Reception Computing Objectives - To be viewed alongside EYFS IT Strand			
ELG Recognise that a range of technology is used in places such as homes and schools - Select and use technology for purposefully .			
Computer Science (Programming and Computational Thinking)	**Information Technology**	**Digital Literacy**	**KEY SKILLS**
I can make a floor robot move by itself I can use simple software to make something happen. I can make choices about the buttons and icons I press, touch or click on.	I can tell you about different kinds of information such as pictures, video, text and sound. - I can move objects on a screen. - I can create shapes and text on a screen. I can use technology to show my learning.	I can tell you about technology that is used at home and in school. I can operate simple equipment	Know main peripherals of a computer e.g mouse, keyboard, touchscreen, monitor Be able to save work Be able to interact with a computer using inputs appropriate to the site (i.e. mouse control – left click, control of the mouse, keyboard – letter recognition, enter key, Know how to safely turn on and off a device (tablets – press and hold off button, computers/laptops - start, shut down
For help with observing children's behaviours when developing Computational thinking – click here			

Year one Computer Science Objectives

<table>
<tr><th colspan="2"><u>Computer Science</u> (Programming and Computational Thinking)</th><th colspan="2"><u>Information Technology</u></th><th colspan="2"><u>Digital Literacy (Communication and collaboration)</u></th></tr>
<tr><td colspan="2">In progression from objectives taught in the previous year, pupils...

Predict what will happen for a simple sequence of instructions (algorithm)

Investigate how algorithms work

Make an algorithm/program to achieve a simple outcome

Improve a simple algorithm by identifying basic errors (bugs) and correcting (debugging)

Pupils know:
That the word algorithm means a set of instructions
That the word bug means an error that causes an unexpected thing to happen
That the word debug means correcting an unexpected thing in an algorithm</td><td colspan="2">In progression from objectives taught in the previous year, pupils...

Save via an app or when the saving location has been set by an adult

Setup a device, by logging in, logging out and shutting down from a website or device

Input commands using the space bar, backspace, enter, caps lock, letters and numbers on a device (including on a tablet) to enter text.

Input commands using a mouse to control a cursor and use the left click to select options OR use finger control to interact with a tablet (double tap, swipe, pinch zoom)

Experience a range of simple apps used for creating and presenting ideas.

Evaluate what is good about their work</td><td colspan="2">In progression from objectives taught in the previous year, pupils...

Recognise that devices can be connected

Understand the ways devices are used in the classroom and at home, including the use of immerging technologies such as A.I

Use a search engine to find information</td></tr>
<tr><td>Term 1 - programming</td><td>Term 4 - programming – revisit – broaden and deepen</td><td>Term 2 Multimedia - create content</td><td>Term 5 - Multimedia - revisit and address misconceptions</td><td>Term 3 - digital literacy - research skills</td><td>Term 6 - digital literacy - computers in the wider world</td></tr>
</table>

Lesson Powerpoints can be found here	**Resources for lessons can be found below**	**Lesson PowerPoints can be found** here **Ipad/Christmas Friendly Multimedia can be found here**	**Use this term to deepen or broaden knowledge, addressing any misconceptions.**	Lesson Powerpoints can be found here	**Lesson guides can be found here**
Resources Beebot or other physical robot such as a code mouse Beebot emulator via a pc Bluebot app via an ipad There are a limited number of beebots that can be borrowed via the lead teacher (please give plenty of notice ☺)	**Resources** **Dance party** **Purple Mash - 2code** **Code org Minecraft adventurer** **Scratch Junior for** Windows and Mac (needs install) https://www.bbc.co.uk/bitesize/topics/zvsc7ty Information and class videos to go through basic language	**Resources** **PurpleMash** 2Paint (Painting program) Paint projects (templates to paint) 2Publish (Writing/Publishing template) 2Explore (Music Creation) 2Count (Pictograms) Mashcams (Use a webcam to make topic themed images combined with text) Planned units of work - Units 1.2, 1.3, 1.6, 1.8 **Word Processing:** BBC dance mat typing **Art:**	**Resources** **PurpleMash** 2Paint (Painting program) Paint projects (templates to paint) 2Publish (Writing/Publishing template) 2Explore (Music Creation) 2Count (Pictograms) Mashcams (Use a webcam to make topic themed images combined with text) Planned units of work - Units 1.2, 1.3, 1.6, 1.8 **Word Processing:** BBC dance mat typing **Art:**	**Resources** **https://teachcomputing.org/curriculum**	Resources **https://teachcomputing.org/curriculum**

