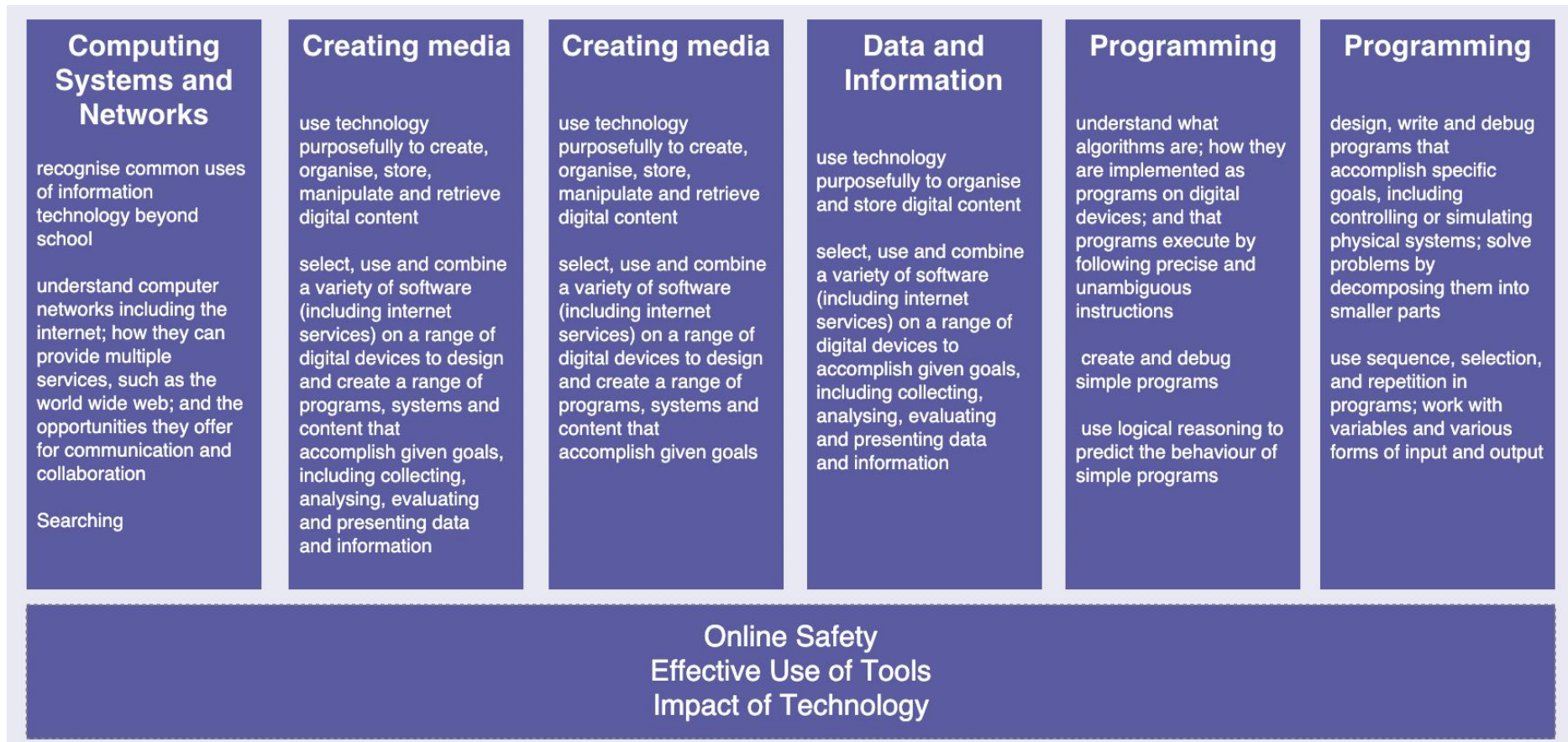




Computing Statement of Intent

Advances in technology impacts on all our lives. Through teaching computing, we aim to equip our children to participate in a rapidly changing world where work and leisure activities are increasingly transformed by technology. It is our intention to enable children to find, explore, analyse, exchange and present information. With the knowledge that Computing will undoubtedly continue to form a major part of the children’s lives at home, in further education and places of work, we ensure that the experiences and abilities that the children develop at Whinstone are effective and transferrable life skills. We ensure that online safety learning outcomes are interpreted within contexts that are relevant to the learner’s experience and are achieved through learning that is matched to the readiness of the learner. We help our children to become creative at computing through the development of the Key Concepts in computing:

