Computing Journey at Rucstall Primary School

EYFS Computing Learning Journey

Autumn

- I can follow simple oral algorithms
- I can spot simple patterns
- I can sequence simple familiar tasks
- I can input a simple sequence of commands to control a digital device with support (Bee Bot)
- I can recognise that I can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who asks me to do something that makes me feel sad, embarrassed or upset
- I can explain how this could be either in real life or online

Spring

- I can play on a touch screen game and use computers/ keyboards /mouse in role play
- I can describe ways that some people can be unkind online
- I can offer examples of how this can make others feel
- I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location)
- I can describe the people I can trust and can share this with; I can explain why I can trust them

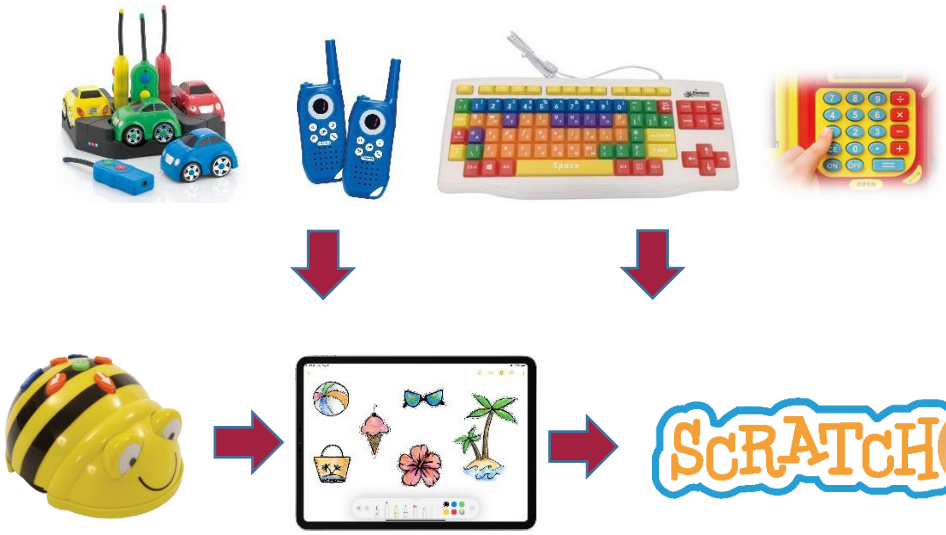
Summer

- I can identify a chart
- I can sort physical objects, take a picture and discuss what I have done
- I know the difference between a photography and video.
- I can record a short film using the camera
- I can record and play a film
- I can watch films back
- I can give examples of how I (might) use technology to communicate with people I know

Sticky Knowledge

- I know the difference between a photography and video
- I can input a simple sequence of commands to control a digital device with support

Year 1 Computing Journey



Objectives

- Be able to use trial and error to get my BeeBot moving
- Input basic commands to make my BeeBot move
- Be able to program a BeeBot for a specific purpose
- Be able to paint with different colours
- Be able to paint with different brushes
- Create shapes in Paint and fill areas
- Be able to make changes to improve my work
- Be able to add text to a painting
- Final outcome to make a poster using Paint
- Know what sequence means
- Know what loop means
- Know how to make changes when programming
- Know how to be clear with instructions

Sticky Knowledge

- Know what instructions mean
- Know how to program a BeeBot to move
- Know what forwards and backwards means
- Know what turn means
- Know how to test instructions
- Know how to turn on an iPad
- Know how to be safe when using a laptop or iPad
- Know how to take photos on an iPad
- Know how to safely turn on the school laptops
- Be able to log onto a laptop
- Know how to program using visual blocks (Scratch Junior)

Rucstall Words

Instruction	Robot	Forwards	Backwards	Turn	Test	Log on	Program

Year 2










Objectives

- Know how to give/follow a set of instructions
- Know how to program a 'Sprite' to move forwards and backwards
- Know I need to plan out my programming first
- Know how to predict what the outcome of a simple program will be
- Know how to use technology safely and respectfully
- Know a range of technology: not just iPad and laptop
- Understand why technology can be useful in our lives
- Know some of the dangers associated with technology
- Know different ways to collect data
- Know how to make and save a graph
- Know how to read and analyse a graph
- Be able to create a graph
- Know what a branching database is
- 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

Sticky Knowledge

- Know what an algorithm is
- Know I need to plan out my programming first
- Know how to program a 'Sprite' to move forwards and backwards
- Know how to predict what the outcome of a simple program will be
- Know the parts of a computer
- Know how to be safe online
- Know some examples of technology used both inside and outside of school
- Know who I can talk to if I am concerned about something on the internet
- Know how to program a BeeBot to rotate
- Know what repeat means
- Know how to reset when programming BeeBots
- Know what makes a good programmer

Rucstall Words

Algorithm, Plan, Predict, Mouse, Keyboard, Scanner, Monitor, Computer, Laptop, Internet, Repeat, Reset, Programmer

