Computing

Unit Overviews

Computing

Overview of Topics

	Autumn: **Information Technology**	**Spring:** **Digital Literacy**	**Summer:** **Computer Science**
EYFS		Chromebook Passports	Explore Busy Things
KS1 A	Touch Typing (Busy Things) Creating and Storing: Digital Art and Music (Saving)	Managing Online Information Health, Wellbeing and Lifestyle Privacy and Security Copyright and Ownership	Algorithms & Robots Early Coding
KS1 B	Typing in Context (Google Docs) Data	Self-Image and Identity Online Relationships Online Reputation Online Bullying	Turtle Busy Code
LKS2 A	Touch Typing (Dance Mat) Creating and Storing: Images and Animation (File types)	Managing Online Information Health, Wellbeing and Lifestyle Privacy and Security Copyright and Ownership	Networks & Hardware Logo
LKS2 B	Typing in Context (Google Slides) Data & Spreadsheets	Self-Image and Identity Online Relationships Online Reputation Online Bullying	Busy Code Visual Code
UKS2 A	Touch Typing	Managing Online Information	Networks & Hardware Micro:bits

	Creating and Storing: Movie Makers and Game Creators (Binary)	Health, Wellbeing and Lifestyle Privacy and Security Copyright and Ownership	
UKS2 B	Typing in Context (Google Docs) Data & Spreadsheets	Self-Image and Identity Online Relationships Online Reputation Online Bullying	Visual Code

EYFS

Autumn	Spring	Summer
	Chromebook Passports	Explore Busy Things

Key Stage 1

(Years 1 and 2)

Class: Seed
Big Question: Do you remember?
Unit: Touch Typing
Year A/Year B Autumn /Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Pupils should already have achieved a number of skills in their Chromebook Passports before starting this unit.</td><td rowspan="4">• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td>1</td><td>What’s the date?
Learn how to type the short and long date on the Chromebook to practice typing numbers and capital letters.</td><td rowspan="4">A series of typing games and activities on Busy Things.</td></tr>
<tr><td>Key Vocabulary
Typing
Word processing
Keyboard
Keys
QWERTY
Shift key
Spacebar</td><td>2-3</td><td>Where are the keys?
Learn to locate the keys on the keyboard by playing ‘Tree keys’ on Busy Things and completing worksheets.</td></tr>
<tr><td></td><td>4-5</td><td>Can you type words?
Apply typing skills to being to type words more efficiently.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Do you remember where the keys are on the keyboard?</td><td colspan="3">To show endurance by continually trying to improve typing efficiency.</td></tr>
</table>

Class: Seed
Big Question: Do you remember?
Unit: Creating and Storing
Year A/Year B Autumn /Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Pupils should already have achieved a number of skills in their Chromebook Passports before starting this unit.</td><td rowspan="5">• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td>1</td><td>Do computers have a memory?
Learn that computers have memory and can store files. Learn how to save files with an appropriate name.</td><td rowspan="5">A variety of digital art

A variety of digital music

Digital photos</td></tr>
<tr><td rowspan="4">Key Vocabulary
Save
File
Memory
Digital art
Digital music
Photo
Video
Computer
Tablet
Mouse
Trackpad
Touchscreen
Camera
Image
Screen
Printer
Print</td><td>2-3</td><td>How can you make digital music?
Create music on Busy Things and practise saving it with an appropriate name.</td></tr>
<tr><td>4-5</td><td>How can you make digital art?
Create art on Busy Things and practise saving it with an appropriate name. Learn how to print.</td></tr>
<tr><td>6</td><td>What are digital photos and videos?
Distinguish between creating digital artwork and taking photos. Begin to learn how to take a photo on an iPad.</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Do you remember how to save your work?</td><td colspan="3">To make wise choices about what to name digital files so that it is clear what they are.</td></tr>
</table>

Class: Seed
Big Question: Where shall we go?
Unit: Digital Literacy
Year A/Year B
Autumn/Spring/Summer

Prior Learning Links	Key NC Objectives	Session overviews		Unit Outcomes
Pupils will be familiar with using the Chromebooks and iPads. **Key Vocabulary** Internet Information Search Search engine Digital technologies Voice-activated search Trusted adult Keywords Navigate Webpage Home Forward / back Tab Link Rules Healthy Safe Personal information Password Account Device Protect Private Belongs Title Save Filename Copyright	• 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.	1	**Managing Online Information** I can talk about how to use the internet as a way of finding information online. I can identify devices I could use to access information on the internet. I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching). I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke. I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened. I can use simple keywords in search engines. I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections). I can explain what voice activated searching is and how it might be used, and know it is not a real person (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 real or true.	Managing Online Information Quiz Health, Wellbeing and Lifestyle Quiz Privacy and Security Quiz Copyright and Ownership Quiz
		2	**Health, Wellbeing and Lifestyle** 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 of these rules. I can say how those rules / guides can help anyone accessing online technologies. I can explain rules to keep myself safe when using technology both in and beyond the home. I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment.	
		3	**Privacy and Security** I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). I can describe who would be trustworthy to share this information with; I can explain why they are trusted. I can explain that passwords are used to protect information, accounts and devices. I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others. I can explain how passwords can be used to protect information, accounts and devices. I can explain and give examples of what is meant by 'private' and 'keeping things private'.	

			I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords). I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions).	
		4	**Copyright and Ownership** I know that work I create belongs to me. I can name my work so that others know it belongs to me. I can explain why work I create using technology belongs to me. I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it''). I can save my work under a suitable title / name so that others know it belongs to me (e.g. filename, name on content). I understand that work created by others does not belong to me even if I save a copy. I can recognise that content on the internet may belong to other people. I can describe why other people's work belongs to them.	
Biq Question Link		Vision and Values Link		
Where shall we go online?		To develop wisdom when using the internet and be respectful to others.		

Class: Seed
Big Question: What is home?
Unit: Computer Science – Algorithms and Robots
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Pupils should already have achieved a number of skills in their Chromebook Passports before starting this unit.</td><td rowspan="6">• 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</td><td>1</td><td>Algorithms (BBC Bitesize What is an algorithm?)
Explore the meaning of key vocabulary, especially ‘algorithm’ and ‘coding’. Create/order algorithms for simple everyday activities e.g. making a sandwich. Highlight the importance of being precise and ordered.</td><td rowspan="6">Algorithms for simple everyday activities.

Written/drawn algorithms for how to colour a picture.

Verbal algorithms for how to build a model.

Written/drawn algorithms for mazes.

Debugged algorithms.

