Swindon Academy Primary Computing Curriculum Map 2022/2023

Intent

The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils at Swindon Academy are equipped to use information technology to create a range of content.

At Swindon Academy, the computing curriculum also ensures that pupils become digitally literate - able to use and express themselves and develop their ideas through information and communication technology - at a suitable level for the future workplace and as active participants in a digital world. Pupils are responsible, competent, confident and creative users of information and communication technology that inspires them to lead change and enables them to become curious life-long learners.

Implementation – Rosenshine principles of instruction

Daily Review

Daily review is an important component of instruction. It helps strengthen the connections of the material learned. Automatic recall frees working memory for problem solving and creativity.

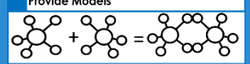
New Material in Small Steps

Our working memory is small, only handling a few bits of information at once. Avoid its overload—present new material in small steps and proceed only when first steps are mastered.

Ask Questions

The most successful teachers spend more than half the class time lecturing, demonstrating and asking questions. Questions allow the teacher to determine how well the material is learned.

Provide Models



Students need cognitive support to help them learn how to solve problems. Modelling, worked examples and teacher thinking out loud, help to clarify the specific steps involved.

Guide Student Practice

Students need additional time to rephrase, elaborate and summarise new material in order to store it in their long-term memory. More successful teachers build in more time for this.

Check Student Understanding

Less successful teachers merely ask "Are there any questions?" no questions are taken to mean no problems. False. By contrast, more successful teachers check on all students.

Obtain High Success Rate

A success rate of around 80% has been found to be optimal, showing students are learning and also being challenged. Better teachers taught in small steps followed by practice.

Scaffolds for Difficult Tasks

Scaffolds are temporary supports to assist learning. They can include modelling, teacher thinking aloud, cue cards and checklists. Scaffolds are part of cognitive apprenticeship.

Independent Practice

Independent practice produces 'overlearning' - a necessary process for new material to be recalled automatically. This ensures no overloading of students' working memory.

Weekly and Monthly Review

The effort involved in recalling recently –learned material embeds it in long-term memory. And the more this happens, the easier it is to connect new material to such prior knowledge.

Computing lessons are taught using the scheme on Microsoft Teams (45 minutes) and Online Safety using the PowerPoints and resources saved in Microsoft Teams within each lesson (15 minutes).

Year 1	Term 2	Term 4	Term 6
	Media: Digital Painting + Online Safety Software: • Paintz - untitled.png - PaintZ Hardware: • Chromebooks	**Data Handling: Grouping Data** + Online Safety Software: • Hardware: •	**Coding: Moving A Robot** + Online Safety Software: • Hardware: • Bee-bots
Online Safety: Year Objectives **Self-Image and Identity** Shaping online identities and how media impacts on gender and stereotypes **Online Relationships** Relationships and behaviours that may lead to harm and how positive online interaction can empower and amplify voice. **Online Reputation** Strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles **Online Bullying** Strategies for effective reporting and intervention and how bullying and other aggressive behaviour relates to legislation **Managing Online Information** Strategies for effective searching, critical evaluation and ethical publishing **Health, Well-being and Lifestyle** The impact that technology has on health, well-being and lifestyle including understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them. **Privacy and Security** Behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise. **Copyright and Ownership** Protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.	**Online Safety** • Self-Image and Identity - L1: 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. - L2: 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. • Online Relationships - L3: 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). - L4: I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online. • Online Reputation - L5: I can describe what information I should not put online without asking a trusted adult first. - L6: I can recognise that information can stay online and could be copied.	**Online Safety** • Online Bullying - L1: I can describe ways that some people can be unkind online. - L2: I can explain what bullying is, how people may bully others and how bullying can make someone feel. • Managing Online Information - L3: 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. - L4: I can explain why some information I find online may not be real or true. • Health, Well-being and Lifestyle - L5: I can identify rules that help keep us safe and healthy in and beyond the home when using technology - L6: I can explain rules to keep myself safe when using technology both in and beyond the home.	**Online Safety** • Privacy and Security - L1: I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). - L2: I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). - L3: I can explain how passwords can be used to protect information, accounts and devices. • Copyright and Ownership - L4: I know that work I create belongs to me. - L5: I can explain why work I create using technology belongs to me - L6: I understand that work created by others does not belong to me even if I save a copy
	Media • "- I can draw lines on a screen and explain which tools I used • - I can make marks on a screen and explain which tools I used • - I can use the paint tools to draw a picture" • "- I can make marks with the square and line tools • - I can use the shape and line tools effectively • - I can use the shape and line tools to recreate the work of an artist" • "- I can choose appropriate shapes • - I can create a picture in the style of an artist • - I can make appropriate colour choices" • "- I can choose appropriate paint tools and colours to recreate the work of an artist • - I can say which tools were helpful and why • - I know that different paint tools do different jobs" • "- I can change the colour and brush sizes • - I can make dots of colour on the page • - I can use dots of colour to create a picture in the style of an artist on my own" • "- I can explain that pictures can be made in lots of different ways • - I can say whether I prefer painting using a computer or using paper • - I can spot the differences between painting on a computer and on paper"	**Data Handling** • "- I can describe objects using labels • - I can identify the label for a group of objects • - I can match objects to groups" • "- I can count a group of objects • - I can count objects • - I can group objects" • "- I can describe an object • - I can describe a property of an object • - I can find objects with similar properties" • "- I can count how many objects share a property • - I can group objects in more than one way • - I can group similar objects" • "- I can choose how to group objects • - I can describe groups of objects • - I can record how many objects are in a group" • "- I can compare groups of objects • - I can decide how to group objects to answer a question • - I can record and share what I have found"	**Coding** • "- I can match a command to an outcome • - I can predict the outcome of a command on a device • - I can run a command on a device" • "- I can follow an instruction • - I can give directions • - I can recall words that can be acted out" • "- I can compare forwards and backwards movements • - I can predict the outcome of a sequence involving forwards and backwards commands • - I can start a sequence from the same place" • "- I can compare left and right turns • - I can experiment with turn and move commands to move a robot • - I can predict the outcome of a sequence involving up to four commands" • "- I can choose the order of commands in a sequence • - I can debug my program • - I can explain what my program should do" • "- I can identify several possible solutions • - I can plan two programs • - I can use two different programs to get to the same place"