Year 3

Objectives

- Know code means to write code, or to write instructions for a computer
- Know debugging means finding and fixing problems in an algorithm or program
- Know program is an algorithm that has been coded into something that can be run by a machine
- Know how to create a short stop-frame animation using multiple frames
- Know how to be safe when searching the internet
- Be able to build a simple sequence of instructions for the van in Rapid Router
- Understand that a computer follows instructions called code
- Know what debug means and be able to debug a simple program
- With support, be able to program, test and debug Crumble Controller
- Know how to create a multi-layered image
- Know how to crop images
- Know how to search for .png images
- Know what a branching story is
- Know how to create slide templates and organise these
- Know how to insert hyperlinks within slides
- Know how to add custom animations
- Know how to add slide transitions
- Know how to add sound effects within PowerPoint

Sticky Knowledge

- Know what debug means
- Know how to plan, write and improve algorithms
- Know what coding means
- Know how to connect wires and LEDs to a 'plug and play' circuit
- Know how to give an 'on-screen' robot specific instructions that takes them from A to B
- Know how to load up a search engine and to search for information
- Know how to use different images on a presentation
- Know how to save my work
- Know how to print my work
- Know how to crop images
- Know how to use technology respectfully and responsibly and how different ways I can get help, if I'm concerned about anything

Rucstall Words

Debug, Coding, LED, Circuit, Animation, Stop-frame Animation, Frame, Search Engine, Crop, Image type, Pivot, Transition, .PNG, Transparent, Overlay, Bespoke, Route, Rapid

Year 4

Objectives

- Create effective and professional PowerPoint slides
- Within Scratch, program a 'sprite' to be able to steer up, down, right & left when you press the arrow keys on a keyboard
- Program a sprite to move when you press the keyboard or mouse
- Program a sprite to draw lines when it moves
- Debug errors within my programming
- Create a sequence that includes an imported sound
- Alter the sound effect
- Repeat code using a repeat x times loop
- Know how to be safe when searching the internet
- Know how to create a simple animation with multiple frames
- Know what stop-frame animation is
- Know how to alter 'Sprite Images'
- Know how to create a multi-layered background
- Know how to create a stop-frame animation with a bespoke background
- Understand what is meant by the term algorithm (recap)
- Be able to program, test and debug Crumble Controller
- Join multiple 'sparkles' together
- Know how to switch the robot on
- Know how to enter instructions such as Go Forward. Then make it run the commands
- Know how to interrupt the robot and stop it from operating a set of instructions
- Know how to remove or delete instructions
- Know what One Forward command does (with no number)
- Know what Forward with a one digit after it does.
- Know how the Probot interprets the numbers
- Know how to turn/rotate accurately in differing degrees
- Know how to add a pause timer

Sticky Knowledge

- Know how to design algorithms that use repetition
- Know how to create a short program
- Know how to recognise and debug errors within block code
- Know how to layer items within a presentation
- Know what makes an effective PowerPoint presentation

Rucstall Words

Repetition, Recognise, Debug, Layer, Transition, Multimedia

Year 5

Objectives

- I can use photos effectively with mature effects
- I can change font type, size and colour to increase its effectiveness
- I can create, modify and present documents for a particular purpose
- I can use a keyboard confidently and make use of a spellchecker to write and review my work.
- I can give constructive feedback to my friends to help them improve their work and refine my own work
- I know what is meant by a video advertisement
- Know what makes an effective video advertisement
- Be able to design and plan a video advertisement
- I can say why I should use copyright-free images or video
- I can find copyright-free images or videos
- I can describe what is meant by the term 'fair use'
- Know how to import, trim and merge videos
- Be able to evaluate the effectiveness of the video advertisement
- Use logical reasoning to explain how their Crumble code works
- Be able to detect and correct errors within their Crumble coding (debug)

Sticky Knowledge

- I know how search results are selected and ranked
- I know and understand that I have to make choices when using technology and that not everything is true and/or safe
- Know what copyright means and why it is important
- Know what import and export means
- Know how to merge videos together using video editing software
- Know how to trim a video using video editing software
- Know how to decompose a problem into smaller parts
- Know how to use repeat commands in a program
- Know how to change inputs to written programs to alter outcomes

Rucstall Words

Ranking, Cookies, Trim, Copyright, Merge, Soundtrack, Overlay, Mute, Transition, Import, Export, Decompose, Repeat Command, Alter

Year 6

Objectives

- I can explain and program each of the steps in my algorithm
- I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm
- I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program
- I can refine a procedure using repeat commands to improve a program
- I can change an input to a program to achieve a different output
- I can use 'if' and 'then' commands to select an action
- I can use logical reasoning to detect and debug mistakes in a program
- I use logical thinking, imagination and creativity to extend a program
- Know what 'wellbeing' and 'social media' means
- Know the actions a person can take to look after their wellbeing with a balance of online and offline activities
- Evaluate the positives and negatives of social media
- Understand what is meant by a forever loop within sequencing
- Understand what a network is
- Know how IP addresses work
- Know how search engines work
- Know how search engines collate searches

Sticky Knowledge

- I know what computational thinking means
- Know how to evaluate the effectiveness and efficiency of my algorithm
- I know how to report concerns about digital content both in and out of school
- Know the consequences of sharing too much about myself online
- Know how to support my friends to protect themselves and make good choices online
- I know how to use loops within my programming
- I know what a variable is and I can associate them with my programming
- I understand how computers are able to communicate and share information

Rucstall Words

Computational Thinking, Efficiency, Network, Topology, Server, Router, IP Address, Digital Footprint, Loop Command, If Command