Robot programs, either using physical robots or an app on an iPad.</td></tr>
<tr><td rowspan="5">Key Vocabulary
Algorithm, instruction, command, robot, program, code, forwards, backwards, right turn, left turn, debug, input, output</td><td>2</td><td>Robot Drawings (BBC Bitesize How do you program a robot?)
Introduce the idea of programming a robot. Explain that you are the robot and get the children to give you instructions to program you to draw a given picture. Children then have a go at writing a program to make a “robot” (partner) colour a picture in a certain way.</td></tr>
<tr><td>3</td><td>Robot Builders
Recap how to program a robot and the importance of precise instructions. In pairs, create algorithms to program each other to make a Lego/multi-link model to match a picture.</td></tr>
<tr><td>4</td><td>Robot Directions (BBC Bitesize What is a computer program?)
Recap how to program a robot. Get children to use key commands (forwards, backwards, left turn, right turn) to program the “Robot Teacher” across the classroom. Use key terms or symbols to write programs for mazes.</td></tr>
<tr><td>5</td><td>Debugging (BBC Bitesize What are computer bugs?)
Introduce the idea of debugging and have a go at debugging some algorithms both verbally and on paper.</td></tr>
<tr><td>6</td><td>Real Robots (BBC Bitesize How do we use digital devices?)
Introduce the concept of inputs and outputs and how they relate to each other. If possible, apply knowledge learnt so far to program physical robots e.g. BeeBots. If not possible, use equivalent app on the iPad.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Can you program a robot to draw a home?</td><td colspan="3">To develop endurance by breaking tasks down into small, precise instructions for robots and debugging programs, without giving up.</td></tr>
</table>

Class: Seed
Big Question: What is home?
Unit: Computer Science – Early Coding
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td rowspan="2">Pupils should already have achieved a number of skills in their Chromebook Passports before starting this unit.
Pupils will have explored what an algorithm is and how to program robots in previous unit.</td><td rowspan="4">• 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</td><td>1</td><td>Helicopter Rescue
Explore the relationship between inputs and outputs. Consider the code of the game e.g. when you click the right arrow, the helicopter moves 1 to the right.</td><td rowspan="2">Helicopter Rescue (Busy Things)

Puzzling Paths (Busy Things)

Path Peril (Busy Things)</td></tr>
<tr><td rowspan="3">Key Vocabulary
Algorithm, instruction, command, program, code, forwards, backwards, right turn, left turn, debug, input, output, predict, logical reasoning</td><td>2</td><td>Puzzling Paths - Debugging
Recap the meaning of debugging. Introduce the Puzzling Paths game on Busy Things and consider how to debug the program when the paths overlap.</td></tr>
<tr><td>3-4</td><td>Path Peril
Help the chicken collect the shapes in the order displayed on the panel in the top left of the screen, and then leave the maze. Use the button panel at the bottom of the screen to program a path for the chicken to follow. If you are on a desktop computer, you can also use the arrow keys to plan the chicken's route and the spacebar to make him walk. The backspace key will undo the last path put down. Remember to watch out for traps in later levels!</td><td rowspan="2">Path Peril worksheets</td></tr>
<tr><td>5</td><td>Logical Reasoning (BBC Bitesize What is sensible thinking?)
Introduce the idea of using logical reasoning to predict the behaviour of simple programs. Use logical reasoning to do path peril on paper - follow the directional instructions with the chicken to find out which space he should end up in.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Can you help the chicken get home?</td><td colspan="3">To develop wisdom through logical reasoning.</td></tr>
</table>

Class: Seed
Big Question: How has life changed?
Unit: Typing in Context – Google Docs
Year A/Year B
Autumn/Spring/Summer

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<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Pupils should already have achieved a number of skills in their Chromebook Passports before starting this unit.</td><td rowspan="2">• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td>1</td><td>BBC Bitesize: Using a Computer to Write
Create a Google Doc to demonstrate the information on the BBC Bitesize page. Explore types of formatting. Have a go at the BBC Bitesize quiz.</td><td rowspan="2">A document to demonstrate types of formatting.

A typed message to a family member.

A typed set of lists, formatted in different ways.

A typed retelling of a known story.</td></tr>
<tr><td>Key Vocabulary
Typing
Word processing
Keyboard
QWERTY
Shift key
Spacebar
Software
Formatting
Edit
Bold
Italic
Underline
Colour
Size
Font
Print</td><td>2</td><td>Typing a message
Using Google Docs, type a message to a family member to tell them what you have been learning about in computing lessons. Explore how these messages could be given to them digitally or physically.</td></tr>
<tr><td colspan="2" rowspan="3"></td><td>3-4</td><td>Typing a list
Explore different ways to create lists in a Google Doc, including bullet points for an imaginary shopping list, numbers for a dream to-do list and a table for a funny checklist/register.</td><td rowspan="3"></td></tr>
<tr><td>5-6</td><td>Typing a story
Retell a known story in their own words. Navigate around the story to make edits and apply formatting skills learnt previously.</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How have computers changed the way we write?</td><td colspan="3">To demonstrate endurance by editing and improving their work on the computer.</td></tr>
</table>

Class: Seed
Big Question: How has life changed?
Unit: Data and Spreadsheets
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Pupils should already have achieved a number of skills in their Chromebook Passports before starting this unit.</td><td rowspan="2">• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td>1</td><td>Organising Information
Explore what we mean by organising information and sorting things into groups. Complete simple sorting activities on Busy Things.</td><td rowspan="2">A pictogram of favourite pets

A bar chart of favourite meals

A branching database about aliens

A map or floorplan with different coloured sections.</td></tr>
<tr><td>Key Vocabulary
Data
Collect
Sort
Present
Pictogram
Bar Chart
Branching database
Spreadsheet
Cell
Row
Column</td><td>2</td><td>Pictograms
Follow lesson plan on J2E. Learn how to create a pictogram of favourite pets.</td></tr>
<tr><td colspan="2"></td><td>3</td><td>Bar Charts
Follow lesson plan on J2E. Learn how to create a bar chart of their favourite meal.</td><td></td></tr>
<tr><td colspan="2"></td><td>4</td><td>Branching Databases
Follow lesson plan on J2E. Learn how to create a simple branching database about at least 4 aliens.</td><td></td></tr>
<tr><td colspan="2"></td><td>5</td><td>Introducing Spreadsheets
Learn about what spreadsheets are and what they are used for. Explore key terminology including cell, row and column. Try typing in different cells and navigating between them.</td><td></td></tr>
<tr><td colspan="2"></td><td>6</td><td>Maps and floorplans
Move and colour cells to create maps and plans for different places e.g. a zoo, a garden, a shop</td><td></td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How have computers changed our lives?</td><td colspan="3">To promote dignity and acceptance by encouraging children to accept their differences e.g. different favourite meals.</td></tr>
</table>

Class: Seed
Big Question: Who can help me?
Unit: Digital Literacy
Year A/Year B
Autumn/Spring/Summer

Prior Learning Links	Key NC Objectives	Session overviews		Unit Outcomes
Pupils will be familiar with using the Chromebooks and iPads. **Key Vocabulary** Online Offline Internet World Wide Web (WWW) Network Connect Trusted adult Feelings Uncomfortable Communicate Technology Permission Consent Accept Respect Kind / unkind Bullying Cyber / online bullying	• 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.	1	**Self-Image and Identity** I can recognise, online or offline, that anyone can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset. I can recognise that there may be people online who could make someone 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 and how they can help. I can explain how other people may look and act differently online and offline. I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.	Self-Image and Identity Quiz Online Relationships Quiz Online Reputation Quiz Online Bullying Quiz
		2	**Online Relationships** 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 give examples of when I should ask permission to do something online and explain why this is important. I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). I can explain why it is important to be considerate and kind to people online and to respect their choices. I can explain why things one person finds funny or sad online may not always be seen in the same way by others. I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country). I can explain who I should ask before sharing things about myself or others online. I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure. I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. I can identify who can help me if something happens online without my consent. I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online. I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.	
		3	**Online Reputation** I can identify ways that I can put information on the internet. I can describe what information I should not put online without asking a trusted adult first. I can recognise that information can stay online and could be copied. I can explain how information put online about someone can last for a long time. I can describe how anyone's online information could be seen by others. I know who to talk to if something has been put online without consent or if it is incorrect.	
		4	**Online Bullying**	

			I can describe ways that some people can be unkind online. I can offer examples of how this can make others feel. I can describe how to behave online in ways that do not upset others and can give examples. I can explain what bullying is, how people may bully others and how bullying can make someone feel. I can explain why anyone who experiences bullying is not to blame. I can talk about how anyone experiencing bullying can get help.	
Biq Question Link		Vision and Values Link		
Who can help me when something worries or upsets me online?		To develop wisdom when using the internet and be respectful to others.		

