Program of Study for Computing and Online Safety

Intent: - What do we intend pupils to learn?

This Computing curriculum is **ambitious** because:

- It develops **a wide range of knowledge, skills, understanding** and constructive **attitudes** towards technology
- It develops the underlying processes and metacognition needed for students to have a deep understanding of Computer Systems
- It recognises that students have the right to become **more than competent operators of technology** – that they are able to adapt, understand and make discerning use of the technology around them.
- It integrates the latest DFE guidance on Online Safety therefore making sure that the ethics of Computer use are addressed. This is vital for building positive social capital in any society.
- It complements the vision of the National Centre of Computing Education
- It covers online safety, with sequenced learning objectives from Education For an Connected World in the following areas:

Click links to view starter activities in these strands for KS1+KS2

Self Image and Identity

Online Relationships

Managing Online Information

Online Reputation and Online Bullying

Copyright and Ownership – in development

Health, wellbeing and lifestyle

Privacy and Security - in development

You can find further resources via Project Evolve from The South West Grid For Learning – these are resourced longer lessons type activities.

This Computing curriculum is coherently **planned and sequenced** because:

- There are broad themes that align vertically through each key stage: **Programming, Multimedia and Digital Literacy**
- **Objectives** within each strand are progressive, and share a common language so that there is progression in Computer Science skills
- The objectives allow usage in either a discrete or cross-curricular way.
- **Online Safety** is taught periodically in a planned and sequenced way, building layers of resilience against inappropriate **conduct, content and contact**
- This document provides access to customizable resources and lesson plans, s**o that additional content can be included or adapted by teachers as needed.**

This Computing curriculum contributes to a **broad and balanced ethos** because:

- It focuses on a wider range of **knowledge and skill** than the operation of devices – contributing to children **becoming well informed and rounded** learners
- It provides access **to sequences of lessons** looking at a **wide range of real-world applications** of Computing
- It allows the classroom practitioner to include cross curricular work – for example with Mathematics and Data handling

Implementation

- Teachers have an appropriate level or knowledge for the subject, which is supported through the access to sequences of lessons, resources and planning within this scheme if work. Where staff need support, there is access to planning, teaching and coaching support from The White Horse Federation School Improvement team
- The learning is structured to help with retention of knowledge and underlying skills – for example, in programming, children will systematically develop their skills in prediction, investigation, making and modifying and improving.
- The curriculum is designed to reduce workload for staff by providing access to resources, technology that works across different devices, so that they can concentrate on teaching and monitoring the children's learning.
- The curriculum supports the school's wider ambitions towards reading – key questions, success criteria, and information about online safety allow children to use their reading skills. Debugging code develops skills in scanning techniques, and reinforces the need for accurate syntax.

Monitoring

- The White Horse Federation has created a training and monitoring schedule, which ensures that Computing and Online Safety training and monitoring are done in a coherent way.

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](#)

Reception Online Safety objectives *(Taken from UKCCIS Education for a Connected World)*

Self-Image and Identity	Online Relationships	Online Reputation and Online Bullying	Managing Online Information	Health, well-being and lifestyle	Privacy and security	Copyright and ownership
- 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.	- I can recognise some ways in which the internet can be used to communicate. - I can give examples of how I (might) use technology to communicate with people I know.	- 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 ways that I can put information on the internet.	- I can talk about how I can use the internet to find things out. - I can identify devices I could use to access information on the internet. - I can give simple examples of how to find information (e.g. search engine, voice activated searching).	- I can identify rules that help keep us safe and healthy in and beyond the home when using technology. - I can give some simple examples	- 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.	- I know that work I create belongs to me. - I can name my work so that others know it belongs to me.

Year one Computer Science Objectives

Computer Science (Programming and Computational Thinking)		Information Technology		Digital Literacy (Communication and collaboration)	
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		**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 keyboard on any 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		**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	
Term 1 - programming Lesson Powerpoints can be found here	Term 4 - programming Resources for lessons can be found below	Term 2 Multimedia **Lesson PowerPoints can be found** here **Ipad/Christmas Friendly Multimedia can be found** here	Term 5 - Multimedia **Use this term to deepen or broaden knowledge, addressing any misconceptions.**	Term 3 - digital literacy - research skills Lesson Powerpoints can be found here	Term 6 - digital literacy - computers in the wider world 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 **See planning guide**	Resources **See planning guide**

