Bromesberrow St. Mary's Computing Curriculum

Intent

At Bromesberrow St. Mary's school our intent for Computing is (as for the whole curriculum) to build knowledge 'cumulatively', so that children build on their knowledge of the digital world, as they grow throughout the school, reaching for the stars with Hope and Aspiration. We teach children that technology can be used in a balanced way where it can enhance learning and enjoyment. Our core drivers for Computing are to ensure children develop:

- A good understanding of **computer science**, (how computer systems work) through algorithms, binary, networks, coding etc, so that children understand the basic principles of information and computation, how digital systems work and how to put this knowledge to use through programming.
- A good understanding of **information technology**, (the creation, manipulation and organisation of digital content), so that are able to present, analyse and evaluate data, expressing themselves through this using word processing, spreadsheets, graphing, databases, simulations, animation, blogging and presentation tools.
- Strong **digital literacy** skills, through e-safety, email and effective searching

Implementation

We use Purple Mash, a cloud based curriculum, to ensure that we prepare children for life in an ever changing digital world. We strive to develop their skills, understanding and confidence to learn and problem solve in a way that will enable them to confidently use existing technologies and technology of the future. To enhance this, we have included in our curriculum links to other subjects, showing the interconnectedness and application of computing as a cross curricular subject. To further supplement the digital literacy element we:

- Attend e-safety events through Gloucestershire Safeguarding Children's Board e.g. In the Net.
- Visit Skillzone, an amazing resource, which brings safeguarding to life in a safe and purpose built context.
- Plan for e-safety focussed assemblies
- Have e safety planned in as part of our PSHE curriculum.
- Take part in National e-safety week.

Units in blue will be taught alongside other subjects and those in red are discrete computing units. This plan is to ensure that we have a clear coverage plan in place to enable all children to experience the breadth of the National Curriculum for computing and to support learning in other subjects with technology. Class One has a one year cycle, Class Two, a two year cycle and Class Three, a three year cycle.

We have adopted the STEM.org 'I can Statements' for each year group, to support staff and pupils to clearly understand what the learning expectation is for each year group, as well as show the breadth of the Computing Curriculum through the themes of:

- E-safety
- Programming
- Handling Data
- Multi-media
- Technology in our lives

We have ensured that our curriculum covers these areas (please see full progression below)

Impact

In order for our Computing Curriculum to have had an impact, we would want to be able to see that children have a well-developed knowledge, skills and understanding, preparing them for the next stage of their education:

- Children who know how to keep themselves safe online
- Children who are confident and creative users of technology, being programmers, researchers, bloggers, data analysts etc…
- Children who are able to express themselves through different digital means e.g. presenting their ideas and concepts.
- Children who can use technology as a means to communicate e.g. through email and blogging

Class One (EYFS and Y1)

EYFS

In the early years computing should be seen as a subject and tool that permeates the curriculum. Computing hardware and software should be used to enhance and enrichen the curriculum, providing opportunities for simulation and connections to the larger world beyond the classroom experience. We use Purple Mash as our main tool to do this, but also provide opportunities for children to interact with technology through other areas of the curriculum e.g. using the virtual T-shirt in Science, sound spots to support English reading and Beebots for programming, debugging and directional language.

Preschool

In preschool we focus on the core goals and providing children with opportunities to explore technology and engage with a range of software. Our provocations provide stimuli to develop children's understanding of technology e.g. Bee Bot directions, recordable microphones, hand held microscopes and sound buttons. The 'I can statements' are our curriculum aims for preschool (these have been adapted from Stem.org)

	e-Safety	Programming	Handling Data	Multimedia	Technology in our Lives
Foundation Stage 3-4 yr. olds	• I can ask an adult when I want to use the Internet. • I can tell an adult when something worrying or unexpected happens while I am using the Internet. • I can be kind to my friends. • I can talk about the amount of time I spend using a computer / tablet / game device. • I am careful with technology devices.	• I can make a floor robot move. • 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. • I can use a safe part of the Internet to play and learn.

Reception

'I Can' Statements for Reception

	e-Safety	Programming	Handling Data	Multimedia	Technology in our Lives
Foundation Stage	• I am learning that I need to ask an adult when I want to use the Internet. • I can tell an adult when something worrying or unexpected happens while I am using the Internet. • I can be kind to my friends. • With support I am able to be careful with technology devices.	• With support, I can make a floor robot move. • With support, I can use simple software to make something happen. • I am beginning to make choices about the buttons and icons I press, touch or click on. • I can launch and quit a programme	• I am beginning to talk about different kinds of information such as pictures, video, text and sound.	• I can move objects on a screen, confidently with my finger and am learning with the mouse how to click and drag. • I can create shapes on a screen and am beginning to insert text e.g. inputting my name. • I can use technology to show my learning.	• I can recognise technology in school. • I can operate simple equipment with support • I can use a safe part of the Internet to play and learn.

Computing Through the EYFS using Purple Mash

Below we have carefully broken down the areas of learning to show how Purple Mash provides broad and rich opportunities for learning throughout the early year's curriculum:

Communication and Language

Listening and Attention:

-Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions.
-Make comments about what they have heard and ask questions to clarify their understanding
- Hold conversation when engaged in back-and-forth exchanges with their teacher and peers.

Key skills:
-Use the videos in Simple City as a starting point for discussion for various topics. Children to respond to what they see with questions and comments.
-Children to be confident to share ideas, thoughts, feelings and to question these to deepen thinking. -Children to actively explore and create to clarify and deepen thinking, and to use creations to initiate conversation and discussion
Resources:
Simple City Videos: The Farm, The Café, The Doctors, The Vets, The Zoo, The Garden Centre, The Builders
Topic Picture Slide Shows: (also found within individual topic pins) About Me, What I Like, Autumn, Baby Animals, Feeding Baby Animals, Builders, Building Parts, Castles 1, Castles 2, Chinese New Year 1, Chinese New Year 2, Christmas 1 etc…
2Create a story, 2Beat and 2Explore

Speaking:

-Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.
- Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate.
-**:** Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher.

Key Skills:
-Children able to use Mashcams as a means to role play a wide variety of different roles and characters. Children can input their own picture and write or record their voice. This can be linked to topic to build vocabulary use and

application.
- To use videos and slide shows as a stimulus for communication. Children to offer explanations as to why things may happen and make links to recent stories and role play e.g. vet domestic play.
- Children can use 2Create a story to produce their own stories. Children can draw simple pictures, use the simple animation tools and record their voice to tell their story in full sentences.