Class: Seed
Big Question: Are we there yet?
Unit: Computer Science – Turtle
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Pupils should already have achieved a number of skills in their Chromebook Passports before starting this unit.</td><td rowspan="7">• 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</td><td>1</td><td>Outer Space (BBC Bitesize What is an algorithm?)
Follow lesson plan on J2E. Create simple algorithms to make a rocket move.</td><td rowspan="7">A series of algorithms to make sprites move using Turtle on J2E.</td></tr>
<tr><td rowspan="6">Key Vocabulary
Sprite, algorithm, simple mode, advanced mode, code, template, debug, blocks, code area, motion blocks, block menu</td><td>2</td><td>Flowers
Create simple algorithms to make different butterflies land on each flower.</td></tr>
<tr><td>3</td><td>Parking
Create simple algorithms to park a car into each empty parking space.</td></tr>
<tr><td>4</td><td>Traditional Tales
Follow lesson plan on J2E. Create and debug algorithms in advanced mode to make the wolf visit each of the three little houses and to move Cinderella to different objects.</td></tr>
<tr><td>5</td><td>Town
Create and debug algorithms in advanced mode to move a sprite around the town.</td></tr>
<tr><td>6</td><td>Rockets
Follow lesson plan on J2E to introduce block code and compare to Turtle.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Are the sprites there yet? How do we move something from a to b on a computer?</td><td colspan="3">To demonstrate endurance when debugging a code.</td></tr>
</table>

Class: Seed
Big Question: Are we there yet?
Unit: Computer Science – Busy Code
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>Pupils should already have achieved a number of skills in their Chromebook Passports before starting this unit.</td><td rowspan="8">• 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</td><td>1</td><td>Code Disco Tutorial 1: The Basics (BBC Bitesize What is a computer program?)
To introduce the basics of coding in Code Disco. By the end of this tutorial children should be able to:
• Understand that programs consist of instructions that are executed in order, one by one
• Make simple programs</td><td rowspan="8">A series of programs on Busy Code to make Beard Man complete given tasks.</td></tr>
<tr><td rowspan="7">Key Vocabulary
Code, program, instructions, debug, the code area, the action area, the instructions area, command blocks, event blocks, play, run, stop, characters</td><td>2</td><td>Code Disco Challenge: Dance Steps
Use what you've learned in Tutorial 1 to try and complete the challenge, using no more than the number of blocks suggested.</td></tr>
<tr><td>3</td><td>Code Disco Project: Dancing 1
Create a synchronised dance routine for two characters.</td></tr>
<tr><td>4</td><td>Beard Man’s Adventure Tutorial 1
Tutorial 1 introduces the very basic elements of Beard Man's Adventures:
• Moving Beard Man around chambers
• Getting him to chamber exits
• Pulling levers to interact with objects in chambers
• Moving to treasure chests
• Opening treasure chests
• Escaping before the gate closes</td></tr>
<tr><td>5</td><td>Beard Man’s Adventure 1A
In this first adventure children must help Beard Man rescue the treasure from the tomb before it collapses!</td></tr>
<tr><td>6</td><td>Beard Man’s Adventure 1B
Help Beard Man rescue the treasure from the volcano before it erupts!</td></tr>
<tr><td>7</td><td>Beard Man’s Adventure 1C
Help Beard Man move through the cave and escape with the treasure.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Is Beard Man there yet?</td><td colspan="3">To demonstrate aspiration by helping Beard Man to take small steps to achieve his goals!</td></tr>
</table>

Lower Key Stage 2 (Years 3 and 4)

Class: Sapling
Big Question: What does it mean to be human?
Unit: Touch Typing
Year A/Year B Autumn /Spring /Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td rowspan="2">• 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</td><td>1</td><td>Home row keys
Learn the correct posture and starting position for typing. Use Dance Mat Typing Level 1 to locate the keys on the home row, using the correct fingers.</td><td rowspan="6">Dance Mat Typing</td></tr>
<tr><td>Key Vocabulary
Touch typing
Keyboard
Keys
QWERTY
Spacebar
Shift
Capitals (upper case)
Lower case
Home row
Top row
Bottom row
Posture</td><td>2</td><td>Top row keys
Recap the correct posture and starting position for typing. Use Dance Mat Typing Level 2 to locate the keys on the top row, using the correct fingers.</td></tr>
<tr><td></td><td></td><td>3</td><td>Bottom row keys
Recap the correct posture and starting position for typing. Use Dance Mat Typing Level 3 to locate the keys on the bottom row, using the correct fingers.</td></tr>
<tr><td></td><td></td><td>4</td><td>More keys
Recap the correct posture and starting position for typing. Use Dance Mat Typing Level 4 to locate more keys, using the correct fingers.</td></tr>
<tr><td></td><td></td><td>5</td><td>Punctuation
Practise typing punctuation and symbols, including using the shift key.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Should all humans learn how to type? Why might we type quicker than other animals?</td><td colspan="3">To demonstrate endurance by continually trying to improve accuracy and speed for touch typing.</td></tr>
</table>

Class: Sapling
Big Question: What does it mean to be human?
Unit: Creating and Storing
Year A/Year B Autumn /Spring /Summer

<table>
<tr><td colspan="3">Prior Learning Links</td><td colspan="3">Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td colspan="3">• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td colspan="3">• 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</td><td>1</td><td>How do digital devices store information?
Learn about different file types and how they are stored on a computer.</td><td>An edited digital painting.</td></tr>
<tr><td colspan="6" rowspan="2">Key Vocabulary</td><td>2</td><td>How do we create and change digital images?
Create a digital painting on Busy Things. Download it onto the Chromebook/iPad and edit it using the available software. Ensure they know how to print their work.</td><td>Edited photos.

A digital publication of their work.</td></tr>
<tr><td rowspan="3">3</td><td rowspan="3">How are digital photos and videos made?
Take photos on iPads and learn how to edit them.</td><td rowspan="7">An animation using animating software.