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

Year 1 Online Safety objectives (Taken from rtyUKCCIS Education for a Connected World)

	Self-Image and Identity	Online Relationships	Managing Online Information	Online Reputation and Online Bullying	Health, well-being and lifestyle Copyright and Ownership	Privacy and security
Objectives	- I can recognise that there may be people online who could make me feel sad, embarrassed or upset. - If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust.	- I can use the internet with adult support to communicate with people I know. - I can explain why it is important to be considerate and kind to people online.	- I can describe how to behave online in ways that do not upset others and can give examples	-I can use the internet to find things out. - I can use simple keywords in search engines. - I can describe and demonstrate how to get help from a trusted adult or helpline if I find content that makes me feel sad, uncomfortable worried or frightened.	- I can explain rules to keep us safe when we are using technology both in and beyond the home - I can give examples of some of these rules. -I can explain why work I create using technology belongs to me. - I can say why it belongs to me (e.g. 'it is my idea' or 'I designed it'). - I can save my work so that others know it belongs to me (e.g. filename, name on content).	- I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school). - I can explain why I should always ask a trusted adult before I share any information about myself online. - I can explain how passwords can be used to protect information and devices.

For further support and guidance…
- Online Safety curriculum links documents (for ideas of how to link Online Safety to the wider curriculum and other resources/links)
- TWHF Online Safety Starters document (for scenarios and discussion topics)
- https://evolve.swgfl.co.uk/ (for lesson plans and activities linked to each objective - work ongoing)

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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...

Computer Science (Programming and Computational Thinking)

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.

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

Information Technology

In progression from objectives taught in the previous year, pupils...

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

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

Digital Literacy (Communication and collaboration)

In progression from objectives taught in the previous year, pupils...

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, 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	Programming	Multimedia	Multimedia	Term 3 or Year A - Research Skills	Term 6 or Year B
Term 1 or Year A Lesson PowerPoints can be found **here**	Term 4 or Year B Lesson guides can be found here	Term 2 or Year A - Creating content on a computer Lesson PowerPoints can be found **here** Christmas Friendly Multimedia can be found **here**	Term 5 or Year B - Data Handling on a Computer Celebrating differences with data Lesson Powerpoints in development	Lesson plans can be found **here**	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 Scratch jr	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 **Non PurpleMash resources:** **Word Processing:** BBC dance mat typing **Art:** **Abstract painting**	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**	See planning guide	See Planning guide

		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 2 Online Safety objectives *(Taken from UKCCIS Education for a Connected World)*					
Self-Image and Identity Term 1	**Online Relationships Term 2**	**Managing Online Information Term 3**	**Online Reputation Online Bullying**	**Health, well-being and lifestyle Copyright and ownership**	**Privacy and security**
- I can explain how other people's identity online can be different to their identity in real life. - I can describe ways in which people might make themselves look different online.	- I can use the internet to communicate with people I don't know well (e.g. email a penpal in another school/ country). - I can give examples of how I might use	-I can use keywords in search engines. - I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back	- I can give examples of bullying behaviour and how it could look online. - I understand how bullying can make someone feel. I can talk about how someone	- I can explain simple guidance for using technology in different environments and settings. - I can say how those rules/guides can help me. -I can describe why other people's work belongs to them. - I can recognise that content on the internet may belong to other people.	- I can describe how online information about me could be seen by others. - I can describe and explain some rules for keeping my information private. - I can explain what passwords are and can use passwords for my accounts and devices.

- I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help.	technology to communicate with others I don't know well.	buttons; links, tabs and sections). - I can explain what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri). - I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'. - I can explain why some information I find online may not be true.	can/would get help about being bullied online or offline. -I can explain how information put online about me can last for a long time. - I know who to talk to if I think someone has made a mistake about putting something online.		- I can explain how many devices in my home could be connected to the internet and can list some of those devices.