Resources:
Mashcam
Simple City Videos: The Farm, The Café, The Doctors, The Vets, The Zoo, The Garden Centre, The Builders
Topic Picture Slide Shows: (also found within individual topic pins) About Me, What I Like, Autumn, Baby Animals, Feeding Baby Animals, Builders, Building Parts, Castles 1, Castles 2, Chinese New Year 1, Chinese New Year 2, Christmas 1 etc…
2create a story

Personal, Social and Emotional Development

Building relationships:
-Work and play cooperatively and take turns with others.
-Form positive attachments to adults and friendships with peers.
-Show sensitivity to their own and to others' needs

Key Skills
Children to use 2Beat and 2explore to explore music making together and join in to create their own 'bands'
Children to listen to other children's creations and comment on the parts they enjoy the most
Children to be able to share the ipad and PC as a resource, supporting their partner/peer
Children to use Mashcams to explore taking pictures of each other and selfies- provides an opportunity to discuss who likes/dislikes having their photograph taken and why
Children to know that it is important to ask permission before taking a photgraph of someone else.

Resources:
Mashcam
2Explore
2Beat

Managing Self:
- Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.
- Explain the reasons for rules, know right from wrong and try to behave accordingly.

-Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.

Key skills
Children to use the Mini Mash home screens to provide an opportunity to explore a new environment and different activities.
Children to explore painting with tools, creating pictures and printing off the finish piece
Children to be able to share what they like/dislike, their achievements and discoveries.
Children to develop a better sense of self through using mini mash 'topic pins' e.g. discussing and sharing favourite foods from the greengrocers
Children to use 2Count to vote for their favourite foods

Resources
Minimash home screens and topic pins
2Count

Self-regulation:
-Show an understanding of their own feelings and those of others and begin to regulate their behaviour accordingly.
-Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate.
-Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions.

Key skills
Children confident to access the resources, including slideshows, jigsaws and paint projects on the topic of feelings.
Children can discuss the different feelings that they experience, what can make them feel like that as well as any physical responses they might have with that feeling.
Children to be encouraged to use paint projects e.g. myself to discuss and share feelings through what they paint and create

Resources
Mini mash topic pins- All about Me and Feelings
Paint Projects- Myself

Physical Development

Fine Motor Skills:

-Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases.
- Use a range of small tools, including scissors, paint brushes and cutlery.
-Begin to show accuracy and care when drawing.

Key Skills

Children to use 2Handwrite to demonstrate, record and play back letter formation, handwriting joins and spelling patterns.
Children to use 2Paint on an iPad to help with fine motor skills and movements giving opportunities for children to practise their accuracy and care in drawing.
Children to use 2Paint on an interactive whiteboard to help larger scale movement
Children to practice fine motor skills and movements through playing games which include dragging and dropping.

Resources:

2Handwrite
2Paintapicture
2Paint Projects
Jigsaws and 2pairs

Gross Motor Skills:

-Negotiate space and obstacles safely, with consideration for themselves and others.
-Demonstrate strength, balance and coordination when playing.
-Move energetically, such as running, jumping, dancing, hopping, skipping and climbing.

Key skills:

Learn from the 'outdoor scene from minimash- discussing movements, actions and the importance of being active outside

Resources:

Minimash Outdoor scene

Literacy

Word Reading

Say a sound for each letter in the alphabet and at least 10 digraphs.
Read words consistent with their phonic knowledge by sound-blending.
Read aloud simple sentences and books that are consistent with their phonic knowledge, including some common exception words.

Key skills:

-Children read mashcam character speech bubbles and follow character instructions
-learn, explore and apply phonics knowledge of initial sounds from the alphabet slideshow and quizzes
-practise and apply phase 2 and 3 knowledge using phonics resources
-Apply and practise reading and decoding skills using topic stories

Resources:
Minimash topic stories
Phonics Resources,
Mashcams
Alphabet sideshow
Alphabet quizzes

Writing
Write recognisable letters, most of which are correctly formed.
Spell words by identifying sounds in them and representing the sounds with a letter or letters.
Write simple phrases and sentences that can be read by others

Key Skills:
Write sentences using mashcam speech bubbles
Plan writing using 2-connect
Create interactive stories, adding text to images, sounds and animation
Write different text types using the mini topics e.g. a card to a friend or a healthy shopping list

Resources:
Mashcam
2-connect
2Create a story
Mini topics

Comprehension
Demonstrate understanding of what has been read to them by retelling stories and narratives using their own words and recently introduced vocabulary.
Anticipate – where appropriate – key events in stories.
Use and understand recently introduced vocabulary during discussions about stories, nonfiction, rhymes and poems and during role-play.

Key skills:
Answer questions, make connections and draw simple conclusions from Mashcam character's speech bubbles
Develop vocabulary and understanding through writing own stories and reading others
Develop comprehension and understanding through reading and interacting with the fairy tale slideshows

Resources:
Mashcam
2 create a story
Fairy Tale Slideshows

Mathematics

Number

Have a deep understanding of number to 10, including the composition of each number.
Subitise (recognise quantities without counting) up to 5.
Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts

Key skills:
-Compare, recognise and match numbers up to 10 (differentiation by levels) using Maths City and Toyshop
- Recognise and recall number pairs using Toyshop and explore money developing addition and subtraction skills
-Explore number through numeral recognition and matching on the farm, as well as addition of two numbers
-Be able to subitise to 5 using A-fish-metric game

Resources:
Maths City
Toyshop
Racing
Farm
A-fish-metic

Numerical Patterns

Verbally count beyond 20, recognising the pattern of the counting system.
Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.

Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Key skills:
Compare, recognise and match numbers up to 10 (differentiation by levels) using Maths City and Toyshop
- Recognise and recall number pairs using Toyshop and explore money developing addition and subtraction skills
-Explore number through numeral recognition and matching on the farm, as well as addition of two numbers
-Be able to subitise to 5 using A-fish-metric game
-Apply knowledge of number to 20 using 2Count
-Use 2Paint projects to improve number pattern knowledge

Resources:
Maths City
Toyshop
Racing
Farm
A-fish-metic
2Count
Paint Projects e.g. Ladybird Doubles

Expressive Arts and Design

Being Imaginative and Expressive

Invent, adapt and recount narratives and stories with peers and their teacher.
Sing a range of well-known nursery rhymes and songs.
Perform songs, rhymes, poems and stories with others, and – when appropriate – try to move in time with music.

