to follow on the activity map. · Debug programs with support so they run correctly. Through the unit of lessons children will need to make adjustments to their algorithms to guide the Kubos through the maps **Progression in the objective** https://kubo.education/lesson-plan-2/ By the end of this section, students should be able to: - Make a function. -Explain your functions to classmates. - Come up with stories to fit your functions.	· Know how to use a web browser to navigate a website when doing Internet research. Research for at least one of the topics they are looking at through the year · Search for sensible, suitable images online. These might be images for the cards they make or the word-processed documents they make · Know rules for staying safe online, including how to safely use Internet media players. · E-safety week to highlight what is covered and talked about every time child go on line. Child e-safety chart developed by the school council to constantly be shared during these sessions https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s

Useful Apps Seesaw, Word, Pages Google Docs Pic Collage, Book Creator,	-Explain how your classmates' functions work. · Work with functions to : Make KUBO "memorize" the route to the soccer ball by using the blue function and play tiles Choose a route and make a function to take KUBO from the school bell to the bus stop using the blue Record and Play Function tiles. · To embed skills and enter into long term memory (lessons 3 to 6) https://studio.code.org/s/pre-express-2019/stage/3/puzzle/1 https://studio.code.org/s/pre-express-2019/stage/4/puzzle/1	

Year 2 - Long term overview		
Information Technology	**Computer Science - programming**	**Digital Literacy**
· Make word processed documents combining images with text. - I can copy and paste images and text -Use caps locks for capital letters -Further develop speed and accuracy with typing This might be through writing up a piece of their English or Topic writing where images can be added · Change the appearance of text so it matches a document's theme. As above – for example if they were to write up some writing about The Great Fire of London, they might change the font to match the era or the colour of headings to resemble fire · Use and combine a variety of brush styles and painting tools to create a picture. Create a multimedia e-book combining: text, painted pictures **Useful Apps** Seesaw, Word, Pages Google Docs Pic Collage, Keynote Book Creator, Popplet	· Write and share simple algorithms for others to follow (Children are reminded of the algorithms created in Year 1 and again use their bodies to remind themselves about the instructions needed to move and program a robot) Following the Kubo KS1 curriculum lessons (4 x 25minute lessons) https://kubo.education/lesson-plan-3/ By the end of this section, students should be able to: Build subroutines within functions. Explain your subroutines to classmates. Come up with stories to fit your subroutines. Explain how your classmates' subroutines work Debug programs with a little support so they run correctly. https://kubo.education/lesson-plan-4/ • By the end of this section, students should be able to: Explain what a loop is. Make a function that includes a loop.	· Know how to use a web browser to navigate websites effectively when doing Internet research. Research for at least one of the topics they are looking at through the year · Search for sensible, suitable images online and insert them into a document. These might be images for the fact books or writing project they make or the word processed documents they create · Know rules for staying safe online and why they must be followed. E-safety week to highlight what is covered and talked about every time child go on line. Child e-safety chart developed by the school council to constantly be shared during these sessions https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s

	Design a new map for KUBO. Write a story. Program KUBO to do what the story describes. These are the early foundations of what is built on in Year 5 with loop codes in block coding. To embed skills and enter into long term memory (lessons 7 to 10) https://studio.code.org/s/pre-express-2019/stage/7/puzzle/1	

Year 3 - Long term overview		
Information Technology	**Computer Science - programming**	**Digital Literacy**
· Type text into different programs and change its style by applying a range of font effects. Increasing speed and accuracy with typing: -use index fingers on keyboard home keys (f/j) -use left fingers for a/s/ d/f/g, and use right fingers for h/j/k/l - edit the style and effect of my text and images to make my document more engaging and eye-catching. For example, borders and shadows. -use cut, copy and paste to quickly duplicate and organise text. · Create documents and posters by combining text boxes with inserted images.	· Use logical reasoning to write simple algorithms explaining the sequence commands should run in. · Program a sequence of actions using timings to create a simple animation. · Write code that includes conditional events (e.g. run commands when objects hit). · Debug programs independently so they run correctly. https://microbit.org/lessons/nature-art-unit-of-work/ - 4 lessons They create nature representations, firstly using art materials and are introduced to computational thinking and programming the LEDs on the micro:bit. Pupils recap their understanding of algorithms before writing their own algorithms to show how they created their nature representations. Pupils are introduced to the BBC micro:bit and how images can be created using the LEDs. They create visual algorithms to plan simple images before writing programs using the MakeCode editor to create their images. https://microbit.org/lessons/digital-flashcards-unit-of-work/ -	· Compare digital communication methods, including when they are appropriate to use. · Explain the features of a strong password. · Understand how to stay safe when playing computer games. E-safety week to highlight what is covered and talked about every time child go on line. Child e-safety chart developed by the school council to constantly be shared during these sessions https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s

· Create a multimedia e-book combining: text, images voice recordings and shapes. · Shoot a digital photo and explore tools to edit it. · Create my own sorting diagram and complete a data handling activity with it using images and text. · Start to input simple data into a spreadsheet. · Create a feelings chart exploring a story or character's feelings Useful apps Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet Google Sheets, Google Forms, Excel, Numbers,	This builds on the previous 4 lessons Pupils design sequenced algorithms for flashcards to help them learn numbers in a foreign language, developing their understanding of computational thinking. They then write programs to create digital flashcards using micro:bit and test and evaluate their work. Pupils develop their understanding of the 'wait' command, using it in algorithms. They then plan an algorithm for a digital number flashcard. Pupils program the BBC micro:bit as a digital number flashcard and evaluate their programs against the design criteria before reviewing their learning from this unit. To embed – lessons 11 and 12 https://studio.code.org/s/pre-express-2019/stage/11/puzzle/3	