Year 3 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… **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/Year A - Programming **Lesson PowerPoints can be found here**	**Term 4 /Year B - Programming** **Lesson PowerPoints can be found here**	**Term 2/ Year A - Multimedia** **Lesson PowerPoints 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**	**Term 5/ Year B - Data Handling** **Physical Geography** **Lesson Powerpoints in development**	**Term 3 /Digital Literacy - Research skills** **Lesson guides can be found here**	**Term 6/ Digital Literacy** **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**	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**	**See planning guide**

		Stop Frame Animation:			
		https://www.culturestreet.org.uk/activities/stopframeanimator/			
		Online flpbook maker			
		Music:			
		Beatbox simulator			
		Virtual piano			
		Creating muisc with loopshttps://drumbit.app/			
		Photo editing:			
		Making badges, top trumps etc			

Year 3 Online Safety objectives

Taken from UKCCIS Education for a Connected World https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759003/Education_for_a_connected_world_PDF.PDF

Self-Image and Identity	Online Relationships	Managing Online Information	Online Reputation Online Bullying	Health, well-being and lifestyle Copyright and ownership	Privacy and security
- I can explain how my online identity can be different to the identity I present in 'real life'. - Knowing this, I can describe the right decisions about how I interact with others and how others perceive me	- I can describe strategies for safe and fun experiences in a range of online social environments. - I can give examples of how to be respectful to others online.	- I can analyse information and differentiate between 'opinions', 'beliefs' and 'facts. - I understand what criteria have to be met before something is a 'fact' - I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). - I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online.	- I can identify some online technologies where bullying might take place. - I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). - I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation	- I can explain how using technology can distract me from other things I might do or should be doing - I can identify times or situations when I might need to limit the amount of time I use technology. - I can suggest strategies to help me limit this time. - When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it.	- I can explain what a strong password is - I can describe strategies for keeping my personal information private, depending on context. - I can explain that others online can pretend to be me or other people, including my friends. - I can suggest reasons why they might do this. I can explain how internet use can be monitored.

| | | - I can explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people.
- I can explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true.

- | I can describe how others can find out information about me by looking online.

- I can explain ways that some of the information about me online could have been created, copied or shared by others. | - I can give some simple examples of items that are covered by copyright | |

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 **Pupils also know:** That a **function** is a named section of a program that does a certain task or job.	**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. **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	**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, **Use** 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

Term 1 / Year A - Programming	Term 4 / Year B Programming	Term 2 / Year A - Multimedia	Term 5 / Year B – Data Handling	Term 3 / Year A - Digital Literacy	Term 6 / Year B - Digital Literacy
Lesson PowerPoints can be found here	**Resources to broaden and deepen can be found below:**	**Lesson PowerPoints can be found here** **Login card templates for pupil's passwords can be found here**	**Superhero Statistics** **Lesson Powerpoints in development**	**Lesson guides can be found here**	**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:** **Abstract painting** **Street art painting** **Paint package** **Stop Frame Animation:** https://www.culturestreet.org.uk/activities/stopframeanimator/ Online flipbook maker **Music:**	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**	**Please consult the lesson guides**

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

Year 4 Online Safety objectives

Taken from UKCCIS Education for a Connected World https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759003/Education_for_a_connected_world_PDF.PDF

Self-Image and Identity	Online Relationships	Managing Online Information	Online Reputation Online Bullying	Health, well-being and lifestyle -Copyright and ownership	Privacy and security
- I can explain what is meant by the term 'identity' - I can explain how I can represent myself in different ways online. - I can explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an avatar; social media).	- I can describe ways people who have similar likes and interests can get together online. - I can give examples of technology specific forms of communication (e.g. emojis, acronyms, text speak). - I can explain some risks of communicating online with others I don't know well. - I can explain how my and other people's feelings can be hurt by what is said or written online. - I can explain why I should be careful who I trust online and what information I can trust them with. - I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried. - I can explain what it means to 'know someone' online	- I can use key phrases in search engines. - 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'	- I can search for information about myself online. - I can recognise I need to be careful before I share anything about myself or others online. - I know who I should ask if I am not sure if I should put something online. -I can explain what bullying is and can describe how people may bully others. - I can describe rules about how to behave online and how I follow them.	- I can explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos). - I can explain why copying someone else's work from the internet without permission can cause problems. - I can give examples of what those problems might be. -	- I can give reasons why I should only share information with people I choose to and can trust. - I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. - I understand and can give reasons why passwords are important. - I can describe simple strategies for creating and keeping passwords private. - I can describe how connected devices can collect and share my information with others.

	and why this might be different from knowing someone in real life. - I can explain what is meant by 'trusting someone online'. - I can explain why this is different from 'liking someone online'			

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 **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		**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	
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 /Year B –Data Handling** **Data Detectives** **Lesson Powerpoints in development**	**Term 3 /Year A - Digital Literacy - Research skills** **Lesson guides can be found here**	**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)	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**

		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:** 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 5 Online Safety objectives

Taken from UKCCIS Education for a Connected World https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759003/Education_for_a_connected_world_PDF.PDF

Self-Image and Identity	Online Relationships	Online Reputation Online Bullying	Managing Online Information	Health, well-being and lifestyle Copyright and ownership	Privacy and security
- I can explain how identity online can be copied, modified or altered. - I can demonstrate responsible choices about my online identity, depending on context.	- 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.	- 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). 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	- 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 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 -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	- 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.

		people online can be used by others to make judgments about an individual. -	- 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).		