A stop-motion animation.</td></tr>
<tr><td>Digital devices
Computer
Memory
Binary code
File
Save
Folder
File type (JPEG, TXT, DOC, MP3, XLS, WAV, MOV, ZIP, PPT)
Application
RAM
Internal / external hard drives
Storage
The cloud</td><td>Image
Digitised
Graphics software
Digital painting
Digital photo
Video
Digital camera
Edit
Crop
Rotate
Flip
Effects
Filter
Brightness
Contrast
Retouching</td><td>Lens
Sensor
Memory card
Smartphones
Tablets
Drones
Print
Digital publishing
Animation
Animator
Animate
Stop-motion</td></tr>
<tr><td>4</td><td>What is digital publishing?
Find out about how to publish digital content. Create a shared publication (e.g. blog/website) with their images from previous lessons.</td></tr>
<tr><td>5</td><td>How do we make digital animations?
Learn how to animate on J2E.</td></tr>
<tr><td>6</td><td>Stop-Motion Animation
Design and create a stop-motion animation using the iPads.</td></tr>
<tr><td colspan="6"></td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="6">What's the difference between humans and computers?</td><td colspan="3">To show endurance when creating a stop-motion animation.</td></tr>
</table>

Class: Sapling
Big Question: How do we use...?
Unit: Digital Literacy
Year A/Year B
Autumn/Spring/Summer

Prior Learning Links	Key NC Objectives	Session overviews		Unit Outcomes
In KS1, pupils are taught to: • 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 Vocabulary** Search engines Accurate information Autocomplete Belief Opinion Fact Trusted adult Content Analyse Adverts Pop-ups In-app perchases Impersonate Benefits Risks Fake news Alter Pretend Edit Screen time Mood Positive	• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	1	**Managing Online Information** I can demonstrate how to use key phrases in search engines to gather accurate information online. I can explain what autocomplete is and how to choose the best suggestion. I can explain how the internet can be used to sell and buy things. I can explain the difference between a 'belief', an 'opinion' and a 'fact. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories etc. I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed). I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened. I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others. I can describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy (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 explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. I can explain that technology can be designed to act like or impersonate living things (e.g. bots) and describe what the benefits and the risks might be. I can explain what is meant by fake news e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't.	Managing Online Information Quiz Health, Wellbeing and Lifestyle Quiz Privacy and Security Quiz Copyright and Ownership Quiz
		2	**Health, Wellbeing and Lifestyle** I can explain why spending too much time using technology can sometimes have a negative impact on anyone, e.g. mood, sleep, body, relationships; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged (e.g. doing homework, games, films, videos). I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites). I can explain how using technology can be a distraction from other things, in both a positive and negative way. I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can suggest strategies to help with limiting this time.	
		3	**Privacy and Security** I can describe simple strategies for creating and keeping passwords private.	

Negative Age restrictions Pressure Distraction Password Private Connected devices Cookies Personal information Monitored Adult supervision Digital age of consent Copying Ownership Copyright			I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult. I can describe how connected devices can collect and share anyone's information with others. I can describe strategies for keeping personal information private, depending on context. I can explain that internet use is never fully private and is monitored, e.g. adult supervision. I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure. I know what the digital age of consent is and the impact this has on online services asking for consent.	
		4	**Copyright and Ownership** I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause. 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 give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.	
Biq Question Link		Vision and Values Link		
How do we use...technology safely, respectfully and responsibly? How do we use...search technologies effectively?		To develop wisdom when using the internet and be respectful to others.		

Class: Sapling
Big Question: What's so important about water?
Unit: Computer Science – Networks and Hardware
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td colspan="2">In KS1, pupils will have learnt about uses of technology, what the internet is, the difference between online and offline and that computers rely on algorithms.</td><td>• 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</td><td>1</td><td>Inputs and Outputs (BBC Bitesize What are inputs and outputs?)
Find out about input and output devices. Sort devices into inputs, outputs or both.</td><td rowspan="6">Sorted pictures of output and input devices.

A poster/leaflet about robots.

An illustrated glossary of hardware.

A labelled diagram of a computer network.

A labelled design for a webpage.</td></tr>
<tr><td rowspan="5">Key Vocabulary
Input
Output
Device
Processing
Central Processing Unit (CPU)
Digitisation
Digital data
Keyboard
Touchscreen
Microphone
Speaker
Webcam
Motion sensor
Printer
Graphics
Monitor
Interactive whiteboard
Port (USB, HDMI)
Robot
Computer program
Automatic</td><td rowspan="5">Remote control
Sensors
Buttons
Motors
Sequencing
Repetition
Hardware
Software
Components
Peripherals
Motherboard
Random Access Memory (RAM)
Hard drive
Graphics card
Network card
Network
Switches
Wi-fi
Ethernet
Local Area Network (LAN)
Personal Area Network (PAN)</td><td rowspan="5">Wider Area Network (WAN)
Internet
IP Address
Servers
Clients
Cables
Routers
Data packets
Hyperlink
World Wide Web (WWW)
Web browser
Search Engine
Uniform Resource Locator (URL)
Website / webpage
Index
Keywords
Ranks
Web crawler</td><td>2</td><td>Robots (BBC Bitesize Real life robots)
Find out about robots, including what they are, how they work and some pros and cons of using them. Make a poster/leaflet about robots.</td></tr>
<tr><td>3</td><td>Hardware
Find out about the parts of a computer and match the names and pictures to the definitions to create an illustrated glossary.</td></tr>
<tr><td>4</td><td>Networks and the Internet (BBC Bitesize What is a computer network? How does the internet work?)
Find out about computer networks and how the internet works. Create a labelled diagram of the components in a computer network.</td></tr>
<tr><td>5</td><td>The World Wide Web and Search Engines (BBC Bitesize What is the world wide web? How do search engines work?)
Find out about the WWW and how search engines work, including URLs. Design and label their own webpage.</td></tr>
<tr><td colspan="3">Biq Question Link</td><td colspan="2">Vision and Values Link</td></tr>
<tr><td colspan="3">Water and computer hardware don't mix!</td><td colspan="2">To consider the positive and negative impacts technology can have on a community.</td></tr>
</table>

Class: Sapling
Big Question: What's so important about water?
Unit: Computer Science – Logo
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><th>Prior Learning Links</th><th>Key NC Objectives</th><th colspan="2">Session overviews</th><th>Unit Outcomes</th></tr>
<tr>
<td>Pupils will have used turtle in KS1 and should be familiar with the basic directional commands.

Key Vocabulary
Algorithm
Sequence
Instruction
Code
Program
Forward (FD)
Backward (BK)
Right Turn (RT)
Left Turn (LT)
Pen Up (PU)
Pen Down (PD)
Angle (degrees)
Decomposition
Programming language
Logo
Turtle
Play/run
Debug
Repeat
Repetition
Predict</td>
<td>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
• use sequence, selection, and repetition in programs; work with variables and various forms of input and output
• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</td>
<td>1</td><td>Introducing Logo (BBC Bitesize All about algorithms)
Follow lesson plan on J2E. Develop familiarity with the different commands by predicting and drawing shapes.</td>
<td>A variety of shapes using Logo.</td>
</tr>
<tr>
<td></td><td></td><td>2</td><td>Making Letters
Use learning from previous lesson to draw letters. Start with straight lines with 90 degree turns (F, E, L, T, H) then progress to other letters by exploring angles (C, S, M, W, O).</td>
<td>A variety of letters using Logo.</td>
</tr>
<tr>
<td></td><td></td><td>3</td><td>Mazes (BBC Bitesize What is logical reasoning?)
Create algorithms to solve mazes.</td>
<td>A variety of mazes using Logo.</td>
</tr>
<tr>
<td></td><td></td><td>4</td><td>Repetition (BBC Bitesize How are computer programs constructed?)
Use repetition to simplify code. Predict more letters and shapes using repetition then create repeating patterns.</td>
<td>A variety of repeating patterns using Logo.</td>
</tr>
<tr>
<td></td><td></td><td>5</td><td>Names (BBC Bitesize What is decomposition?)
Apply learning to create custom name labels. Learn about decomposition by coding one letter at a time.</td>
<td>A custom name label using Logo.</td>
</tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">N/A</td><td colspan="3">To develop aspiration and endurance through learning about decomposition – breaking challenges down into small steps.</td></tr>
</table>

Class: Sapling
Big Question: Who's in control?
Unit: Typing in Context – Google Slides
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td rowspan="2">• 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</td><td>1</td><td>Word Processing
Use Google Docs to record notes about a topic. Discuss what this form of word processing might be useful for and why. Introduce the idea of creating a presentation. Is Google Docs the best software for a presentation?</td><td rowspan="6">A Google Doc with notes about a given topic.