Key skills:
-Use images and animations, altering these using effects tools from 2 Create a story and mashcams
-Explore music and sound making using 2Explore and 2Beat

Resources:
2Create
Mashcams

2Explore
2Beat

Creating with Materials

Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
Share their creations, explaining the process they have used.
Make use of props and materials when role playing characters in narratives and stories

Key skills:
-Explore and create 3D models using 2Design and make
-Explore different digital effects using 2Paint e.g. the swirly and spinner tool
-Experiment with textures in Paint Projects
- Explore music and sound making using 2Explore and 2Beat, practising and composing

Resources:
2Design and Make
2Paint
Paint Projects
2Explore
2Beat

Understanding the World

People, cultures and communities

Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps.
Know some similarities and differences between different religious and cultural communities in this country, drawing on their experiences and what has been read in class.
Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps.

Key Skills:
-Gain a good understanding of self and others using topic pins e.g. growing and all about me
-Know about different environments and ways of life exploring simple city areas
-Have opportunity to talk about and learn from different cultures e.g. the celebrations paint projects spark questions and enquiry
-Explore and gain a better understanding of local area through maps created through slideshow creator

Resources:
Topic Pins
Simple City
Celebrations Paint Projects
Slideshow Creator

Past and Present

Talk about the lives of the people around them and their roles in society.
Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class.
Understand the past through settings, characters and events encountered in books read in class and storytelling.

Key skills:
-Discuss and gain an understanding of different people and their roles in society through topic pins e.g. people who help us
-Compare and contrast using slideshows e.g. toys from the past and present

Resources:
Topic Pins
slideshows

The Natural World

Explore the natural world around them, making observations and drawing pictures of animals and plants.
Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Key skills:
-learn about the natural world around us using topic pins e.g. seasons and under the sea
-Broaden and deepen understanding and engagement with topics through the topics area e.g. plants
-Connect, organise, discuss and extend thinking using the 2Connect resource
-Interact with Simple City to investigate different places e.g. the farm

Resources:

Topics
Topic pins
2Connect
Simple City

Early Years Computing Vocabulary:

Preschool: internet, tablet, computer, technology, beebot, robot, move, button, icon, open, close, start, information, pictures, video, text, sound, screen, safe, equipment

Reception: internet, tablet, computer, technology, beebot, robot, move, button, icon, open, close, launch, start, information, pictures, video, text, sound, screen, safe, equipment, press, touch, swipe, click, double click, drag, insert

Year 1 Curriculum

Year 1 'I Can Statements'

	e-Safety	Programming	Handling Data	Multimedia	Technology in our Lives
Year 1	• I can keep my password private. • I can tell you what personal information is. • I can tell an adult when I see something unexpected or worrying online. • I can talk about why it's important to be kind and polite. • I can recognise an age appropriate website. • I can agree and follow sensible e-Safety rules.	• I can give instructions to my friend and follow their instructions to move around. • I can describe what happens when I press buttons on a robot. • I can press the buttons in the correct order to make my robot do what I want. • I can describe what actions I will need to do to make something happen and begin to use the word algorithm. • I can begin to predict what will happen for a short sequence of instructions. • I can begin to use software/apps to create movement and patterns on a screen. • I can use the word debug when I correct mistakes when I program.	• I can talk about the different ways in which information can be shown. • I can use technology to collect information, including photos, video and sound. • I can sort different kinds of information and present it to others. • I can add information to a pictograph and talk to you about what I have found out.	• I can be creative with different technology tools. • I can use technology to create and present my ideas. • I can use the keyboard or a word bank on my device to enter text. • I can save information in a special place and retrieve it again.	• I can recognise the ways we use technology in our classroom. • I can recognise ways that technology is used in my home and community. • I can use links to websites to find information. • I can begin to identify some of the benefits of using technology.

Year 1 Progression (1 year cycle)

Units in red are taught as discrete computing

Units in blue are where computing skills will be practised in supporting another subject

Autumn	Spring	Summer
Online Safety and Exploring Purple Mash (4wks) NC 4 and 6 **Objective:** 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 skills:** Log on and log off safely and understand about passwords. Navigate purple mash (e.g. 2dos, my work) Manage their work to open save, print. Start to add text and pictures on purple mash. **Resources**: Penguin Pig password safety and Monkey Cow imposters on the internet **Computing through the curriculum** **-Grouping and Sorting (2wks)** (Maths, Science) NC.4 **Key Skills:** Sorting shapes and fruit by criteria **-Pictograms (3wks)** (Maths Science) NC 4 and 5	**Maze Explorers (4 wks)** Maths, Geography NC 1,2,3 **Objectives:** 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. **Key Skills***:* Use directional keys in 2 go. Understand what an algorithm is and how to create and debug a set of algorithms. Set each other challenges **Resources:** 2Go and Beebots **Computing through the Curriculum** ***As part of maths*** **-Spreadsheets (3wks)** Maths NC 4 and 5 **Objectives:**	**Coding (6wks)** NC 1,2,3,4 **Objectives:** Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. **Key Skills:** Learning to code through imitating, innovating and inventing. To learn what coding is. To read, move and organise blocks of code. Design and create backgrounds. Include change and move characters. To learn to read and use commands e.g. collision detection. To use sound. **Resources:** 2 code **Computing through the Curriculum** ***As part of English*** **-Animated Story Books (5wks)** NC 4,5,6 **Objectives:** use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Key Skills: Contribute to a class pictogram Know data can be presented using pictures. Use pictograms to present results from an experiment. **Resources**: 2 Count and 2 Connect -**Lego Builders (3wks)** English, Art, D and T NC 1 **Key Skills**: Importance of following instructions. -**Technology through time** History To recognise common uses of information technology beyond school and how these have evolved over time. **Follow and create instructions on a computer (2 wks)** **Objectives:** Use technology purposefully to create, organise, store, manipulate and retrieve digital content. **Key Skills:** The importance of the order of instructions. Link to algorithms. **Resources:** 2 paint. 2 Publish (Storyboard)	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. **Key Skills:** Add images to spreadsheets Use speak and count tools in 2calculate Learn about cells, columns, rows, arrow keys, delete, backspace. Use move and lock tool **Resources:** 2 calculate	**Key Skills:** Develop the skills to create, organise, store, improve, manipulate and retrieve digital content through the creation of their own animated story book. Draw pictures, animate art and add sound. **Resources:** 2 Create a Story