Year 4 - Long term overview		
Information Technology	**Computer Science - programming**	**Digital Literacy**
· Type and design a variety of documents, posters and leaflets using ICT. Learn rules for creating neat word processed work. · Confidently and regularly use text shortcuts such as cut, copy and paste and delete to organise text · Use font sizes appropriately for audience and purpose. · Use spell check and thesaurus including through Siri and other AI technology · Produce a multimedia video topic about topic with music and narration. · Create online multiple-choice quizzes. · Shoot and edit digital photos effectively. Create a photo collage. · Create a word collage. · Create my own online multiple choice questionnaire. · Input data into a spreadsheet and export the data in a variety of ways: charts, bar charts, pie charts. · Understand how data is collected.	· Use logical reasoning to create simple flowcharts explaining the sequence commands should run in. https://microbit.org/lessons/electrical-conductors-unit-of-work/ Pupils develop their understanding of flowchart algorithms, selection and inputs and outputs by using electrical circuits and the BBC micro:bit to test the conductivity of different materials. Pupils learn how to use the BBC micro:bit's pins as inputs. They plan, write, test and debug MakeCode programs to use micro:bits to test the electrical conductivity of materials. Test, debug and improve programs with support. https://microbit.org/lessons/volcano-animations-unit-of-work/ Programming activities related to animations, pupils develop their understanding of decomposition, flowchart algorithms and repetition. They then write, program and test an animation showing volcanic eruption using the LEDs on the micro:bit. Children learn to write a program using the BBC micro:bit MakeCode editor and explore how repetition can be used to create an animation.	· Learn how to search the web effectively. · Learn about the importance of only joining and using child-friendly websites. · Understand that there are consequences for making bad decisions online. E-safety week to highlight what is covered and talked about every time child go online. Child e-safety chart developed by the school council to constantly be shared during these sessions https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s

Useful apps Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet Google Sheets, Google Forms, Excel, Numbers,Kahoot	Pupils then follow their algorithm and write a program to create their volcanic eruption animation using the MakeCode editor. Test, debug and improve programs with support but beginning to be more independent.	

Year 5 - Long term overview		
Information Technology	**Computer Science - programming**	**Digital Literacy**
· Enter formulae into a spreadsheet to solve calculations and model scenarios, including using =SUM() and statistical functions. · Change the format of cells of cells using: text alignment, borders and data types. Children develop the excel spreadsheet skills to record a data handling project · Create pictures using drawing tools (shapes). · Create a multimedia on-screen presentation over several slides, adding animation and transition effects to enhance it. Children design and make a multi-media presentation about a learning topic or them self. · Compare ways for manipulating digital images to enhance them. **Useful Apps**	· Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation · To use condition start-action in code · To use condition switches between actions in code · Start to use condition-starts-action in a loop code https://microbit.org/lessons/musical-microbit-unit-overview/ Pupils compose musical phrases and write algorithms to play their phrases on pitched instruments (e.g. glockenspiels). They then programme the micro:bit to play their phrases when events are triggered and and experiment with using the accelerometer. Finally, they consider whether the micro:bit can be used as a music-making device, especially for those who might not have access to instruments. Pupils learn to use the if-then function and loop code instructions.	· Compare a range of online sites for doing Internet research on. · Cross-reference search results to help validate information on them. · Describe online hazards and how to respond to them safely. · Understand the term ‘digital footprint’ and describe strategies for reducing it. · Know how to stay safe when watching and recording videos online. · Compare techniques used for manipulating and putting pressure on people online. · Understand how to safely send digital messages. E-safety week to highlight what is covered and talked about every time child go on line. Child e-safety chart developed by the school council to constantly be shared during these sessions https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s

Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet Google Sheets, Google Forms, Excel, Numbers,	https://microbit.org/lessons/data-handling-unit-summary/ Children write and evaluate algorithms and programs using selection and repetition to use micro:bit as a temperature recorder, an automatic warning system and a digital assistant. Loops and conditionals in coding (lessons 6-15) https://studio.code.org/s/express-2019	

Year 6 - Long term overview		
Information Technology	**Computer Science - programming**	**Digital Literacy**
· Write spreadsheet formulae to solve maths problems (e.g. unit convertors). · Create an on-screen presentation with slide transitions, advanced animation effects and action buttons. Applying other useful effects to documents such as hyperlinks; importing sounds to accompany and enhance the text in the document. · Edit images using layering techniques. Use this skills to create interactive powerpoint games about a book they are reading (Stormbreaker)	· Can independently understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation · To use nested loops in code · To use variables within code https://microbit.org/lessons/getting-active-unit-overview/ They are introduced to variables and develop their understanding through a mixture of unplugged and practical programming activities. Pupils design and program the micro:bit to be a star-jump and step counter and a family activity selector.	· Learn how to evaluate the usefulness of a website. · Discuss reasons for and against sharing material publicly online. · Understand the importance of online consent. · Learn how to safely share images online. · Research localities using a digital map and use advanced tools like route finders. To plan their own school trip to Wellington College. E-safety week to highlight what is covered and talked about every time child go on line. Child e-

· Be able to create tables and venn diagrams – use this skill to record their learning in a variety of subjects · Create and edit a video. This will come through in a number of learning contexts – revision tool for SATs, end of year video, school prospectus - presentation about our school – using the format of adobespark (This may change to an app with the introduction of ipads) **Useful Apps** Seesaw, Word, Pages Google Docs Keynote Book Creator, Popplet Google Sheets, Google Forms, Excel, Numbers	They learn to use repeated if functions Samsung energy project – to use microbits to code smart devices Variables and Loops lessons (lessons 19 -23) https://studio.code.org/s/express-2019	safety chart developed by the school council to constantly be shared during these sessions https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s