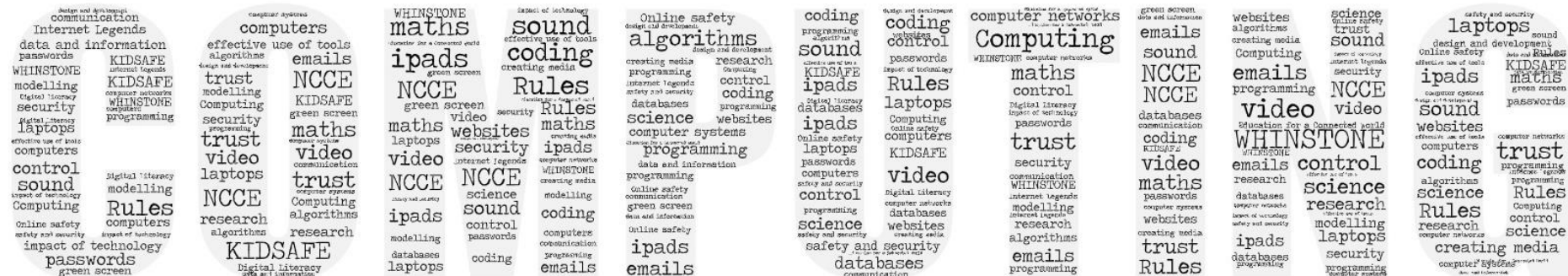




Whinstone Primary School Year 3 Computing



- Algorithms — Be able to comprehend, design, create, and evaluate algorithms
- Computer networks — Understand how networks can be used to retrieve and share information, and how they come with associated risks
- Computer systems — Understand what a computer is, and how its constituent parts function together as a whole
- Creating media — Select and create a range of media including text, images, sounds, and video
- Data and information — Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
- Design and development — Understand the activities involved in planning, creating, and evaluating computing artefacts
- Effective use of tools — Use software tools to support computing work
- Impact of technology — Understand how individuals, systems, and society as a whole interact with computer systems
- Programming — Create software to allow computers to solve problems
- Safety and security — Understand risks when using technology, and how to protect individuals and systems The taxonomy provides categories and an organised view of content to encapsulate the discipline of computing. Whilst all strands are present at all phases, they are not always taught explicitly.





Computing KS2 National Curriculum

Pupils should be taught to:

- 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
- 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
- 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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.



Computing Implementation

Computing is taught as an area of learning, as well as integrated with other curriculum areas where appropriate. There is also flexibility to seize opportunities to celebrate and acknowledge significant events.

Year 3 Computing Implementation – Key Concepts

The Key Concepts of Computing at Whinstone are:

- Computer Systems and Networks
- Creating Media
- Data and Information
- Programming
- Safety and Security (Whilst all strands are present at all phases, they are not always taught explicitly.)

In Year 3 Computing is taught in discrete lessons under the following broad unit headings:

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Computer Systems and Networks Microsoft Office 365 / SEESAW and Connecting Computers	Data and Information Branching Databases	Programming A MINECRAFT in Education (Whinstone added unit)	Creating Media Desktop Publishing	Programming B Events and Actions	Creating Media Stop Frame Animation



Whinstone Primary School Year 3 Computing



Topic Specific Vocabulary					
Computer Systems and Networks	Data and Information	Programming A	Creating Media	Programming B	Creating Media
Microsoft Office 365 / SEESAW and Connecting Computers	Branching Databases	MINECRAFT in Education (Whinstone added unit)	Desktop Publishing	Events and Actions	Stop Frame Animation
Email, online safety, fake email, personal information, text box, camera, upload, photo consent, being kind online, video	Branching database, attribute, value, pictogram, decision tree, structure,	Algorithm, sequence, command, order, Decomposition, debugging, condition, loop	Text, images, communicate, font style, template, layout, copy, paste, purpose, desktop publishing benefits	event, algorithm, sprite Move, resize, block, pen up, set up, debugging, test	Stop-frame animation, frame, sequence, image, photograph, onion skinning, import, transition
Digital device, input, output, process, program, connection, network, network switch, server, WAP (wireless access point)					

Key Concepts

These key concepts, knowledge and vocabulary will be taught and reinforced through the development of these specific skills. These Key Concepts and vocabulary will be revisited and repeated throughout a child's journey of Computing at Whinstone.