Commented [T1]: Link to instructions in English instructions to make a sandwich and following instructions in Art. Building using lego DT

Class 2 Curriculum

Year 2 'I Can' Statements

	e-Safety	Programming	Handling Data	Multimedia	Technology in our Lives
Year 2	• I can explain why I need to keep my password and personal information private. • I can describe the things that happen online that I must tell an adult about. • I can talk about why I should go online for a short amount of time. • I can talk about why it is important to be kind and polite online and in real life. • I know that not everyone is who they say they are on the Internet.	• I can give instructions to my friend (using forward, backward and turn) and physically follow their instructions. • I can tell you the order I need to do things to make something happen and talk about this as an algorithm. • I can program a robot or software to do a particular task. • I can look at my friend's program and tell you what will happen. • I can use programming software to make objects move. • I can watch a program execute and spot where it goes wrong so that I can debug it.	• I talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder. • I can make and save a chart or graph using the data I collect. • I can talk about the data that is shown in my chart or graph. • I am starting to understand a branching database. • I can tell you what kind of information I could use to help me investigate a question.	• I can use technology to organise and present my ideas in different ways. • I can use the keyboard on my device to add, delete and space text for others to read. • I can tell you about an online tool that will help me to share my ideas with other people. • I can save and open files on the device I use. •	• I can tell you why I use technology in the classroom. • I can tell you why I use technology in my home and community. • I am starting to understand that other people have created the information I use. • I can identify benefits of using technology including finding information, creating and communicating. • I can talk about the differences between the Internet and things in the physical world.

Year 3 'I Can' Statements

	e-Safety	Programming	Handling Data	Multimedia	Technology in our Lives
Year 3	• I can talk about what makes a secure password and why they are important. • I can protect my personal information when I do different things online. • I can use the safety features of websites as well as reporting concerns to an adult. • I can recognise websites and games appropriate for my age. • I can make good choices about how long I spend online. • I ask an adult before downloading files and games from the Internet. • I can post positive comments online.	• I can break an open-ended problem up into smaller parts. • I can put programming commands into a sequence to achieve a specific outcome. • I keep testing my program and can recognise when I need to debug it. • I can use repeat commands. • I can describe the algorithm I will need for a simple task. • I can detect a problem in an algorithm which could result in unsuccessful programming.	• I can talk about the different ways data can be organised. • I can search a ready-made database to answer questions. • I can collect data help me answer a question. • I can add to a database. • I can make a branching database. • I can use a data logger to monitor changes and can talk about the information collected.	• I can create different effects with different technology tools. • I can combine a mixture of text, graphics and sound to share my ideas and learning. • I can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker. • I can evaluate my work and improve its effectiveness. • I can use an appropriate tool to share my work online.	• I can save and retrieve work on the Internet, the school network or my own device. • I can talk about the parts of a computer. • I can tell you ways to communicate with others online. • I can describe the World Wide Web as the part of the Internet that contains websites. • I can use search tools to find and use an appropriate website. • I think about whether I can use images that I find online in my own work.

Class 2 Progression (Year 2 and 3 with a 2 year cycle)

Units in red are taught as discrete computing

Units in blue are where computing skills will be practised in supporting another subject

Additional work using computing to support learning in other subjects

Autumn A	Spring A	Summer A
Coding (6 wks) NC – 1,2,3 7,8,9 **Year 2** **Objectives**: Review-change backgrounds, change characters, design and coding screens Algorithm -(use blocks to a series of algorithms and explain what they are doing) Repeat- (use a repeat command for a turtle, character and add buttons) Understand how turtle's characters and buttons have different properties and different code Timer- (use every and after to program outputs at certain times) Debugging **Year 3** Review –(flow charts - Object, Action, Output, Control and Event)	**Graphing (2wks) (**Maths, Science) NC 4 and 7 10 **Objectives**: Enter data Present information from an investigation in a graph Share in 2Blog [Y 2 Use pictograms if required] **Resources:** 2 graph, 2Blog 2 count **Spreadsheets (4wks)** NC 5 and 12 *Review skills from year 1 (understanding rows and (columns, using tools from tool kit to add properties to the cells)* *Using totalling, cutting and pasting* *Using spreadsheets to add* *Creating tables and block graphs) focussed teaching year 2 Year 3 cover in 1 week as revision)* **Year 3** **Objectives:**	**Typing (2weeks)** **Email (4 weeks)**English writing letters, PSHE/internet safety NC4,5 and 10 *To think about different methods of communication* *Open, respond to email using address book* *Use e mail safely* *Y3Add attachments* *Learn about cc and bcc* **Effective Searching (ongoing use some of 2.5)** (link to Topic, Science) Understand parts of a web search engine and how to read results) **Making Music (3 wks)** **Word processing** Using Microsoft office to word process for a specific subject e.g. a recount in history **Position and Direction linked to Maths, Geography** **NC 1 and 7** **Using map on 2 logo for giving directions using fd,bk, left, right angles** **Programs 2logo**

Physical Stream- (write a program and explain how it simulates vehicles movements) If commands-(use timer and if blocks, understand position in terms of x and y positions on the screen) Variables (define and use variables combined with timers to create sequences of outputs) Repetition (pupils can use and explain repeat) Debug Learn and use key vocab: algorithm, input, object, action, output, control, event, Repeat, variable. Bug, Debug **Resources:** 2Code **Online Safety (3wks)** linked to pshe Autumn term and ongoing discussions and reminders about passwords, what information we share on line, who we tell if children are worried NC 6 and 13 *2.2 1Effective searching on purple mash* *Share work on display boards* *To have a knowledge of sharing work more globally on the internet*	Pie chart bar graph Advanced mode of 2 calculate Resources: 2 Calculate **Presenting Information (4 weeks)** NC4 and 12 linked to Science Growing Plants **Objectives:** Present information about growing plants in different ways as a mind map, a quiz, a fact file and an animation **Resources** 2publish, 2Quiz, 2animate. 2connect **Branching Diagrams/Questioning (4 weeks)** NC5 and 12 **Objectives:** To show information on pictograms is limited To use yes/no questions to separate information (include more/less) Create branching diagrams	

3.2 2To understand that not everything is true on the internet and learn how to check information and what sites to trust. *2.2 1To understand that information put online leaves a digital footprint* *To consider ways to keep digital information safe* Programs publish https://www.allaboutexplorers.com/		