A presentation on Google Slides including formatted and animated text, pictures and shapes.</td></tr>
<tr><td rowspan="5">Key Vocabulary
Typing
Slides
Layout
Format
Textbox
Title
Presentation / slideshow
Word art
Media
Layers
Animations
Transitions</td><td>2</td><td>Introducing Google Slides
Explore Google Slides. Learn how to insert and format textboxes. Create a title slide for a presentation using word art.</td></tr>
<tr><td>3</td><td>Inserting Media
Add slides containing pictures and words. Learn how to edit pictures. Add shapes to at least one slide and learn how to order the layers.</td></tr>
<tr><td>4</td><td>Animations and Transitions
Learn how to add animations and transitions to your presentation.</td></tr>
<tr><td>5</td><td>Presentations
Use slideshow mode to share your presentations with the class.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Who's in control of the keyboard?</td><td colspan="3">To learn how to give back to the community by sharing their knowledge with others.</td></tr>
</table>

Class: Sapling
Big Question: Who's in control?
Unit: Data and Spreadsheets
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td rowspan="2">• 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</td><td>1</td><td>Branching Databases
Follow lesson plan on J2E. Learn how to create a branching database to sort at least 6 animals.</td><td rowspan="5">A branching database to sort at least 6 animals.

A variety of graphs and charts.

A spreadsheet to budget for a birthday party.</td></tr>
<tr><td rowspan="4">Key Vocabulary
Data
Branching database
Collect
Present
Graph
Chart
Cell address
Row
Column
Table
Total / Sum
Formula
Budget</td><td>2</td><td>Data
Explore different ways to present data by creating a variety of graphs and charts.</td></tr>
<tr><td>3</td><td>Treasure Maps
Learn how describe cells by their addresses by navigating a treasure map on a spreadsheet.</td></tr>
<tr><td>4</td><td>Tables and Totals
Learn how to create tables and use formula to calculate totals.</td></tr>
<tr><td>5-6</td><td>Party Planners
Create a spreadsheet to budget for a birthday party.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Who's in control of planning a party?</td><td colspan="3">To develop wisdom by learning how to stick to a budget.</td></tr>
</table>

Class: Sapling
Big Question: What lights up the world?
Unit: Digital Literacy
Year A/Year B
Autumn/Spring/Summer

Prior Learning Links	Key NC Objectives	Session overviews		Unit Outcomes
In KS1, pupils are taught to: • 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.	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	1	**Self-Image and Identity** I can explain what is meant by the term 'identity'. I can explain how people can represent themselves in different ways online. I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why. I can explain how my online identity can be different to my offline identity. I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them. I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.	Self-Image and Identity Quiz Online Relationships Quiz Online Reputation Quiz Online Bullying Quiz
Key Vocabulary Identity Online Offline Avatar Social media Gaming Livestreaming Positive Negative Pretend Trusted adult Comfortable Uncomfortable	Permission Sharing Private Personal Respect Healthy Unhealthy Content Search Copy Cyber/online bullying Reputation	2	**Online Relationships** I can describe ways people who have similar likes and interests can get together online. I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with. I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried. I can explain how someone's feelings can be hurt by what is said or written online. I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos. I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms). I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs.	
		3	**Online Reputation** I can explain how to search for information about others online. I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal. I can explain who someone can ask if they are unsure about putting something online. I can describe how to find out information about others by searching online.	

			I can explain ways that some of the information about anyone online could have been created, copied or shared by others.	
		4	**Online Bullying** I can describe appropriate ways to behave towards other people online and why this is important. I can give examples of how bullying behaviour could appear online and how someone can get support. I can recognise when someone is upset, hurt or angry online. I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation).	
Biq Question Link		Vision and Values Link		
How can we use the internet safely to light up the world?		To develop wisdom when using the internet and be respectful to others.		

Class: Sapling
Big Question: What is stronger – people or their environment?
Unit: Computer Science – Busy Code
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><th>Prior Learning Links</th><th>Key NC Objectives</th><th colspan="2">Session overviews</th><th>Unit Outcomes</th></tr>
<tr><td>Pupils will have already completed the first 2 sessions on Busy Code in KS1.

Key Vocabulary
Code
Algorithm
Sequence
Instruction
Program
Decomposition
Programming language
Play/run
Stop
Blocks
Debug
Repeat command
Repetition
Loops
Conditionals
Events
Input / output
Variables
Values
Store / memory</td><td>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
• use sequence, selection, and repetition in programs; work with variables and various forms of input and output
• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</td><td>1</td><td>Code Disco Section 1: The Basics (BBC Bitesize All about algorithms)
Recap learning from KS1 to make simple programs with increased independence.</td><td rowspan="8">A series of programs on Busy Code to make Beard Man complete given tasks.</td></tr>
<tr><td>2</td><td>Section 1: Beard Man’s Archipelago Adventures: The basics
Recap learning from KS1 to make simple programs with increased independence.</td></tr>
<tr><td>3</td><td>Code Disco Section 2: Loops (BBC Bitesize How are computer programs constructed?)
Learn how to create programs with simple loops and understand that loops can be used to repeat sections of a program.</td></tr>
<tr><td>4</td><td>Section 2: Beard Man's Jungle Jaunts: Loops
Apply understanding from previous session to gain confidence and independence in creating programs with loops.</td></tr>
<tr><td>5</td><td>Code Disco Section 3: Conditionals (BBC Bitesize What is debugging?)
Learn how a computer program can make decisions with the use of conditional blocks.</td></tr>
<tr><td>6</td><td>Section 3: Beard Man's Desert Dramas: Conditionals
Apply understanding from previous session to gain confidence and independence in creating programs with conditional blocks.</td></tr>
<tr><td>7</td><td>Code Disco Section 4: Events
Introduce handling of simple mouse and keyboard input. Learn that programs can respond to input from various events, including from mouse buttons and keyboard keys and use this to code a simple game.</td></tr>
<tr><td>8</td><td>Code Disco Section 5: Variables (BBC Bitesize What is a variable and how do computers use them?)
Learn that variables can be used to store and manipulate values. Write simple programs that use variables to count things and that use values stored in variables to alter their behaviour.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">What is stronger – Beard Man or his environment?</td><td colspan="3">To develop aspiration and endurance by creating and debugging increasingly challenging programs without giving up.</td></tr>
</table>

Class: Sapling
Big Question: What is stronger – people or their environment?
Unit: Computer Science – Visual Coding
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td rowspan="2">Pupils will be familiar with block coding on Busy Code from previous unit. They will have been taught about loops, conditions, events and variables.

Key Vocabulary
Code
Program
Animation
Block
Sprite
Costume
Condition
Coordinates</td><td rowspan="2">• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
• use sequence, selection, and repetition in programs; work with variables and various forms of input and output
• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</td><td>1</td><td>Pacman
Follow lesson plan on J2E. Create a simple animation using block coding.</td><td rowspan="2">A simple animation.

A simple program with conditional blocks.