**Safety and Security links to lessons are in RED. Online Safety Strands are taken from the UKCCIS document 'Education for a Connected World' (June, 2020)*



Whinstone Primary School Year 3 Computing



Computer Systems and Networks	Data and Information	Programming A	Creating Media	Programming B	Creating Media
Microsoft Office 365 / SEESAW and Connecting Computers	Branching Databases	MINECRAFT in Education (Whinstone added unit)	Desktop Publishing	Events and Actions	Stop Frame Animation
To explain how digital devices function To understand how to use email and Microsoft Teams Self-image and identity Online relationships Online reputation Online bullying Privacy and security	To create questions with yes/no answers	To get to know the basic controls within Minecraft Education Edition	To recognise how text and images convey information Copyright and ownership Managing online information	To explain how a sprite moves in an existing project	To explain that animation is a sequence of drawings or photographs Copyright and ownership Managing online information
To identify input and output devices	To identify the object attributes needed to collect relevant data	To build using the inventory's blocks	To recognise that text and layout can be edited	To create a program to move a sprite in four directions	To relate animated movement with a sequence of images
To recognise how digital devices can change the way we work	To create a branching database	To know the order to make something happen and talk about this as an algorithm.	To choose appropriate page settings	To adapt a program to a new context	To plan an animation
To explain how a computer network can be used to share information	To identify objects using a branching database	To use sequence, selection, and repetition in programs	To add content to a desktop publishing publication	To develop my program by adding features	To identify the need to work consistently and carefully
To explore how digital devices can be connected	To explain why it is helpful for a database to be well structured	To work with variables and conditions	To consider how different layouts can suit different purposes	To identify and fix bugs in a program	To review and improve an animation
To recognise the physical components of a network	To compare the information shown in a pictogram with a branching database	To solve problems by decomposing them into smaller parts. To use sequence, selection, and repetition in programs	To consider the benefits of desktop publishing	To design and create a maze-based challenge	To evaluate the impact of adding other media to an animation



Whinstone Primary School Year 3 Computing



Computing Impact

At the end of each topic teachers will evaluate what knowledge and skills pupils have gained within the Key Concepts. **Please see the grid below this one for the 'Education for a Connected World' specific 'I can' statements for meeting expectations.** Links are shown here but all aspects of the 'Safety and Security' strand will be covered over the school year within assemblies, extra sessions and PHSE lessons.

SKILLS	Learning Objective	Meeting expectations	Education for a Connected World links
Computer Systems and Networks Microsoft Office 365 / SEESAW and Connecting Computers	To understand how to use email and SEESAW (*extra Whinstone unit)	<ul style="list-style-type: none"> - I can log onto my email and reply back to the teacher - I can open up my own Seesaw by scanning my QR code - I can open up the class Seesaw using the QR code and choose my name - I can type in text boxes - I can create my own text boxes - I can take a photo using the camera and upload the photo to the Seesaw activity - I can make a video using an app online - I can use screen recorder - I can upload a video my Seesaw activity 	Self-image and identity Online relationships Online reputation Online bullying Privacy and security
	To explain how digital devices function	<ul style="list-style-type: none"> - I can explain that digital devices accept inputs - I can explain that digital devices produce outputs - I can follow a process 	
	To identify input and output devices	<ul style="list-style-type: none"> - I can classify input and output devices - I can design a digital device - I can model a simple process 	
	To recognise how digital devices can change the way we work	<ul style="list-style-type: none"> - I can explain how I use digital devices for different activities - I can recognise similarities between using digital devices and non-digital tools - I can suggest differences between using digital devices and non-digital tools 	
	To explain how a computer network can be used to share information	<ul style="list-style-type: none"> - I can discuss why we need a network switch - I can explain how messages are passed through multiple connections - I can recognise different connections 	
	To explore how digital devices can be connected	<ul style="list-style-type: none"> - I can demonstrate how information can be passed between devices - I can explain the role of a switch, server, and wireless access point in a network - I can recognise that a computer network is made up of a number of devices 	
	To recognise the physical components of a network	<ul style="list-style-type: none"> - I can identify how devices in a network are connected with one another - I can identify networked devices around me - I can identify the benefits of computer networks 	