		Abstract painting **Street art painting** **Paint package** **Stop Frame Animation:** https://www.culturestreet.org.uk/activities/stopframeanimator/ Online flipbook maker **Music:** Beatbox simulator Virtual piano Creating muisc with loops https://drumbit.app/ **Photo editing:** Making badges, top trumps etc	**Abstract painting** **Street art painting** **Paint package** **Stop Frame Animation:** https://www.culturestreet.org.uk/activities/stopframeanimator/ Online flipbook maker **Music:** Beatbox simulator Virtual piano Creating muisc with loops https://drumbit.app/ **Photo editing:** Making badges, top trumps etc		

Year 2 Computer Science		
Computer Science (Programming and Computational Thinking)	**Information Technology**	**Digital Literacy (Communication and collaboration)**
In progression from objectives taught in the previous year, pupils...	**In progression from objectives taught in the previous year, pupils...**	**In progression from objectives taught in the previous year, pupils...**
Predict what will happen in an algorithm using logical reasoning. **Investigate** the way algorithms need precise, unambiguous instructions to work **Make** algorithms that solve a problem, using simple drawings or diagrams to **plan** the solution **Improve** algorithms, using debugging skills such as checking back through their plan and algorithm.	**Save** and retrieve work using a sensible file name (child initials and type of work) **Setup** a device, by logging in, logging out, and navigating to an app **Input** commands by using both hands on a keyboard, understanding where home keys, top and bottom rows of keys are. **Input** commands using a mouse/touchpad, with an understanding of the difference between buttons (OR use finger control to interact with a tablet (double tap, swipe, pinch zoom) **Experience** a range of simple apps, creating and presenting work to solve a given problem	**Recognise** that devices can be connected via networks. **Understand** the ways devices are used in the workplace and the wider world, including the use of immerging technologies such as A.I and automation. **Use** key words in a search engine to find information **Demonstrate** how to navigate a simple webpage to get to information I need (e.g. home,

Pupils also know: That **sequences** are sets of instructions that are followed in order e.g fwd fwd, turn, turn That **inputs** are commands or instructions that are entered into a computer		**Evaluate** what is good about work and how it could be improved. **Data Handling Objectives:** **construct** simple tables, tally charts and pictograms **Extract** information from data by: **Asking and answering** simple questions by counting the number of objects in each category and sorting the categories by quantity **Asking and answering** questions about totalling and comparing categorical data		forward, back buttons; links, tabs and sections). **Explain** what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri).	
Programming **Term 1** **Lesson PowerPoints can be found here**	**Programming** **Term 4** **Lesson guides can be found here**	**Multimedia** **Term 2 Creating content on a computer** **Lesson PowerPoints can be found here** **Christmas Friendly Multimedia can be found here**	**Multimedia**	**Term 3 - Research Skills** **Lesson plans can be found here**	**Term 6 - Computers in the wider world** **Lesson guides can be found here**

For use in Term 1/ Year A Beebot or other physical robot such as a code mouse Beebot emulator via a pc Bluebot app via an ipad Dance party - block based programming	**For use in Term 4 / Year B** Dance party Purple Mash **Code org** **Minecraft adventurer** **Scratch jr for Windows and Mac (requires download)** **Apps for tablets** ALEX BeeBot Bluebot app Daisy Dino	**For use in Term 2/ Year A** **PurpleMash** 2Paint (Painting program) 2Publish (Writing/Publishing template) 2Beat (Rhythm creation) 2Sequence (Music Creation) 2Animate (Animation) 2Create A Story (Animated Stories) 2Calculate (Spreadsheet) 2Count (Pictograms) 2DIY (Make your own games and quizzes) Mashcams (Use a webcam to make topic themed images combined with text) Planned units of work - Units 2.3, 2.4, 2.5, 2.6, 2.7, 2.8	**For use in Term 5/ Year B** https://www.topmarks.co.uk/maths-games/7-11-years/data-handling **Provides access to a range of graphs** https://primaryschoolict.com/pictograph/ **For creating Pictograms** https://www.mathsisfun.com/data/bar-graph.html **Bar chart maker**	**https://teachcomputing.org/curriculum**	**https://teachcomputing.org/curriculum**

