

Computing Knowledge Progression Framework

Disciplinary Knowledge

	F2	Year 1	Year 2	Year 3
Algorithms		<ul style="list-style-type: none"> Understand what an algorithm is and how they can be used to solve problems/achieve objectives. Give clear instructions in the correct order when using algorithms. 	<ul style="list-style-type: none"> Use algorithms on digital devices to complete tasks. 	<ul style="list-style-type: none"> Make predictions about what will happen when a command is entered.
Creating Programs	<ul style="list-style-type: none"> Complete a simple program on an electronic device (eg: BeeBot/iPad) Use simple directional language when programming. 	<ul style="list-style-type: none"> Create and test simple programs. 	<ul style="list-style-type: none"> Create, tests and debug simple programs that achieve a specific purpose. Give precise unambiguous instructions when programming. 	<ul style="list-style-type: none"> Debug codes knowing that any unexpected outcome is down to their code and not a computer fault
Reasoning		<ul style="list-style-type: none"> Interpret what will happen at different stages of a program 	<ul style="list-style-type: none"> Predict what the outcome of a simple program will be. Identify the parts of a program that respond to specific actions. 	<ul style="list-style-type: none"> Use logical reasoning to explain how some simple algorithms work. Predict the outcome of a sequence. Detect errors in algorithms and programs, using logical reasoning.

Using Technology	<ul style="list-style-type: none"> • Use vocabulary to name simple equipment. • Operate devices showing an understanding of their remote controls. • Explore and use a range of technology (eg: camera, torch, touch screen, remote control toys). • Retrieve information from technological devices and the internet. • Navigate their way around an ipad and operate a few apps. 	<ul style="list-style-type: none"> • Use letter, number and space keys to enter text into a computer. • Use punctuation and special characters. • Create a digital picture using a range of tools (e.g. fill, line, shape) • Select and use a range of paint colours. • Select text. • Change the appearance of text on a computer. • Use the backspace key to remove text. • Position the text cursor in a given location. • Use the undo button. • Create, edit and store digital content. 	<ul style="list-style-type: none"> • Organise, retrieve and manipulate digital content. • Enter data on a computer. • Use pictograms to answer questions. • Experiment with musical patterns on a computer. • Experiment with different sounds on a computer. • Use a computer to create a musical pattern. • Use a computer to compose a rhythm and a melody. • Use a computer to play the same music in different ways (e.g. tempo) • Evaluate and improve a musical composition created on a computer. 	<ul style="list-style-type: none"> • Change page orientation. • Recognise how different font styles and effects are used for particular purposes. • Consider the benefits of using certain software.
Use of IT beyond school	<ul style="list-style-type: none"> • Begin to recognise some common uses of technology beyond school. 	<ul style="list-style-type: none"> • Recognise that some technology can be used in different ways. • Identify the main parts of a computer. • Use a mouse in different ways. • Use a keyboard to type and edit text. • Show how to use technology safely. 	<ul style="list-style-type: none"> • Describe some uses of computers. • Recognise the features of information technology. • Identify information technology in school and beyond school. • Show how to use technology safely. • Explain how information technology benefits us. 	<ul style="list-style-type: none"> • Recognise a digital device is made up of different parts. • Identify input and output devices. • Explain that a computer accepts an input and processes it as an output. • Identify network devices around me. • Identify the benefits of computer networks.

Safe Use	<ul style="list-style-type: none">• Show care when using technology and electronic devices.• Tell an adult if they see something on a device that upsets them.• Understand some ways to stay and happy online.	<ul style="list-style-type: none">• Use technology safely and respectfully.• Understand how and the importance of keeping personal information private.• Save work to a designated folder.• Understand the 'Healthy Habits' as ways of staying safe and happy online.	<ul style="list-style-type: none">• Know where to go for help if they are concerned.• Explain what the 'Healthy Habits' mean and how they help us stay safe and happy online.• Say how rules for using information technology help us.	<ul style="list-style-type: none">• Know how to report concerns• Recognise and show appropriate behaviour when online
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Substantive Knowledge