A program to move sprites around to different coordinates.</td></tr>
<tr><td>2</td><td>Catch a Spider
Follow lesson plan on J2E. Use ‘if’ blocks to create conditions in a simple program.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">N/A</td><td colspan="3">To develop endurance by debugging and improving our computer programs.</td></tr>
</table>

Upper Key Stage 2 (Years 5 and 6)

Class: Blossom
Big Question: How do you live?
Unit: Touch Typing
Year A/Year B
Autumn /Spring /Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td rowspan="6">• 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</td><td>1</td><td>Memorise the keyboard
A series of activities to memorise where the keys are on the keyboard.</td><td rowspan="6">Memorise the keyboard worksheets and activities

Dance Mat Typing

Typing games

1-minute typing speed test</td></tr>
<tr><td rowspan="5">Key Vocabulary
Touch typing
Keyboard
Keys
QWERTY
Spacebar
Shift
Capitals (upper case)
Lower case
Home row
Top row
Bottom row
Posture
WPM (words per minute)</td><td>2</td><td>Dance Mat Typing
Recap the correct posture and starting position for typing. Use Dance Mat Typing to recap skills learnt in LKS2 and recap which fingers should be used for each key.</td></tr>
<tr><td>3-4</td><td>Touch Typing
Work in pairs, taking it in turns to play typing games. While one is playing, the other covers their hands so they are not able to see the keys.</td></tr>
<tr><td>5</td><td>Speed
Take a typing speed test and try to beat your time. Aim for 20 WMP.</td></tr>
<tr><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How do you live in an increasingly digital world?</td><td colspan="3">To demonstrate aspiration and endurance when trying to improve typing efficiency.</td></tr>
</table>

Class: Blossom
Big Question: How do you live?
Unit: Creating and Storing
Year A/Year B
Autumn /Spring /Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td colspan="3">• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td>• 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</td><td rowspan="9">In groups/pairs, create a film using images, audio and text.

Individually, design and make a computer game.</td></tr>
<tr><td colspan="3" rowspan="2">Key Vocabulary
Software applications
Drivers
Files
Folders
Memory
Binary
Switches
Base 2
Bits
Byte
Kilobytes (KB)
Megabytes (MB)
Gigabytes (GB)
Terabytes (TB)
Volatile
Non-volatile
RAM
Hard drives
The cloud
Export / import
Compress
Memory card

Digital images
Digitised
Pixels
Formats (JPEG, TIFF, PNG, GIF, BMP, HEIC)
Bitmap
Raster graphics
Vector graphics
Creative
Digital video files
Production team
Camera operator
Sound operator
Director
Editor / edit
Audio
Microphone
Record
Soundtrack
Titles
Credits
Transition

Storyboard
Blooper reel
Timeline
Clips
Footage
Cut
Special effects
Game designers
Digital artists
Graphic designers
Gameplay
Game mechanics
Code
Program
Location / setting
Background
Characters
Sprites
Theme
Aim / goal
Controls
Playability
Evaluation</td><td>1</td><td>How is all our digital data stored?
Explore how digital data is stored, including how binary works.</td></tr>
<tr><td>2</td><td>How do digital images work?
Find out about pixels and how images are displayed and stored, including bitmap images and vector images. Do mystery pixel art on Busy Things. Create bitmap challenges for each other.</td></tr>
<tr><td>3</td><td>Getting creative with computers
Consider how computers can be used creatively in many different ways. Introduce the idea of making a film and begin to consider the different types of media within it.</td></tr>
<tr><td>4</td><td>Creating digital video and audio
Find out about file sizes. Work as a team to plan, shoot and edit the content for the film.</td></tr>
<tr><td>5</td><td>DT/Computing: Design a Computer Game
Introduce the task to design and make a computer game for children in Sapling class. Evaluate existing games and begin to design their own game, considering theme, characters, aim, instructions, controls etc. They can choose between a catching game, a jumping game, a maze game or a pong game.</td></tr>
<tr><td>6-7</td><td>DT/Computing: Make a Computer Game
Create the games they planned in the previous session.</td></tr>
<tr><td>8</td><td>DT/Computing: Evaluate a Computer Game
Invite Sapling class to play their games and give feedback. Use this to evaluate the games.</td></tr>
<tr><td colspan="3">Biq Question Link</td><td colspan="2">Vision and Values Link</td></tr>
<tr><td colspan="3">How do you live in an increasingly digital world?</td><td colspan="2">To give back to the community by creating games for younger pupils.</td></tr>
</table>

Class: Blossom
Big Question: What do you believe?
Unit: Digital Literacy
Year A/Year B
Autumn/Spring/Summer

Prior Learning Links	Key NC Objectives	Session overviews		Unit Outcomes
In KS1, pupils are taught to: • 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 Vocabulary** Search technologies Benefits Limitations Voice-activation Search engine Sceptical Trustworthy Evaluate Adverts Search results Information Reviews Fact Opinion Belief Validity Reliability Evidence Agenda Notifications Pop-ups Targeted ads Online content	• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	1	**Managing Online Information** I can explain the benefits and limitations of using different types of search technologies e.g. voice-activation search engine. I can explain how some technology can limit the information I aim presented with e.g. voice-activated searching giving one result. 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 evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results. I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence. I can identify ways the internet can draw us to information for different agendas, e.g. website notifications, pop-ups, targeted ads. I can describe ways of identifying when online content has been commercially sponsored or boosted, (e.g. by commercial companies or by vloggers, content creators, influencers). I can explain what is meant by the term 'stereotype', how 'stereotypes' are amplified and reinforced online, and why accepting 'stereotypes' may influence how people think about others. I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful. I can explain what is meant by a 'hoax'. I can explain why someone would need to think carefully before they share. I can explain how search engines work and how results are selected and ranked. I can explain how to use search technologies effectively. 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'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online (e.g. advertising and 'ad targeting' and targeting for fake news). I understand the concept of persuasive design and how it can be used to influences peoples' choices. I can demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important. I can explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this. I can describe the difference between online misinformation and dis-information. 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 or disinformation).	Managing Online Information Quiz Health, Wellbeing and Lifestyle Quiz Privacy and Security Quiz Copyright and Ownership Quiz

Commercially sponsored Boosted Companies Vloggers Content creators Influencers Stereotype Fake news Hoax Share Ranked Legal/illegal Influence Manipulation Persuasion Persuasive design Misinformation Dis-information Inaccurate/accurate Untrue/true Flag Report Wellbeing Health Promote Risks Trusted adults Professionals In-app purchases Loot boxes Permission PEGI BBFC Parental warnings Peer pressure User Strong password Private Geolocation Software updates Privacy settings Scams			I can identify, flag and report inappropriate content.	
		2	**Health, Wellbeing and Lifestyle** I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively. I can describe some strategies, tips or advice to promote health and wellbeing with regards to technology. I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals. I can explain how and why some apps and games may request or take payment for additional content (e.g. in-app purchases, lootboxes) and explain the importance of seeking permission from a trusted adult before purchasing. I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this. I can recognise features of persuasive design and how they are used to keep users engaged (current and future use). I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).	
		3	**Privacy and Security** I can explain what a strong password is and demonstrate how to create one. I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. I can explain what app permissions are and can give some examples. I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser). I can explain what to do if a password is shared, lost or stolen. I can describe how and why people should keep their software and apps up to date, e.g. auto updates. 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). I know that online services have terms and conditions that govern their use.	
		4	**Copyright and Ownership** I can assess and justify when it is acceptable to use the work of others. I can give examples of content that is permitted to be reused and know how this content can be found online. 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.	