	Scratch jr	**Non PurpleMash resources:** **Word Processing:** BBC dance mat typing **Art:** **Abstract painting** **Street art painting** **Paint package** **Stop Frame Animation:** https://www.culturestreet.org.uk/activities/stopframeanimator/ Online flpbook maker **Music:** Beatbox simulator Virtual piano **Creating muisc with loops** https://drumbit.app/			

		Photo editing: Making badges, top trumps etc			

Year 3 Computer Science		
Computer Science (Programming and Computational Thinking)	**Information Technology(Using software to make digital products)**	**Digital Literacy (Computers in a connected world)**
In progression from objectives taught in the previous year, pupils... **Predict** what will happen for a more complex sequence of instructions which uses repetition. **Investigate** how a problem can be solved by decomposing it into smaller steps and by **planning** a solution. **Make** algorithms that solve problems which use sequences and repetition.	**In progression from objectives taught in the previous year, pupils...** **Save** and retrieve files on the school network (a shared drive like PupilShare), understanding that information can be saved in different places (an individual device, a local network or the cloud) **Setup** a device by logging in and out, and managing simple individual passwords. **Input** commands using a keyboard with increased fluency **Create,** modify and present work for a particular audience, **evaluate** their work and improve its effectiveness. **In Data Handling Pupils are able to...** **Collect** basic quantitative data,	**In progression from objectives taught in the previous year, pupils...** **recognise** the different parts of a school network e.g. WIFI point, server **Use** an online communication system e.g. email, and understand the opportunities this offers. **Use** search operators i.e. + - to filter information in a search engine

Improve more complex algorithms by identifying mistakes (bugs) and correcting debugging) **Pupils also know:** That **sequences** are sets of instructions that are followed in order e.g fwd fwd, turn, turn That using repetition in the form of a **loop** more efficient ways of programming sequences of instructions **Pupils know:** That the word **algorithm** means a set of instructions That the word **bug** means an error that causes an unexpected thing to happen That the word **debug** means correcting an unexpected thing in an algorithm		**Display** quantitative data using computer-based software **Interpret data using bar charts, pictograms and tables** **Extract information** from data by: **solving** one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in bar charts and pictograms and tables **Present** their findings to others			
Term 1 Programming **Lesson PowerPoints**	**Term 4 Programming** **Lesson PowerPoints**	**Term 2/ Multimedia** **Lesson PowerPoints can be found here**	**Term 5 Multimedia**	**Term 3 /Digital Literacy - Research skills**	**Term 6/ Digital Literacy**

can be found here	**can be found here**	**Lesson Powerpoints for Garage Band on Ipad can be found here** **Login card templates for pupils' passwords can be found here**		**Lesson planning can be found here**	**Lesson guides can be found here**
Code org minecraft designer - this app looks at loops and repeated commands **Code org Minecraft adventurer** **This version is useful for storyboarding sequences (see lesson plans)**	**Code org minecraft designer - this app looks at loops and repeated commands** **Code org Minecraft adventurer** **This version is useful for storyboarding sequences (see lesson plans)**	**Purple Mash** Units 3.4, 3.6, 3.7, 3.8 **Word Processing:** BBC dance mat typing **Art:** **Abstract painting** **Street art painting** **Paint package** **Stop Frame Animation:** https://www.culturestreet.org.uk/activities/stopframeanimator/ Online flpbook maker	https://www.topmarks.co.uk/maths-games/7-11-years/data-handling **Provides access to a range of graphs** https://primaryschoolict.com/pictograph/ **For creating Pictograms** https://www.mathsisfun.com/data/bar-graph.html **Bar chart maker**	**See planning guide** **https://teachcomputing.org/curriculum**	**See planning guide** **https://teachcomputing.org/curriculum**

		Music: Beatbox simulator Virtual piano **Creating muisc with loops**https://drumbit.app/ **Photo editing:** Making badges, top trumps etc			

Year 4 Computer Science		
Computer Science (Programming and Computational Thinking)	**Information Technology**	**Digital Literacy (Communication and collaboration)**
In progression from objectives taught in the previous year, pupils... **Plan** the solution to a problem by **decomposing** into smaller parts e.g. with a flow diagram, storyboard or other plan **Investigate** how algorithms work and identity the purpose of the different parts of an algorithm **Make** programs which use sequences, repetition and inputs and outputs when necessary. **Improve a** program by debugging systematically	**In progression from objectives taught in the previous year, pupils...** **Save** and retrieve work over the World Wide Web, the school network or Cloud system like Purple Mash, using folders to organise work Use **Input** devices fluently, such as keyboards, mice and/or touchscreens **Create,** modify and present work for a particular audience, using built in functions that help the user e.g spellchecker, dictate, immersive reader **Evaluate** their work and improve it, based on other people's views. **Collect** basic qualitative data.	**In progression from objectives taught in the previous year, pupils...** **Recognise** different parts of a school or office network e.g. server, switch, router, client, WIFI point, **Understand** an online collaboration system e.g. blogging, and understand the opportunities this offers. **Use** a wider range of search operators I.e. define: to efficiently find information in a search engine

