



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 help our children to become creative at computing through the development of the Key Concepts in computing: **programming, data handling, communication, online safety, Computer networks and research and multimedia.**

- **Programming** (Computational thinking) involves taking that complex problem and breaking it down into a series of small, more manageable problems (decomposition). Each of these smaller problems can then be looked at individually, considering how similar problems have been solved previously (pattern recognition) and focusing only on the important details, while ignoring irrelevant information (abstraction). Simple steps or rules to solve each of the smaller problems can be designed (algorithms).
- **Data Handling** is gathering and recording statistics and then presenting it in a way that is meaningful to others. It is important to understanding how to input data, access it and use the information results (sorting and questioning).
- **Communication** By connecting people around the world and passing on packets of data from sender to recipient, the internet has created many opportunities. These range from communication (such as email, video conferencing, blogs, forums, social networks) and collaboration, such as wikis (including Wikipedia), to real-time collaborative editing.
- **Online Safety** It is crucial that we teach children to develop effective strategies for staying safe in a discriminating and effective way, as well as knowing how to make a positive contribution online. Every class’ first computing lesson every half term is a discrete online safety lesson.
- **Computer Networks and Research** Digital technology is a part of all our lives, with almost no sphere untouched by it. Children need to be aware that computers are all around us, ready to be programmed for it to work. Children need to appreciate how a computer works and how to use internet search engines effectively to get the results you want. It relies on specifying the right particular time frame, language, reading level or website.
- **Multimedia skills** which are major factors in enabling children to be confident, creative and independent learners. It is about solving problems and making useful things by the use of digital tools, such as spreadsheets, video editing applications and so on. It is our intention that children have every opportunity available to allow them to achieve this, within an ethos where computing impacts on all the subjects of the primary curriculum. Children need to know how to create information using word processing and presentations.





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.



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Computing Implementation

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

Year 5 Computing Implementation – Key Concepts

The Key Concepts of Computing at Whinstone are:

- Programming
- Data handling
- Communication
- Computer networks and research
- Multimedia
- Online Safety

In Year 5 Computing is taught in discrete lessons under the following broad topic headings:

There is a discrete lesson (first lesson of each half term) reinforcing and developing Online Safety

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Digital Art	Editing with imovie/clips/ Garageband	Internet Research and Webpage Design	Word Processing and Presentations	Scratch and Crumblebots	3D Model Sketch-up



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Topic Specific Vocabulary					
Programming	Data Handling	Communication	Computer Networks & Research	Multimedia	Online Safety
<p><u>Scratch and Crumblebots</u> Scratch, blocks, stage, scripts, sprite, algorithm, backdrop, costumes, coordinates, drawing, repeat blocks, cloning, speech bubble, thought bubble, tempo, volume, projects, turn, spin, red flag, motion, loops, Repeat, forever loops, repeat x times loops, forever if loops, If, else, simple variable Game design, costume change, point scoring, levels</p> <p>Crumblebot, motors, sensors, lights, percentage</p>			<p><u>Internet Research and Webpage Design</u> Search engine, effective search, internet, network, browser, world wide web, digital footprint Webpage, hyperlinks, images, publish</p>	<p><u>Digital Art Planning</u> Copy, paste, paint, thickness, thin, fill, text, shapes, tools, select, save, open, shade, effects, art style, William Morris style, pattern, repeat</p> <p><u>Presentations in iMovie/Clips</u> Import, timeline, title, ending credits Clips, transitions, effects, play full screen, delete clip viewer, video editing, media file, cut, frames, crop marker, audio, video, drag, start, end, screen, frames per second, play head, jpeg, rendering, splitting, toolbar, music, fade out, fade in, speed, 'Ken Burns' effect</p> <p><u>Word Processing and Presentations</u> Type, right hand, left hand, shift, capital letter, undo, redo, backspace,</p>	<p>Identity, online community, abuse, childline, mis-information, disinformation, sceptical, hoax, geolocation, permission, modification</p>



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				<p>delete, space bar, full stop, number keys, question mark, save, open</p> <p>Enter Key, Open a new page, Print, Cursor, Mouse and Arrow Keys</p> <p>Select a piece of text by Clicking and Dragging, Font Colour, Size, Style</p> <p>Bold, Italic, Underline, caps lock</p> <p>Horizontal Alignment, Vertical Alignment, Bullet Points, Bold, Italics, Word Processing, Read only, Document, Clipboard</p> <p>Clip Art, Drag and drop, Sort, Highlight, Drag-and-drop, Sort, Character, Portrait, Landscape, Spell check, Save, Save as, Text, Underline</p> <p>Headers, footers, page set up, columns, symbols, word count, tables, selection print, Ctrl shortcuts, Function Keys</p> <p><u><i>3D Modelling Sketchup</i></u></p> <p>3D shapes, manipulate, 3D model, design</p>	
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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.