	Year 1	Year 2
Technology Around Us	<ul style="list-style-type: none"> • Know that technology is something that can help us. • Know that a computer is an example of technology. • Know why rules are needed when using technology. • Know that the main parts of a computer are: <ul style="list-style-type: none"> ○ screen ○ mouse ○ keyboard • Know the benefits of using a computer for creating art. • Know how to log onto a computer using a username and password. 	<ul style="list-style-type: none"> • Know that there are different types of computers used in school. • Know how information technology (IT) can be used and then benefits of it. • Know that a computer can be used to present information. • Know that some personal information should not be shared online. • Know how to use IT safely. • Know how to enter data on a computer. • Know the benefits of using a computer for collecting, comparing and presenting data. • Know the benefits of using technology when shopping.
Programming	<ul style="list-style-type: none"> • Know that an algorithm is a list of instructions that are followed to get something done/solve a problem. • Know that instructions must be given clearly and in the correct order. • Know how to combine commands to make a sequence. • Know how to create a simple program and test it. • Know how to interpret what will happen at different stages of a program by explaining what a given command will do. • Know how to run a program on a device. 	<ul style="list-style-type: none"> • Know what is meant by debugging and how to do this to fix a problem. • Know that algorithms are used in digital devices. • Know that programs execute by following precise instructions. • Know how to organise code blocks into a sequence to solve a problem. • Know how to create and debug a simple program which achieves a specific purpose. • Know how to predict what the outcome of a simple program will be. • Know how to identify the parts of a program which will respond to specific actions. • Know how to use loops when creating block-based codes.
Creating Media	<ul style="list-style-type: none"> • Know that a keyboard is used to enter and edit text into a computer. • Know how to change the appearance of text using a keyboard. • Know that the 'shift' key changes the output of a key. • Know that the 'backspace' key removes text. 	<ul style="list-style-type: none"> • Know that computers can be used to play sounds of different instruments. • Know how to use a computer to create musical patterns and compose a rhythm and melody. • Know how to use a computer to play the same music in different ways (eg. changing the tempo).

	<ul style="list-style-type: none"> • Know that the appearance of text can be changed. • Know that text can be edited. 	<ul style="list-style-type: none"> • Know that the same pattern can be represented in different ways. • Know how to evaluate and improve musical compositions on a computer. • Know the benefits of using a computer for creating music.
Online Safety	<ul style="list-style-type: none"> • Know how to name my work so that others know it belongs to me. • Know how to save my work under a suitable name/title. • Know that work created by others does not belong to me even if I save a copy. • Know that there may be people online who could make me feel sad or embarrassed. • Know that I can talk to a trusted adult when things online upset me. • Know why it is important to be kind and considerate to others online. • Recognise information that is personal to someone: <ul style="list-style-type: none"> ○ Name of their school ○ Family names ○ Address • Know the rules I can follow to keep myself safe when using technology at home and beyond. • Know the information I should not share online without asking a trusted adult. • Know that we can encounter a range of things online including things we do and do not like. 	<ul style="list-style-type: none"> • Know that content and information on the internet may belong to other people. • Know that other people may look and act differently online and offline. • Know why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online. • Know what bullying is and how this may look online. • Know how rules/guides help me accessing online technology. • Know who I can talk to if something has been put online without consent or if it is incorrect. • Know the difference between things that are 'made up' and things that are 'true' online.

Key Vocabulary

F2

backwards – (teacher to model)
camera - (teacher to model)
control – a device used to guide/operate technology
instructions – the directions/orders to follow
iPad - (teacher to model)
forwards – (teacher to model)
resilience – finding ways to have another go and not giving up when challenged

Year 1

In addition to F2...

algorithm – a list of instructions to get something done
backspace – a key to delete text
commands - instructions
computer – (teacher to model)
cursor – a visual indicator to see where you are on your screen
double-click – (teacher to model)
edit – to make changes
keyboard – a group of keys that can be used to operate a computer
keys – the buttons on a keyboard
mouse/trackpad – a device used to navigate around a computer and select
program – a set of ordered commands that can be run by a computer to complete a task
route - the way to get one from place to another
screen - the surface on which pictures/word are displayed
technology - something that helps other people.
toolbar - symbols that can be clicked to perform certain jobs
type – pressing keys to produce text
undo/shape/line/fill tools – (teacher to model)
web browser – a program used to navigate and view web pages
word processor – software for creating text documents

Year 2

In addition to F2 and Year 1...

barcode – the black and white bars printed on labels and packaging that can be scanned to read information

scanner – a device which scans printed material to be read by a computer

code – the commands that a computer can run

debugging – the process of finding and fixing mistakes in a program

information technology (IT) - a computer or something that works with a computer

sequence – a list of steps/codes in a specific order

loop – a command which repeats a section of code

movement block – specific codes/instructions which determine how a device moves

light effects, timing, sound – specific codes/instructions which determine the lights and sounds a device makes

Ozoblockly - (teacher to model/show)

Ozobot - (teacher to model/show)

Bluetooth – a way to connect two devices wirelessly to allow communication

programming blocks – commands in block form that can be used to create a program

run – to action the commands in a program