Autumn B	Spring B	SummerB
Coding (6 wks) NC – 1,2,3 7,8,9 Y 2 *Review change backgrounds, change characters, design and coding screens* *Algorithm (use blocks to a series of algorithms and explain what they are doing)* *Repeat (use a repeat command for a turtle, character and add buttons)* *Understand how turtles characters and buttons have different properties and different code* *Timer (use every and after to program outputs at certain times)* *Debugging* Program – 2code Chimp *Y 3* *Review –(flow charts* - Object, Action, Output, Control and Event*)*	Graphing to present data from science experiments NC 4 and 7 Spreadsheets (4wks) NC 5 and 12 *Review skills from year 1 (understanding rows and (columns, using tools from tool kit to add properties to the cells)* *Using totalling, cutting and pasting* *Using spreadsheets to add* *Creating tables and block graphs) focussed teaching year 2 Year 3 cover in 1 week as revision)* *Year 3* *Pie chart bar graph* *Advanced mode of 2 calculate* Program – 2 Calculate	**Typing (2weeks)** **Email (4 weeks)**English writing letters, PSHE/internet safety NC4,5 and 10 *To think about different methods of communication* *Open, respond to email using address book* *Use e mail safely* *Y3Add attachments* *Learn about cc and bcc* **Effective Searching (ongoing use some of 2.5)** (link to Topic, Science) Understand parts of a web search engine and how to read results) **Branching Diagrams/Questioning** NC – 5 and 12 **Creating Pictures(5 weeks)** Program 2 paint a picture

Physical Stream- (write a program and explain how it simulates vehicles movements) *If commands(use timer and if blocks, understand position in terms of x and y positions on the screen)* *Variables (define and use variables combined with timers to create sequences of outputs)* *Repetition (pupils can use and explain repeat)* *Debug* *Learn and use key vocab: algorithm, input, object, action, output, control, event, Repeat, variable. Bug, Debug* Programs – 2code (gibbon) **Online Safety (3wks)** NC-13 linked to pshe Autumn term and ongoing discussions and reminders about passwords, what information we share on line, who we tell if children are worried *What makes a good safe password* *To understand how the internet helps communication* *Share ideas using class blog* *To use and send e mails* *To consider how and what we can say online* *To understand age restriction ratings.* *To know where to turn if online materials is inappropriate* Programs -2connect **Word processing**		**Word processing** Using Microsoft office to word process for a specific subject e.g. a recount in history

Using Microsoft office to word process for a specific subject e.g. a letter in English		

Year 4 I Can Statements

	e-Safety	Programming	Handling Data	Multimedia	Technology in our Lives
Year 4	• I choose a secure password when I am using a website. • I can talk about the ways I can protect myself and my friends from harm online. • I use the safety features of websites as well as reporting concerns to an adult. • I know that anything I post online can be seen by others. • I choose websites and games that are appropriate for my age. • I can help my friends make good choices about the time they spend online. • I can talk about why I need to ask a trusted adult before downloading files and games from the Internet. • I comment positively and respectfully online.	• I can use logical thinking to solve an open-ended problem by breaking it up into smaller parts. • I can use an efficient procedure to simplify a program. • I can use a sensor to detect a change which can select an action within my program. • I know that I need to keep testing my program while I am putting it together. • I can use a variety of tools to create a program. • I can recognise an error in a program and debug it. • I recognise that an algorithm will help me to sequence more complex programs. • I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology.	• I can organise data in different ways. • I can collect data and identify where it could be inaccurate. • I can plan, create and search a database to answer questions. • I can choose the best way to present data to my friends. • I can use a data logger to record and share my readings with my friends.	• I can use photos, video and sound to create an atmosphere when presenting to different audiences. • I am confident to explore new media to extend what I can achieve. • I can change the appearance of text to increase its effectiveness. • I can create, modify and present documents for a particular purpose. • I can use a keyboard confidently and make use of a spellchecker to write and review my work. • I can use an appropriate tool to share my work and collaborate online. • I can give constructive feedback to my friends to help them improve their work and refine my own work.	• I can tell you whether a resource I am using is on the Internet, the school network or my own device. • I can identify key words to use when searching safely on the World Wide Web. • I think about the reliability of information I read on the World Wide Web. • I can tell you how to check who owns photos, text and clipart. • I can create a hyperlink to a resource on the World Wide Web.

Year 5 'I Can' Statements

	e-Safety	Programming	Handling Data	Multimedia	Technology in our Live
Year 5	• I protect my password and other personal information. • I can explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult. • I know that anything I post online can be seen, used and may affect others. • I can talk about the dangers of spending too long online or playing a game. • I can explain the importance of communicating kindly and respectfully. • I can discuss the importance of choosing an age-appropriate website or game. • I can explain why I need to protect my computer or device from harm. • I know which resources on the Internet I can download and use.	• I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. • I can refine a procedure using repeat commands to improve a program. • I can use a variable to increase programming possibilities. • I can change an input to a program to achieve a different output. • I can use 'if' and 'then' commands to select an action. • I can talk about how a computer model can provide information about a physical system. • I can use logical reasoning to detect and debug mistakes in a program. • I use logical thinking, imagination and creativity to extend a program.	• I can use a spreadsheet and database to collect and record data. • I can choose an appropriate tool to help me collect data.. • I can present data in an appropriate way. • I can search a database using different operators to refine my search. • I can talk about mistakes in data and suggest how it could be checked.	• I can use text, photo, sound and video editing tools to refine my work. • I can use the skills I have already developed to create content using unfamiliar technology. • I can select, use and combine the appropriate technology tools to create effects that will have an impact on others. • I can select an appropriate online or offline tool to create and share ideas. • I can review and improve my own work and support others to improve their work.	• I can describe different parts of the Internet. • I can use different online communication tools for different purposes. • I can use a search engine to find appropriate information and check its reliability. • I can recognise and evaluate different types of information I find on the World Wide Web. • I can describe the different parts of a webpage. • I can find out who the information on a webpage belongs to.