Phishing Terms and conditions Assess Justify Copyright Ownership References				
Biq Question Link		Vision and Values Link		
What do you believe online?		To develop wisdom when using the internet and be respectful to others.		

Class: Blossom
Big Question: ¿Qué hizo que los mayas fueran increíbles?
Unit: Computer Science – Networks and Hardware
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>In LKS2, pupils will have been taught about inputs and outputs, robots, parts of a computer, networks, the internet, the WWW and search technologies.</td><td>• 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</td><td>1</td><td>Inputs and Outputs (BBC Bitesize Inputs and outputs)
Find out more about inputs and outputs, including the difference between digitised and analogue data. Consider how assistive technology can help people, such as Professor Stephen Hawking. Design a robot/computer to help someone do a specific task and label the inputs and outputs.</td><td rowspan="4">A robot/computer design to help someone do a specific task.

A class roleplay of a computer network.

A labelled diagram to show how the internet works.

A leaflet about the World Wide Web (www).</td></tr>
<tr><td rowspan="3">Key Vocabulary
Input
Output
Computer systems
Receiving
Storing
Processing
Sending
Central Processing Unit (CPU)
Memory
Program
Software
Hardware
Digitised
Analogue
Binary
Assistive technology
Professor Stephen Hawking
Network
Server
Client
Files

Users
Connected
Usernames
Passwords
Switches
Data packets
Device
MAC address
Bandwidth
Local Area Network (LAN)
Wide Area Network (WAN)
Internet
Cables
Uniform Resource Locator (URL)
Hyperlink
Domain Name System (DNS)
Internet Protocol (IP)
Routers
Web server

Web browser
Webpage
World Wide Web (www)
Sir Tim Berners-Lee
Protocols
HTTP (hypertext transfer protocol)
HTML (hypertext markup language)
Search engine
Advert
The internet of things
Automated
Index
Web crawlers
Algorithm
Rank</td><td>2</td><td>Networks (BBC Bitesize Networks)
Find out more about how networks work. Roleplay how a network works, where pupils take on the roles of the different network elements. Packets of information (paper messages) can be passed around the network of children (connected by string), torn up and reassembled, and different network arrangements can be tested for speed and efficiency.</td></tr>
<tr><td>3</td><td>Internet Hardware and Protocols (BBC Bitesize The internet)
Find out more about how the internet works, including IP addresses. Repeat the roleplay from previous lesson to demonstrate how the internet works. Then, record this is a labelled diagram.</td></tr>
<tr><td>4</td><td>The World Wide Web and Search Technologies (BBC Bitesize What's next for the world wide web? / Search technologies)
Consolidate the different between the internet and the World Wide Web (www). Use the analogy of a library to understand search engines. Consider the history and future of the www.</td></tr>
<tr><td colspan="3">Biq Question Link</td><td colspan="2">Vision and Values Link</td></tr>
<tr><td colspan="3">Would the internet have improved the Ancient Mayan civilisation?</td><td colspan="2">To consider the positive and negative impacts technology can have on a community.</td></tr>
</table>

Class: Blossom
Big Question: ¿Qué hizo que los mayas fueran increíbles?
Unit: Computer Science – Microbits
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><th>Prior Learning Links</th><th>Key NC Objectives</th><th colspan="2">Session overviews</th><th>Unit Outcomes</th></tr>
<tr><td>Pupils are already familiar with block coding from their work in LKS2.

Key Vocabulary
Micro:bit
Hardware (see poster)
Animation
Sequence
Loops
Inputs
Outputs
Icons
Variables
Conditionals
Control system
Logic
Simulation
Code
Program
Algorithm</td><td>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
• use sequence, selection, and repetition in programs; work with variables and various forms of input and output
• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</td><td>1</td><td>Introducing the Micro:bit
Explore the ‘meet the micro:bit program’ and label a picture of the hardware.
https://www.bbc.co.uk/teach/microbit/articles/z4d4qyc
https://www.bbc.co.uk/teach/microbit/articles/zrd37v4#zmh2rmn</td><td rowspan="8">A variety of programs for the Micro:bit.

A poster to label the micro:bit’s hardware.</td></tr>
<tr><td>2</td><td>Name Badge
Begin to code the micro:bit to create a name badge.</td></tr>
<tr><td>3</td><td>Beating Heart / Emotion Badge
Create a simple animation to learn about sequence and simple loops. Start learning about inputs and outputs using buttons and icons on the display.</td></tr>
<tr><td>4</td><td>Get active
Introduce variables to track your step count and begin to use the accelerometer input. If time, create a compass.</td></tr>
<tr><td>5</td><td>Nightlight
Make an automatic nightlight and discover how logic, conditionals and inputs and outputs combine to make a simple control system.</td></tr>
<tr><td>6</td><td>Rock, Paper, Scissors!
Combine skills from the previous lessons to turn your micro:bit into an electronic simulation of a popular game of chance.</td></tr>
<tr><td>7</td><td>Sounds
Use sounds creatively as inputs and outputs.</td></tr>
<tr><td>8</td><td>Design your own program
Use all of the skills you have learnt to design your own program for the micro:bit.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">What might the Ancient Mayan civilisation have done with a micro:bit if they had one?</td><td colspan="3">To set high aspirations for code.</td></tr>
</table>

Class: Blossom
Big Question: Evacuee or Refugee?
Unit: Typing in Context – Google Docs
Year A/Year B
Autumn /Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td rowspan="2">• 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</td><td>1-2</td><td>Introducing Google Docs
Explain that they are going to be creating a guide for using Google Docs for younger children, including screenshots, examples and written explanations. Explore what Google Docs is and what it is used for. Learn how to create, name and navigate a blank doc, including identifying the meaning of the icons on the screen. Recap how to select text and apply basic formatting options e.g. font, font size, bold, italic, underlined, font colour, highlighter, alignment, line spacing. Add what you have learnt to your guide.</td><td rowspan="4">A guide to Google Docs explaining...
• What Google Docs is and what it is used for.
• How to create and name a new document.
• How to navigate around a Google Doc and move the cursor around the page.
• The meaning of different icons.
• How to select and format text.
• How to insert and edit images.
• How to insert and layer textboxes and shapes.
• How to insert hyperlinks.
• How to use and format organisational features.</td></tr>
<tr><td>Key Vocabulary
Google Doc
Untitled
Word processing
Navigate
Cursor
Scroll
Blank doc
Formatting
Select
Font
Font size
Font colour
Bold
Italic
Underline
Highlighter
Alignment
Line spacing
Screenshot
Insert

Image
Resize
Rotate
Crop
Wrap
Recolour
Border
Drawing
Textbox
Shape
Layers
Hyperlinks
Layout
Organisation
Bullet points
Numbering
Headings / subheadings
Styles
Headers / footers
Page / section breaks
Tables</td><td>3-4</td><td>Media: Images, Shapes and Hyperlinks
Learn how to take screenshots. Explore how to insert and edit images, including screenshots, in Google Docs, including resizing, rotating, cropping, wrapping, recolouring and adding a border. Introduce drawings, including textboxes and shapes, and how to layer them. Learn how to insert hyperlinks. Add what you have learn to your guide.</td></tr>
<tr><td>5-6</td><td>Organisation and Layout
Learn how to organise your document, including with bullet points, numbering, styles for headings/subheadings, headers/footers, page/section breaks and tables. Add what you have learnt to your guide.</td></tr>
<tr><td>7</td><td>Evaluation
Complete self and peer evaluations of guides.</td></tr>
<tr><td colspan="2">Big Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">How has typing improved global communication?</td><td colspan="3">To demonstrate wisdom by producing a guide that others can learn from.</td></tr>
</table>

Class: Blossom
Big Question: Evacuee or Refugee?
Unit: Data and Spreadsheets
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><td>Prior Learning Links</td><td>Key NC Objectives</td><td colspan="2">Session overviews</td><td>Unit Outcomes</td></tr>
<tr><td>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</td><td rowspan="2">• 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</td><td>1</td><td>Introducing Databases
Explore what databases are and how they are used, including key terminology. Follow the lesson plan on J2E to search and add to a database about countries.</td><td rowspan="7">A database about minibeasts.