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 **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	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** 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	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

		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** **Lesson Powerpoints can be found Here**	**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 found [here](#) - feel free to download and change the topic.**	**Term 6 or Year B** Lesson guides can be found [here](#)
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/ Online flipbook maker **Music:**	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**

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

Year 6 Online Safety objectives

Taken from UKCCIS Education for a Connected World https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759003/Education_for_a_connected_world_PDF.PDF

Self-Image and Identity	Online Relationships	Online Reputation And Online Bullying	Managing Online Information	Health, well-being and lifestyle Copyright and Ownership	Privacy and security
- I can describe ways in which media can shape ideas about gender. - I can identify messages about gender roles and make judgements based on them. - I can challenge and explain why it is important to reject inappropriate messages about gender online. - I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. - I know and can give examples of how I	- I can show I understand my responsibilities for the well-being of others in my online social group. - I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming). - I can demonstrate how I would support others (including those who are having difficulties) online. - I can demonstrate ways of reporting	- I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. - I can identify a range of ways to report concerns both in school and at home about online bullying. -I can explain how I am developing an online reputation which will allow other people to form an opinion of me. - I can describe some simple ways that help	- I can use search technologies effectively. - I can explain how search engines work and how results are selected and ranked. - I can demonstrate the strategies I would apply to be discerning in evaluating digital content. - I can describe how some online information can be opinion and can offer examples. - I can explain how and why some people may present 'opinions' as 'facts'. - I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online (e.g. advertising and 'ad targeting'). - I can demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important.	- I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. - I can assess and action different strategies to limit the impact of technology on my health (e.g. nightshift mode, regular breaks, correct posture, sleep, diet and exercise). - I can explain the importance of self-regulating my use of technology; I can demonstrate the strategies I use to do this (e.g. monitoring my time online, avoiding accidents). - I can demonstrate the use of search tools to find and access online content which can be reused by others. - I can demonstrate how to make references to and acknowledge sources I have used from the internet.	- I use different passwords for a range of online services. - I can describe effective strategies for managing those passwords (e.g. password managers,acronyms, stories). - I know what to do if my password is lost or stolen. - I can explain what app permissions are and can give some examples from the technology or services I use. - I can describe simple ways to increase privacy on apps and services that provide privacy settings. - I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing

might get help, both on and offline. - I can explain why I should keep asking until I get the help I need.	problems online for both myself and my friends. -	build a positive online reputation.	- I can identify, flag and report inappropriate content.		

Computing implementation – How does planning, design and delivery work?

Planning and sequencing builds on previous learning and address misconceptions

Structure allows flexibility for changes depending on the local circumstances of the school

Social Capital

- A large proportion of jobs use technology of some kind e.g the world wide projected revenue generated through networked devices for 2030 will be £8100,000,000 compared to £750,000,000 in 2007
- Children can be competent operators, but may not understand the underlying process of why things happen – this limits the ability to understand, modify and cope with technological change
- Online Safety will be a life long skill, that will be of critical importance to the protection of the individual and community.
- Learners are likely to grow up with technology around them. Although children may naturally develop into competent operators of computing, if they are not aware of the underlying concepts, rewards and risks of technology they cannot be discerning users. These concepts and approaches are the underlying themes that run through your curriculum and across other subjects – The intention of your curriculum is to develop these concepts and approaches

By teaching the skills and content in TWHF Program of Study, our pupils are taught to meet all of the 2014 NC Computing objectives:

Key stage 1
- 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
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key stage 2
- 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.

(The National Curriculum – Computing Subject content)

The Computational Thinkers

concepts

Logic – Predicting & analysing

Evaluation – Making judgements

Algorithms – Making steps & rules

Patterns – Spotting & using similarities

Decomposition – Breaking down into parts

approaches

Tinkering – Changing things to see what happens

Creating – Designing & making

Debugging – Finding & fixing errors

Persevering – Keeping going