Pupils also know: That a **function** is a named section of a program that does a certain task or job.		**Display** quantitative data using computer-based software **Interpret** discrete and continuous data bar charts and time graphs **Extract information** from data by **Solving** comparison, sum and difference problems using information presented in bar charts, and time graphs **Present** their findings to others			
Term 1/ Year A - Programming **Lesson PowerPoints can be found here**	**Term 4 /Year B Programming** **Resources to broaden and deepen can be found below:**	**Term 2 / Year A - Multimedia** **Lesson PowerPoints can be found here** **Login card templates for pupil's passwords can be found here**	**Term 5 Multimedia**	**Term 3 / Year A - Digital Literacy** **Lesson plans can be found here**	**Term 6 / Year B - Digital Literacy** **Lesson guides can be found here**

For use in Term 1/ Year A **Minecraft Heroes Journey** Introduces functions in progression to previous years.	**www.Code.org.uk** Has a wide range of tutorial's and apps to further develop pupil's skills. https://www.bbc.co.uk/bitesize/topics/zvsc7ty	**PurpleMash** 2Paint (Painting program) 2Publish (Writing/Publishing template) 2Beat (Rhythm creation) 2Sequence (Music Creation) 2Animate (Animation) 2Create A Story (Animated Stories) 2Calculate (Spreadsheet) 2Count (Pictograms) 2DIY (Make your own games and quizzes) Mashcams (Use a webcam to make topic themed images combined with text) Units 4.3, 4.4, 4.6 **Word Processing:** BBC dance mat typing **Art:**	http://mathszone.co.uk/data-handling/discrete-data-graphs/create-a-graph-nces-kids/ **Pc and tablet friendly package** for modelling discrete and continuous data	**Please consult the lesson guide** **https://teachcomputing.org/curriculum**	**Please consult the lesson guides** **https://teachcomputing.org/curriculum**

		Abstract painting **Street art painting** **Paint package** **Stop Frame Animation:** https://www.culturestreet.org.uk/activities/stopframeanimator/ Online flipbook maker **Music:** Beatbox simulator Virtual piano Creating muisc with loops https://drumbit.app/ **Photo editing:** Making badges, top trumps etc			

Year 5 Computing Objectives		
Computer Science (Programming and Computational Thinking)	**Information Technology**	**Digital Literacy (Communication and collaboration)**

In progression from objectives taught in the previous year, pupils...	In progression from objectives taught in the previous year, pupils...	In progression from objectives taught in the previous year, pupils...
Plan efficient solutions to problems that include controlling or simulating physical systems, using **decomposition** to solve the problem **Make** programs using more complex algorithms , selecting when to use sequences, selection, (if, then), repetition and a range of inputs and outputs **Investigate** how algorithms work on different platforms, by comparing one block-based code language to another (e.g. Scratch with 2Code) **Improve** code by systematically testing and debugging it, with an understanding of logic and syntax bugs	Understand the difference between cloud based **saving** and older programs, which need to be manually saved. **Setup** a device by logging in and out, managing simple individual passwords. Use **Input** devices fluently, such as keyboards, mice and/or touchscreens to navigate a system, Using shortcuts on a keyboard (Ctrl + B, U, I, S, P) **Create,** modify and present work for an audience, using built in functions that help the user such as spellchecker, dictate, immersive reader **Evaluate** their work and improve it, understanding how photos, video and sound can support a presentation **Data Handling** **Construct** surveys to **collect** data with. **Display** different data types using computer-based software	**Recognise** different parts of a school or office network e.g. server, switch, router, client, wifi point, and explain the purpose of each. **Understand** online communication and collaboration tools are used for different purposes **Use** a search engine efficiently by filtering and begin to understand how results are selected and ranked

	Interpret data, using different methods, including timetables **Present** their findings to others, using feedback to improve work **Extract** information from data by: **Solving** comparison, sum and difference problems using information presented in a line graphs and timetables	