A spreadsheet to convert measurements.

A spreadsheet to calculate perimeter and area.

A spreadsheet to calculate sale prices.

A spreadsheet with multiple sheets to plan an event.</td></tr>
<tr><td rowspan="6">Key Vocabulary
Database
Field
Record
Boolean
Datatype
Populate
Formula
Convert
Format cell
Percentage
Decimal places
Currency
Conditional formatting
Sum / total</td><td>2</td><td>Creating Databases
Follow the lesson plan on J2E. Create a database about minibeasts, using given information.</td></tr>
<tr><td>3</td><td>Measurements
Recap key information about spreadsheets. Create formulas to convert measurements and use them to convert given measurements.</td></tr>
<tr><td>4</td><td>Fields and Fences
Use a spreadsheet to work out the most cost-effective way to layout a farm. Create formulas to calculate area and perimeter.</td></tr>
<tr><td>5</td><td>Sale!
Learn how to format cells as currency, decimals or percentages. Create formulas to calculate sale prices.</td></tr>
<tr><td>6</td><td>Event Planners
Create a spreadsheet with multiple sheets to plan an event.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">Why might digital databases and spreadsheets have been useful when children were evacuated during WWII?</td><td colspan="3">To develop life skills that will enable some children to achieve their aspirations for the future.</td></tr>
</table>

Class: Blossom
Big Question: How far can you go?
Unit: Digital Literacy
Year A/Year B
Autumn/Spring/Summer

Prior Learning Links	Key NC Objectives	Session overviews		Unit Outcomes
In KS1, pupils are taught to: • 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.	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	1	**Self-Image and Identity** I can explain how identity online can be copied, modified or altered. I can demonstrate how to make responsible choices about having an online identity, depending on context. I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online. I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline. I can explain the importance of asking until I get the help needed.	Self-Image and Identity Quiz Online Relationships Quiz Online Reputation Quiz Online Bullying Quiz
Key Vocabulary Online/Offline Identity Copy Modify Alter Stereotypes Report Block Trusted adult Communication Emojis Memes GIFs Harm Online communities Collaborate Social media groups Positive / negative impact Boundaries Private		2	**Online Relationships** I can give examples of technology specific forms of communication (e.g. emojis, memes and GIFs). 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 describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups). I can explain how someone can get help if they are having problems and identify when to tell a trusted adult. I can demonstrate how to support others (including those who are having difficulties) online. I can explain how sharing something online may have an impact either positively or negatively. I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not. I can describe how things shared privately online can have unintended consequences for others. e.g. screen-grabs. I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this.	
		3	**Online Reputation** I can search for information about an individual online and summarise the information found. I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect. I can explain the ways in which anyone can develop a positive online reputation. I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity	
		4	**Online Bullying** I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences.	

Consequences Screen-grabs			I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying. I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. I can identify a range of ways to report concerns and access support both in school and at home about online bullying. I can explain how to block abusive users. I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline or The Mix). 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 explain how someone would report online bullying in different contexts.	
Biq Question Link		Vision and Values Link		
How far can you go online?		To develop wisdom when using the internet and be respectful to others.		

Class: Blossom
Big Question: What would you vote for?
Unit: Computer Science – Visual Coding
Year A/Year B
Autumn/Spring/Summer

<table>
<tr><th>Prior Learning Links</th><th>Key NC Objectives</th><th colspan="2">Session overviews</th><th>Unit Outcomes</th></tr>
<tr><td>In LKS2, pupils will have been taught about loops, conditions, events and variables on Busy Code.

Key Vocabulary
Code
Algorithm
Angle
Sequence
Program
Animation
Block
Sprite
Costume
Debugging
Loops
Forever loops
Condition
Coordinates
x-position
y-position
Event
Input
Random
Integer
Variable
Broadcast
Simulation</td><td>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
• use sequence, selection, and repetition in programs; work with variables and various forms of input and output
• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</td><td>1</td><td>Algorithms (BBC Bitesize Algorithms)
Create algorithms on paper.</td><td rowspan="12">A series of programming activities exploring the use of sequences, loops, debugging, forever loops, conditionals and events.

A program using coordinates and conditions to park a car.

An interactive story for younger children.

A planet game with multiple variables.

A simulation of a traffic light.</td></tr>
<tr><td>2</td><td>Sequencing (BBC Bitesize Logical Reasoning)
Recap how pupils drew shapes on Logo in LKS2. Explain that today they are going to draw shapes using block code. Work through a series of increasingly difficult shapes.</td></tr>
<tr><td>3</td><td>Loops (BBC Bitesize Repetition and Selection)
Recap what loops are and why they are useful in coding. Use loops to improve efficiency in drawing shapes. Mark Zuckerberg Explains Loops: https://www.youtube.com/watch?v=BlXtMr7ge9Q</td></tr>
<tr><td>4</td><td>Debugging (BBC Bitesize Debugging)
Debug a series of programs for shapes and mazes.</td></tr>
<tr><td>5</td><td>Forever Loops
Learn how to create forever loops to keep sprites moving or changing their costume.</td></tr>
<tr><td>6</td><td>Conditionals (BBC Bitesize Repetition and Selection)
Explore the idea of conditionals. Use if statements to code animals. Then, use if/else statements to create mini games. Hour of Code - Bill Gates explains If statements: https://www.youtube.com/watch?v=m2Ux2PnJe6E</td></tr>
<tr><td>7</td><td>Events
Learn about events and broadcasting. Use events to create complete/create a series of programs, including a circus act, a story and a knock-knock joke.</td></tr>
<tr><td>8</td><td>Perfect Parking
Follow lesson plan on J2E. All children: will create a set of blocks to park a car. Most children: make a specified parking game. Some children: will create their own game using blank car park template</td></tr>
<tr><td>9</td><td>Create a Story (BBC Bitesize Decomposition)
Follow lesson plan on J2E. All children: will make a simple story with one background and two characters using keyboard input. Most children: will make a story with more than two characters. Some children: will make a story with multiple backgrounds and characters.</td></tr>
<tr><td>10</td><td>Planet Game (BBC Bitesize Variables)
Follow lesson plan on J2E. All children: will change how a variable works in the planet game. Most children: will use a new variable in the planet game. Some children: will create their own game using multiple variables.</td></tr>
<tr><td>11</td><td>Traffic Light Simulation
Learn about how coding is used in real-life situations. Find out about simulations and create a simulation of a traffic light system.</td></tr>
<tr><td colspan="2">Biq Question Link</td><td colspan="3">Vision and Values Link</td></tr>
<tr><td colspan="2">N/A</td><td colspan="3">To give back to the community by making interactive stories for younger children to enjoy and learn from.</td></tr>
</table>