Year 6 'I Can' Statements

	e-Safety	Programming	Handling Data	Multimedia	Technology in our Lives
Year 6	• I protect my password and other personal information. • I can explain the consequences of sharing too much about myself online. • I support my friends to protect themselves and make good choices online, including reporting concerns to an adult. • I can explain the consequences of spending too much time online or on a game. • I can explain the consequences to myself and others of not communicating kindly and respectfully. • I protect my computer or device from harm on the Internet.	• I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. • I can explain and program each of the steps in my algorithm. • I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. • I can recognise when I need to use a variable to achieve a required output. • I can use a variable and operators to stop a program. • I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen. • I can use logical reasoning to detect and correct errors in a algorithms and programs.	• I can plan the process needed to investigate the world around me. • I can select the most effective tool to collect data for my investigation. • I can check the data I collect for accuracy and plausibility. • I can interpret the data I collect. • I can present the data I collect in an appropriate way. • I use the skills I have developed to interrogate a database.	• I can talk about audience, atmosphere and structure when planning a particular outcome. • I can confidently identify the potential of unfamiliar technology to increase my creativity. • I can combine a range of media, recognising the contribution of each to achieve a particular outcome. • I can tell you why I select a particular online tool for a specific purpose. • I can be digitally discerning when evaluating the effectiveness of my own work and the work of others.	• I can tell you the Internet services I need to use for different purposes. • I can describe how information is transported on the Internet. • I can select an appropriate tool to communicate and collaborate online. • I can talk about the way search results are selected and ranked. • I can check the reliability of a website. • I can tell you about copyright and acknowledge the sources of information that I find online.

Class 3 (year 4,5,6) 3 year cycle units in red are taught as discrete computing

Units in blue are where computing skills will be practised in supporting another subject

Autumn A	Spring A	Summer A
Coding (6 wks) NC-7,8,9 Purple Mash Crash Coding Y4 Using PRIMM Approach: • Predict… what this code will do • Run… the code to check your prediction • Investigate… trace through the code to see if you were correct • Modify... the code to add detail, change actions/outcome • Make… a new program that uses the same ideas in a different way. Get creative! **Objectives:** Know that **algorithms** are a precise set of instructions in coding. Be able to describe the **algorithms** they use Be able to add **objects** including characters and **backgrounds** to create a **scene** in **Design Mode** Use **coding blocks** to create **actions** and **events** e.g. when space bar clicked the fairy moves up.	**Spreadsheets(up to 5 weeks)** NC – 12 Purple Mash Refer to 4.3 and crash course 4.3 **Objectives:** Children can use the number formatting tools within 2Calculate to appropriately format numbers. Children can add a formula to a cell to automatically make a calculation in that cell Children can use the timer, random number and spin button tools. Children can combine tools to make fun ways to explore number. Children can use a series of data in a spreadsheet to create a line graph. Children can use a line graph to find out when the temperature in the playground will reach 20°C. Children can make practical use of a spreadsheet to help them plan actions.	**Effective Searching** (3 weeks) NC- 10, 11 Purple Mash Refer to 4.7 **Objectives:** Create search queries to locate specific information. Search to answer a series of questions. Analyse the contents of a web page for clues about the credibility of the information **Resources:** Search Engines- Google, Kiddle, Duck Duck Go, Bing, Internet recap quiz Finding answers **Vocabulary:** Easter egg, internet, internet browser, search, search engine, spoof website, website **Blogging (up to 6 weeks)**(links to topic, Literacy, PSHE, Year 6 business enterprise) NC 10 Purple Mash Refer to 6.4

Understand **timer** as a button that allows a block of commands to be run either after a timed delay or at regular timed intervals. Understand **repeat** as a button to make a block of commands run a set number of times or to repeat a block of commands forever Understand **if/else** as a command that tests a condition. If the condition is true then the commands inside the "IF" block are run. If the condition is not true and there is an "ELSE" block then the commands inside the "ELSE" block are run. Understand that a **variable** is used in programming to keep track of the things that can change while a program is running, for example, the on/off state of a switch Be able to create and change **variables** To be able to design their own interactive scene, confidently making several **Resources** -Program2code Gibbon -Program: 2Code Gorilla (some Gibbon) **Vocabulary**:	Children can use the currency formatting in 2Calculate. Children can allocate values to images and use these to explore place value. Children can use a spreadsheet made in 2Calculate to check their understanding of a mathematical concept. **Cross Curricular:** Science - graphing Maths decimals/fractions, percentage, currency, budgeting on a spreadsheet, average, real life situation, line graphs **Resources:** Programs- 2calculate/ excel Spelling and maths games examples Line Graph examples Party prices Budget formulae **Vocabulary:** Average function tool, columns, equals tool, advance mode, cells, copy and paste, charts, formula, formula wizard, move cell tool, random tool, rows, spin tool, spreadsheet, timer **Understanding Binary** **6.8 (up to 4 weeks)**	**Objectives:** To identify the purpose of writing a blog and its key features. To plan the theme and content for a blog and write the content. To consider the effect upon the audience of changing the visual properties of the blog. To understand the importance of regularly updating the content of a blog. To understand how to contribute to an existing blog. To understand how and why blog posts are approved by the teacher. To understand the importance of commenting on blogs **Resources:** 2Blog, 2write, 2connect examplarblogcontent **Vocabulary:** audience, blog page, blog, blog post, icon, collaborative **Word processing** Using Microsoft office to word process for a specific subject e.g. a recount in history or a scientific report

Year 4:Action, alert, algorithm, background, scene, image, button, code block, debug, command, coordinates, developer, event, object, run, execute, flowchart, nesting, if, if/else, variable, predict, prompt, repeat, selection, simulation, object types, prompt for input, repeat until, variable value **Year 5**: Action, alert, algorithm, background, scene, image, button, code block, called, debug, physical system, abstraction, command, coordinates, developer, event, object, run, execute, variable, decomposition, flowchart, nesting, if, if/else, predict, prompt, properties, repeat, selection, simulation, timer, string, tab, score, object types, prompt for input, repeat until, variable value **Year 6:** Action, alert, algorithm, background, button, code block, called, debug, physical system, abstraction, command, called, coordinates, execute, decomposition, developer, event, flowchart, function, get input, if/else, launch command, object, nesting, procedure, variable, number variable, predict, nesting, prompt, properties, repeat, run, scene, selection, simulation, timer, string, tab, user input, variable, output	To know what the terms binary and denary mean and how they relate to the number system, the digital system and the terms base-10 and base-2 To relate binary to the on and off states of electrical switches. To convert numbers from decimal to binary. To convert numbers from binary to decimal. To represent states of object in their own program using binary. Vocabulary: Integer, Base 10 (decimal)(denary), Base 2 , (Binary), bit, byte, Gigabyte (GB), Kilobyte (KB) Programs: 2dos 2Connect 2Question	