Term 1 - Programming **Lesson PowerPoints can be found here**	**Term 4 - Programming** **Resources to deepen and broaden can be found below**	**Term 2 / Year A Multimedia** **Lesson Powerpoints can be found here**	**Term 5 / Multimedia**	**Term 3 /Year A - Digital Literacy - Research skills** **Please click here for a set of lesson plans**	**Term 6 / Year B - Digital Literacy** **Lesson guides can be found here**
Scratch 3	Www.code.org is a great place to deepen and embed skills	**PurpleMash** 2Paint (Painting program) 2Publish (Writing/Publishing template) 2Beat (Rhythm creation) 2Sequence (Music Creation) 2Animate (Animation) 2Create A Story (Animated Stories) 2Calculate (Spreadsheet) 2Count (Pictograms) 2DIY (Make your own games and quizzes) Mashcams (Use a webcam to make topic themed images combined with text) Units 5.3, 5.4, 5.5, 5.6, 5.7 **Word Processing:**	https://nces.ed.gov/nceskids/createagraph/ **Pc and tablet friendly package** for modelling discrete and continuous data	**https://teachcomputing.org/curriculum**	**https://teachcomputing.org/curriculums**

		BBC dance mat typing **Art:** **Abstract painting** **Street art painting** **Paint package** **Stop Frame Animation:** https://www.culturestreet.org.uk/activities/stopframeanimator/ Online flipbook maker **Music:** Beatbox simulator Virtual piano Creating muisc with loops https://drumbit.app/ **Photo editing:** Making badges, top trumps etc			

Year 6 Computing Objectives

Computer Science (Programming and Computational Thinking)	Information Technology	Digital Literacy (Communication and collaboration)
In progression from objectives taught in the previous year, pupils... **Plan** programs to achieve a specific goal, including controlling or simulating of physical systems by **decomposing** and by choosing an efficient method of **planning** i.e. storyboarding, flow diagrams or other method **Make** algorithms which find solutions to problems, choosing when to use sequences, functions, repetition, selection (if, then, else) or variables	**In progression from objectives taught in the previous year, pupils...** Use search tools within a system to find **saved** work. Help ensure that devices around the school are **setup** probably and secured when not in use **Create** content using more than one type of software which solves problems, with a regard to audience and user needs. Use **Input** devices fluently, such as keyboards, mice, touchscreens and voice command to enter data in a system. **Evaluate** their work and improve it, understanding how photos, video and sound can aid this. **Data Handling**	**In progression from objectives taught in the previous year, pupils...** **Recognise** the different services that computer networks can provide I.e. the World Wide Web , **Understand** a range of online communication and collaboration tools independently and explain the benefits and limitations of each **Use** a search engine efficiently by filtering and deepen their understanding of how results are selected and ranked

Investigate different ways of evaluating algorithms for effectiveness and efficiency **Improve** algorithms, systematically testing and debugging errors with an understanding of logic and syntax bugs		Pupils are able to: **Construct surveys** to collect data on a topic **Display** different data types using computer-based software **Interpret** information in different forms, including pie charts **Present** their findings to others, using feedback to improve work **Extract** information from data by: **Solving problems** using pie charts and line graphs			
Term 1 or Year A **Lesson PowerPoints can be found here**	**Term 4 or Year B** **Use this term to deepen and broaden.**	**Term 2 or Year A** **Lesson Powerpoints can be found here**	**Term 5 or Year B** **Data investigations** **Lesson Powerpoints in development**	**Term 3 or Year A - Research skills** **An Example based on Researching Brazil can be**	**Term 6 or Year B** **Lesson guides can be found here**

				found here - feel free to download and change the topic.	
Scratch 3	www.code.org.uk **Is a great place to look at lesson guides**	**Purple Mash Units** Units 6.3, 6.5, 6.7 **Word Processing:** BBC dance mat typing **Art:** **Abstract painting** **Street art painting** **Paint package** **Stop Frame Animation:** https://www.culturestreet.org.uk/activities/stopframeanimator/	https://nces.ed.gov/nceskids/createagraph/ **Pc and tablet friendly package** for modelling discrete and continuous data	**Please consult the lesson guides**	**Please consult the lesson guides**

		Online flipbook maker **Music:** Beatbox simulator Virtual piano **Creating muisc with loops** https://drumbit.app/ **Photo editing:** Making badges, top trumps etc			