Programming	Data Handling	Communication	Computer Networks & Research	Multimedia	Online Safety*
<p>Can design and make a program for a game, including original characters and backdrops</p> <p>Test and refine their programming</p> <p>Can program a device (crumblebot) to move in different directions, different speeds and can control lights.</p> <p>Is beginning to understand how sensors can work</p> <p>Can use a modelling</p>			<p>Can evaluate webpages</p> <p>Can create a simple webpage, considering layout, text, images, hyperlinks and can publish it</p>	<p>Can use a graphic program to design and repeat a pattern in the style of a famous artist (William Morris)</p> <p>Can manipulate digital images using a range of tools and software to convey an idea (eg aged film) as part of a bigger film project</p> <p>Can use video editing effectively to make a successful presentation which includes titles, transitions, music and video effects such as cropping, green screen and speed</p> <p>Can use advanced tools in word processing such as headers and footers, tables, appropriate text formatting, line spacing to create quality documents</p>	<p>Understands how identity online can be copied, modified or altered</p> <p>Understands how to make positive contributions to online communities</p> <p>Knows how to block abusive users</p> <p>Understands the difference between mis-information and dis-information</p> <p>Understands how technology can affect healthy sleep and can give advice to prevent this</p> <p>Is aware that apps/services can read and share private information and/or can take payment for additional content</p>



program to manipulate and create a 3D model of my own					Understands when it is acceptable to use the work of others
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**Online Safety Strands are taken from the UKCCIS document 'Education for a Connected World' (Feb, 2018)*

Computing Impact

At the end of each topic teachers will evaluate what knowledge and skills pupils have gained within the Key Concepts.

Online Safety	Discrete lesson (first lesson of each half term)
Self-image and identity	I can explain how identity online can be copied, modified or altered.
	I can demonstrate responsible choices about my online identity, depending on context.
Online Relationships	I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault.
	I can make positive contributions and be part of online communities.
	I can describe some of the communities in which I am involved and describe how I collaborate with others positively.
Online Reputation	I can search for information about an individual online and create a summary report of the information I find.
	I can describe ways that information about people online can be used by others to make judgments about an individual.
Online bullying	I can recognise when someone is upset, hurt or angry online. I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone.
	I can explain how to block abusive users.
	I can explain how I would report online bullying on the apps and platforms that I use.
	I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. Childline).



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Managing online information	I can use different search technologies.
	I can evaluate digital content and can explain how I make choices from search results.
	I can explain key concepts including: data, information, fact, opinion belief, true, false, valid, reliable and evidence.
	I understand the difference between online mis-information (inaccurate information distributed by accident) and dis-information (inaccurate information deliberately distributed and intended to mislead).
	I can explain what is meant by 'being sceptical'. I can give examples of when and why it is important to be 'sceptical'.
	I can explain what is meant by a ' hoax '. I can explain why I need to think carefully before I forward anything online. I can explain why some information I find online may not be honest, accurate or legal.
	I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation either by accident or on purpose).
Health, wellbeing and lifestyle	I can describe ways technology can affect healthy sleep and can describe some of the issues.
	I can describe some strategies, tips or advice to promote healthy sleep with regards to technology.
Privacy and Security	I can create and use strong and secure passwords.
	I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others.
	I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing.
Copyright and Ownership	I can assess and justify when it is acceptable to use the work of others.



I can give examples of content that is permitted to be reused.

SKILLS	Meeting expectations
Multimedia	DIGITAL ART Planning William Morris
	I can use a program to create a small pattern
	I can repeat that pattern in the style of William Morris
Multimedia	PRESENTATIONS IN IMOVIE/CLIPS BEAMISH Presentation Planning (iMovie, Clips or Adobe Spark)
	I can take photos and edit them to add old effects
	I can take videos and edit them to add old effects
	I can edit my videos to shorten them
	I can copy and paste videos on my timeline
	I can add transitions with good effect
	I can add titles to complement the era of the video
	I can music to my video
	I can fade out the music
	I can crop a photo/video within my project I can change the speed of my video to add effect
Computer networks and searching	INTERNET RESEARCH AND WEBPAGE DESIGN
	I can evaluate webpages
	I can create a webpage layout
	I can add text to a webpage
	I can add images to a webpage
	I can add hyperlinks to a webpage I can publish and share my webpage
Multimedia	WORD PROCESSING AND PRESENTATIONS
	Use headers and footers
	Using Page Set Up
	Put text into Columns



	Use Find and Replace
	Insert Symbols
	Use Word Count
	Insert Tables
	Print a Selection
	Use Ctrl shortcuts and Function keys
Programming	SCRATCH 'Learn To Code Book 2'
	I can design and program a character game
	I can design an original character or backdrop for a game
	I can add features or effects to enhance a game
	I can create an original animated game with a specific goal
	I can program costume changes for a sprite
	I can add point-scoring and levels to game code
	CRUMBLEBOTS
	I can program a crumblebot to move in different directions
	I understand how the percentage relates to speed
	I can plan set of instructions to achieve a given floor pattern
	I can use instructions to switch on lights and can change their colour
	I am beginning to understand how to use sensors to follow a line
Programming	3D MODELLING: SKETCHUP
	I can draw 3D shapes
	I can add detail to 3D drawings
	I can add and manipulate 3D models
	I can create a complex 3D model
	I can create a complex 3D model of my own design