Online Safety (3wks) NC-13 Refer to 4.1,5.1,6.1 and ongoing reference to developments in the online world (social media, games etc.) linked to PSHE **Objectives:** Children know that security symbols such as a padlock protect their identity online. Children know the meaning of the term 'phishing' and are aware of the existence of scam websites. Children can explain what a digital footprint is and how it relates to identity theft. Children can give examples of things that they would not want to be in their digital footprint Children can identify possible risks of installing free and paid for software. Children know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer. Children know what a computer virus is		

Children can determine whether activities that they undertake online, infringe another's' copyright. They know the difference between researching and using information and copying it Children know about citing sources that they have used. Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. Children can give reasons for limiting screen time. **Resources:** Online Safety Top tips Digital connections Tim Bernes Lee Profile Plagiarism quiz Screen time record card Screen study time Screen time database Malware slideshow Digital footprint quiz Spam Confidential information		

Downloading software **Vocabulary:** Y4: Plagiarism, Digital footprint, screen time, spam, confidential, database, download, software, identify, phishing, copyright **Word processing** Using Microsoft office to word process for a specific subject e.g. a recount in English		

Autumn B	**Spring B**	**SummerB**
Coding (6 wks) NC – NC-7,8,9 Purple Mash Crash Coding Y5 Using PRIMM Approach: • Predict… what this code will do • Run… the code to check your prediction • Investigate… trace through the code to see if you were correct • Modify... the code to add detail, change actions/outcome • Make… a new program that uses the same ideas in a different way. Get creative! **Objectives:**	**Spreadsheets(up to 5 weeks)** NC – 12 Refer to 5.3 **Objectives:** Children can create a formula in a spreadsheet to convert m to cm. Children can apply this to creating a spreadsheet that converts miles to km and vice versa. Children can use a spreadsheet to work out which letters appear most often. Children can use the 'how many' tool Children can use a spreadsheet to work out the area and perimeter of rectangles.	**Game Creator (links to DT) (up 5 wks)** **NC 7, 11** **5.5** **Objectives** review and analyse a computer game made in 2DIY3D Begin the process of designing their own game. design the setting for their game so that it fits with the selected theme Upload images or use the drawing tools to create the walls, floor, and roof design characters for their game. Decide upon, and change, the animations and sounds that the characters make

Review understanding of 2code vocabulary previously learned Use simplified code and variables to make coding more efficient Children can plan their own **algorithm** modelling the sequence of traffic lights Understand what a **simulation** is (a model that represents a real or imagined situation) Use planned algorithm to program a traffic light simulation to work in 2Code Understand **decomposition** as the process of breaking task down into smaller achievable steps Children recognise the need to start coding at a basic level of **abstraction** to remove superfluous details from their program that do not contribute to the aim of the task. Understand how **friction** coding block can be used with corresponding background image to represent a physical system e.g. football on sand, with higher friction programmed equals quicker to stop. Use **functions** (type of variable) in code to make coding more efficient e.g. when a football hits a wall (Gibbon Functions)	Children can use these calculations to solve a real-life problem. Children can create simple formulae that use different variables. Children can create a formula that will work out how many days there are in x number of weeks or years. Children can use a spreadsheet to model a real-life situation and come up with solutions that can be practically applied. **Cross curricular:** Science - graphing Maths conversions of measurements e.g. centimetres to metres, millilitres to litres, Celsius to Fahrenheit, Modelling perimeter and area Planning an event recipe etc. Creating formulae to calculate days from weeks and weeks from years **Resources:** Conversion and temperature examples example vowel counter Cuboid counter **Vocabulary:**	make their game more unique by selecting the appropriate options to maximise the playability. write informative instructions for their game so that other people can play it Evaluate their and peers' games evaluate my their own and peers' games to help improve their design for the future. **Resources:** Program:2DIY3D **Vocabulary:** animation, computer game, customise, playability, perspective, instructions, texture evaluation instructions, interactive, screenshot, **Modelling** (4 week) Introduction to Computer Aided Design NC – 11, Purple Mash Refer to 5.5 **Objectives:** Introduction to the use and purpose of 2Design and Make/CAD. Explore different viewpoints in whilst designing a building. Explore the effect of moving points when designing the 3d shape of a vehicle. Explore how to edit the polygon 3D models to design a 3D model for a purpose.

Know what a **string** is -a string is a sequence of characters, which could form words, phrases or even whole sentences e.g. in Alien Blaster 'hard alien blasted, loud alien blasted' string displayed on left hand side of screen to show you what is happening, like a running commentary Begin to understand **concatenation** as linking things together in sequence Able to create and use strings in programming. Able to change the variables appropriately and know some ways that text variables can be used in coding Use strings to create a range of **outputs** To use the Launch command in 2Code Gorilla To program a football playable game with timers and scorepad. **Resources:** Program: 2Code Gorilla (some Gibbon) Gibbon Traffic Lights Gibbon Functions **Vocabulary**:	average, columns, equals tool, advance mode, cells, copy and paste, charts, formula, formula wizard, move cell tool, random tool, rows, spin tool, spreadsheet, timer Programs- 2calculate/ excel **Word processing** Using Microsoft office to word process for a specific subject e.g. a recount in history or a scientific report	Understand printing and making. Refine one of their designs to prepare it for printing, print and then create net. **Resources** Design and Make Sketch up free software **Vocabulary:** Computer Aided Design (CAD) modelling, polygon, 2D, 3D, Net, points, 3d printing, Template **Word processing** Using Microsoft office to word process for a specific subject e.g. a historical report or a poem in English

Year 4:Action, alert, algorithm, background, scene, image, button, code block, debug, command, coordinates, developer, event, object, run, execute, flowchart, nesting, if, if/else, variable, predict, prompt, repeat, selection, simulation, object types, prompt for input, repeat until, variable value **Year 5**: Action, alert, algorithm, background, scene, image, button, code block, called, debug, physical system, abstraction, command, coordinates, developer, event, object, run, execute, variable, decomposition, flowchart, nesting, if, if/else, predict, prompt, properties, repeat, selection, simulation, timer, string, tab, score, object types, prompt for input, repeat until, variable value **Year 6:** Action, alert, algorithm, background, button, code block, called, debug, physical system, abstraction, command, called, coordinates, execute, decomposition, developer, event, flowchart, function, get input, if/else, launch command, object, nesting, procedure, variable, number variable, predict, nesting, prompt, properties, repeat, run, scene, selection, simulation, timer, string, tab, user input, variable, output		

Online Safety (3wks) NC-13 Refer to 4.1,5.1,6.1 and ongoing reference to developments in the online world (social media, games etc.) linked to PSHE **Objectives:** Children critically about the information that they share online both about themselves and others. Children know who to tell if they are upset by something that happens online. Children can use the SMART rules as a source of guidance when online. Children think critically about what they share online, even when asked by a usually reliable person to share something. Children have clear ideas about good passwords. Children can see how they can use images and digital technology to create effects not possible without technology.		