Whinstone Primary School Year 3 Computing



Data and Information Branching Databases	To create questions with yes/no answers	<ul style="list-style-type: none"> - I can create two groups of objects separated by one attribute - I can investigate questions with yes/no answers - I can make up a yes/no question about a collection of objects 	
	To identify the object attributes needed to collect relevant data	<ul style="list-style-type: none"> - I can arrange objects into a tree structure - I can create a group of objects within an existing group - I can select an attribute to separate objects 	
	To create a branching database	<ul style="list-style-type: none"> - I can group objects using my own yes/no questions - I can prove my branching database works - I can select objects to arrange in a branching database 	
	To identify objects using a branching database	<ul style="list-style-type: none"> - I can create questions and apply them to a tree structure - I can select a theme and choose a variety of objects - I can use my branching database to answer questions 	
	To explain why it is helpful for a database to be well structured	<ul style="list-style-type: none"> - I can compare two branching database structures - I can create yes/no questions using given attributes - I can explain that questions need to be ordered carefully to split objects into similarly sized groups 	
	To compare the information shown in a pictogram with a branching database	<ul style="list-style-type: none"> - I can compare two ways of presenting information - I can explain what a branching database tells me - I can explain what a pictogram tells me 	
Programming A MINECRAFT in Education (Whinstone added unit)	To get to know the basic controls within Minecraft Education Edition	<ul style="list-style-type: none"> - I can login to Minecraft Education Edition - I can use instructions to access a world ('How to Play' world) - I can use the keys on the keyboard to move, jump, smash and use the inventory 	
	To build using the inventory's blocks	<ul style="list-style-type: none"> - I can use the inventory to find and select blocks - I can use the blocks to build - I can work with other children to build a chosen task 	
	To know the order to make something happen and talk about this as an algorithm.	<ul style="list-style-type: none"> - I can give instructions to an Agent to move - I can predict the outcomes of a set of code (- what will the Agent do?) - I can explain what an algorithm of code can do 	
	To use sequence, selection, and repetition in programs	<ul style="list-style-type: none"> - I can design a set of code - I can explain how to simplify the code - I can use repetition 	
	To work with variables and conditions	<ul style="list-style-type: none"> - I understand what a 'condition' is within code - I can use condition within a set of code 	



Whinstone Primary School Year 3 Computing



	<p>To solve problems by decomposing them into smaller parts.</p> <p>To use sequence, selection, and repetition in programs</p>	<ul style="list-style-type: none"> - I understand what a loop is - I can use a loop within my code - I can use a loop within a loop 	
Creating Media	To recognise how text and images convey information	<ul style="list-style-type: none"> - I can explain the difference between text and images - I can identify the advantages and disadvantages of using text and images - I can recognise that text and images can communicate messages clearly 	Copyright and ownership Managing online information
Desktop Publishing	To recognise that text and layout can be edited	<ul style="list-style-type: none"> - I can change font style, size, and colours for a given purpose - I can edit text - I can explain that text can be changed to communicate more clearly 	
	To choose appropriate page settings	<ul style="list-style-type: none"> - I can create a template for a particular purpose - I can define the term 'page orientation' - I can recognise placeholders and say why they are important 	
	To add content to a desktop publishing publication	<ul style="list-style-type: none"> - I can choose the best locations for my content - I can make changes to content after I've added it - I can paste text and images to create a magazine cover 	
	To consider how different layouts can suit different purposes	<ul style="list-style-type: none"> - I can choose a suitable layout for a given purpose - I can identify different layouts - I can match a layout to a purpose 	
	To consider the benefits of desktop publishing	<ul style="list-style-type: none"> - I can compare work made on desktop publishing to work created by hand - I can identify the uses of desktop publishing in the real world - I can say why desktop publishing might be helpful 	
Programming B	To explain how a sprite moves in an existing project	<ul style="list-style-type: none"> - I can choose which keys to use for actions and explain my choices - I can explain the relationship between an event and an action - I can identify a way to improve a program 	
Events and Actions	To create a program to move a sprite in four directions	<ul style="list-style-type: none"> - I can choose a character for my project - I can choose a suitable size for a character in a maze - I can program movement 	
	To adapt a program to a new context	<ul style="list-style-type: none"> - I can choose blocks to set up my program - I can consider the real world when making design choices - I can use a programming extension 	
	To develop my program by adding features	<ul style="list-style-type: none"> - I can build more sequences of commands to make my design work - I can choose suitable keys to turn on additional features - I can identify additional features (from a given set of blocks) 	