Children have experienced how image manipulation could be used to upset them or others even using simple, freely available tools and little specialist knowledge. Children can cite all sources when researching and explain the importance of this. Children select keywords and search techniques to find relevant information and increase reliability. Children show an understanding of the advantages and disadvantages of different forms of communication and when it is appropriate to use each. **Resources:** Safety recap cards Smart crew 2connect Blank comic book Password quiz Plagiarism quiz Fact finding citations Citations slideshow SMART thinking 2write examples Communication dilemmas		

Autumn C	Spring C	Summer C
Coding (6 wks) **NC** – 7,8,9 **Crash Coding Y6** Using PRIMM Approach: • Predict… what this code will do • Run… the code to check your prediction • Investigate… trace through the code to see if you were correct • Modify... the code to add detail, change actions/outcome • Make… a new program that uses the same ideas in a different way. Get creative! **Objectives:** Recap coding vocabulary using Y6 flashcards and coding vocabulary quiz Children to understand what the term '**debugging**' means and how to do this Design and write a more complex computer program involving: • Planning a program that involves a timer and a score (use 2code planner and Making a timer and scorecard resources) • Follow own plans to create a program	**Databases 5.4 (up to 4 wks)** **NC- 12** • *To learn how to search for information in a database.* • *To contribute to a class database.* • *To create a database around a chosen topic.* Vocabulary: avatar, collaborative, record, binary tree, data, sort, group, ,arrange,charts,find,statistics ,table Programs: 2question, 2investigate **Word processing** Using Microsoft office to word process for a specific subject e.g. a recount in history or a scientific report	**Using Logo (**Maths position, direction, angles, shapes; History, minotaur maze) NC-7,8,9 Purple Mash 4.5 **Objectives** To learn the structure of the coding language of Logo. To input simple instructions in Logo. Using 2Logo to create letters and shapes. To use the Repeat function in Logo to create shapes. To use and build procedures in Logo. Input algorithms and depbug where needed Use pu and pd to draw **Networks 6.6** (3weeks) **Objectives** To learn about what the Internet consists of. To find out what a LAN and a WAN are. To find out how the Internet is accessed in school. To research and find out about the age of the Internet.

• Debug when things do not run as expected. To understand and use **functions** and **call functions** Able to explain how their code executes when their program is run Understand **concatenation** as linking things together in sequence Code programs that take **text input** from the user and use this in the program. Attribute variables to **user input** (user input example resource) Be aware of the need to code for all possibilities when using user input. Follow through the code of how a text adventure can be programmed in 2Code (Y6 text adventure and text adventure functions resource). Design their own text-based adventure game based on one they have played (storyboard planner, 2code planner and Y6 text adventure and text adventure functions resource) Focus on planning in order to include and keep track of objects, attributes, actions and variables in game.		To think about what the future might hold **Resources:** 2Connect Tim Berners-Lee Profile, Communication Questionnaire Slideshow Network Devices Internet and world wide web quiz **Vocabulary**: internet, world wide web, network, Local Area Network (LAN), Wide Area Network 9WAN), Router, Network Cables, Wireless **Word processing** Using Microsoft office to word process for a specific subject e.g. a recount in history or a scientific report

Include timing, scoring, response on click, collisions, repeat, if, if/else/ numbers, strings, functions and call To understand interactivity To use **flowcharts** to test and debug programs (use Billy's Bedroom Flowchart as example) **Resources**: Program: 2Code Gorilla (some Gibbon) Coding vocabulary cards Coding vocabulary quiz 2Code Planner Billy's Bedroom Flowchart Storyboard planner Y6 text adventure and text adventure functions resource Gorilla Football Game, Feed the Duck Game etc **Vocabulary**: **Year 4**:Action, alert, algorithm, background, scene, image, button, code block, debug, command, coordinates, developer, event, object, run, execute, flowchart, nesting, if, if/else, variable, predict, prompt, repeat, selection, simulation, object types, prompt for input, repeat until, variable value **Year 5**: Action, alert, algorithm, background, scene, image, button, code		

block, called, debug, physical system, abstraction, command, coordinates, developer, event, object, run, execute, variable, decomposition, flowchart, nesting, if, if/else, predict, prompt, properties, repeat, selection, simulation, timer, string, tab, score, object types, prompt for input, repeat until, variable value **Year 6:** Action, alert, algorithm, background, button, code block, called, debug, physical system, abstraction, command, called, coordinates, execute, decomposition, developer, event, flowchart, function, get input, if/else, launch command, object, nesting, procedure, variable, number variable, predict, nesting, prompt, properties, repeat, run, scene, selection, simulation, timer, string, tab, user input, variable, output Online Safety (3wks) NC-13 **Objectives:** Children have used the example game and further research to refresh their memories about risks online including sharing location, secure websites, spoof websites, phishing, and other email scams.		

Children have used the example game and further research to refresh their memories about the steps they can take to protect themselves including protecting their digital footprint, where to go for help, smart rules and security software. Children understand how what they share impacts upon themselves and upon others in the long-term. Children know about the consequences of promoting inappropriate content online and how to put a stop to such behaviour when they experience it or witness it as a bystander. Children' actions demonstrate that they also feel a responsibility to others when communicating and sharing content online Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. Children can give reasons for limiting screen time. Children can talk about the positives and negative aspects of technology and balance these opposing views.		

Children have an internalised in-depth understanding of the risks and benefits of an online presence. **Resources:** Online safety games Applicants database Digital footprints detectives Applicant data Digital footprint writing template Screen time record sheet Screen time study Screen time database Using technology to improve lives Digital footprint quiz and slideshows Digital connections Location sharing debate		