Whinstone Primary School Year 3 Computing



	To identify and fix bugs in a program	<ul style="list-style-type: none"> - I can match a piece of code to an outcome - I can modify a program using a design - I can test a program against a given design 	
	To design and create a maze-based challenge	<ul style="list-style-type: none"> - I can evaluate my project - I can implement my design - I can make design choices and justify them 	
Creating Media Stop Frame Animation	To explain that animation is a sequence of drawings or photographs	<ul style="list-style-type: none"> - I can create an effective flip book-style animation - I can draw a sequence of pictures - I can explain how an animation/flip book works 	Copyright and ownership Managing online information
	To relate animated movement with a sequence of images	<ul style="list-style-type: none"> - I can create an effective stop frame animation - I can explain why little changes are needed for each frame - I can predict what an animation will look like 	
	To plan an animation	<ul style="list-style-type: none"> - I can break down a story into settings, characters and events - I can create a storyboard - I can describe an animation that is achievable on screen 	
	To identify the need to work consistently and carefully	<ul style="list-style-type: none"> - I can evaluate the quality of my animation - I can review a sequence of frames to check my work - I can use onion skinning to help me make small changes between frames 	
	To review and improve an animation	<ul style="list-style-type: none"> - I can evaluate another learner's animation - I can explain ways to make my animation better - I can improve my animation based on feedback 	
	To evaluate the impact of adding other media to an animation	<ul style="list-style-type: none"> - I can add other media to my animation - I can evaluate my final film - I can explain why I added other media to my animation 	

Online Safety and Security Strands are taken from the UKCCIS document 'Education for a Connected World' (June, 2020)

SKILLS	Learning Objective	Meeting expectations
Online safety and security	Self-image and identity	<ul style="list-style-type: none"> -I can explain what is meant by the term 'identity'. -I can explain how people can represent themselves in different ways online. -I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why.
	Online relationships	<ul style="list-style-type: none"> -I can describe ways people who have similar likes and interests can get together online. -I can explain what it means to 'know someone' online and why this might be different from knowing someone offline.



Whinstone Primary School Year 3 Computing



	<ul style="list-style-type: none"> -I can explain what is meant by ‘trusting someone online’, why this is different from ‘liking someone online’, and why it is important to be careful about who to trust online including what information and content they are trusted with. -I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried. -I can explain how someone’s feelings can be hurt by what is said or written online. -I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos.
Online reputation	<ul style="list-style-type: none"> -I can explain how to search for information about others online. -I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal. -I can explain who someone can ask if they are unsure about putting something online.
Online bullying	<ul style="list-style-type: none"> -I can describe appropriate ways to behave towards other people online and why this is important. -I can give examples of how bullying behaviour could appear online and how someone can get support.
Managing online information	<ul style="list-style-type: none"> -I can demonstrate how to use key phrases in search engines to gather accurate information online. -I can explain what autocomplete is and how to choose the best suggestion. -I can explain how the internet can be used to sell and buy things. -I can explain the difference between a ‘belief’, an ‘opinion’ and a ‘fact. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories etc. -I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed). -I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.
Health, well-being and lifestyle	<ul style="list-style-type: none"> -I can explain why spending too much time using technology can sometimes have a negative impact on anyone, e.g. mood, sleep, body, relationships; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged (e.g. doing homework, games, films, videos). -I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites).
Privacy and security	<ul style="list-style-type: none"> -I can describe simple strategies for creating and keeping passwords private. -I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult. -I can describe how connected devices can collect and share anyone’s information with others.
Copyright and ownership	<ul style="list-style-type: none"> -I can explain why copying someone else’s work from the internet without permission isn’t fair and can explain what problems this might cause.