Year 2	Term 1 (AC) Term 2 (BA)	Term 3 (AC) Term 4 (BA)	Term 5 (AC) Term 6 (BA)
	Media: Digital Photography + Online Safety <u>Software:</u> • Pixlr for Lesson 5 - Photo Editor : Pixlr X - free image editing online <u>Hardware:</u> • Digital cameras	**Data Handling: Pictograms** + Online Safety <u>Software:</u> • Purple Mash or j2e.com <u>Hardware:</u> • Chromebooks	**Coding: Robot Algorithms** + Online Safety <u>Software:</u> • <u>Hardware:</u> • Bee Bots
Online Safety: Year Objectives **Self-Image and Identity** Shaping online identities and how media impacts on gender and stereotypes **Online Relationships** Relationships and behaviours that may lead to harm and how positive online interaction can empower and amplify voice. **Online Reputation** Strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles **Online Bullying** Strategies for effective reporting and intervention and how bullying and other aggressive behaviour relates to legislation **Managing Online Information** Strategies for effective searching, critical evaluation and ethical publishing **Health, Well-being and Lifestyle** The impact that technology has on health, well-being and lifestyle including understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them. **Privacy and Security** Behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise. **Copyright and Ownership** Protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.	**<u>Online Safety</u>** • Self-Image and Identity - L1: 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. - L2: 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. • Online Relationships - L3: 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). - L4: I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online. • Online Reputation - L5: I can describe what information I should not put online without asking a trusted adult first. - L6: I can recognise that information can stay online and could be copied.	**<u>Online Safety</u>** • Online Bullying - L1: I can describe ways that some people can be unkind online. - L2: I can explain what bullying is, how people may bully others and how bullying can make someone feel. • Managing Online Information - L3: 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. - L4: I can explain why some information I find online may not be real or true. • Health, Well-being and Lifestyle - L5: I can identify rules that help keep us safe and healthy in and beyond the home when using technology - L6: I can explain rules to keep myself safe when using technology both in and beyond the home.	**<u>Online Safety</u>** • Privacy and Security - L1: I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). - L2: I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). - L3: I can explain how passwords can be used to protect information, accounts and devices. • Copyright and Ownership - L4: I know that work I create belongs to me. - L5: I can explain why work I create using technology belongs to me - L6: I understand that work created by others does not belong to me even if I save a copy
	<u>Media</u> • "- I can explain what I did to capture a digital photo • - I can recognise what devices can be used to take photographs • - I can talk about how to take a photograph" • "- I can explain the process of taking a good photograph • - I can explain why a photo looks better in portrait or landscape format • - I can take photos in both landscape and portrait format" • "- I can discuss how to take a good photograph • - I can identify what is wrong with a photograph • - I can improve a photograph by retaking it" • "- I can experiment with different light sources • - I can explain why a picture may be unclear • - I can explore the effect that light has on a photo" • "- I can explain my choices • - I can recognise that images can be changed • - I can use a tool to achieve a desired effect" • "- I can apply a range of photography skills to capture a photo • - I can identify which photos are real and which have been changed • - I can recognise which photos have been changed"	**<u>Data Handling</u>** • "- I can compare totals in a tally chart • - I can record data in a tally chart • - I can represent a tally count as a total" • "- I can enter data onto a computer • - I can use a computer to view data in a different format • - I can use pictograms to answer simple questions about objects" • "- I can explain what the pictogram shows • - I can organise data in a tally chart • - I can use a tally chart to create a pictogram" • "- I can answer 'more than'/'less than' and 'most/least' questions about an attribute • - I can create a pictogram to arrange objects by an attribute • - I can tally objects using a common attribute" • "- I can choose a suitable attribute to compare people • - I can collect the data I need • - I can create a pictogram and draw conclusions from it" • "- I can give simple examples of why information should not be shared • - I can share what I have found out using a computer • - I can use a computer program to present information in different ways"	**<u>Coding</u>** • "- I can choose a series of words that can be enacted as a sequence • - I can follow instructions given by someone else • - I can give clear and unambiguous instructions" • "- I can create different algorithms for a range of sequences (using the same commands) • - I can show the difference in outcomes between two sequences that consist of the same commands • - I can use an algorithm to program a sequence on a floor robot" • "- I can compare my prediction to the program outcome • - I can follow a sequence • - I can predict the outcome of a sequence" • "- I can explain the choices I made for my mat design • - I can identify different routes around my mat • - I can test my mat to make sure that it is usable" • "- I can create an algorithm to meet my goal • - I can explain what my algorithm should achieve • - I can use my algorithm to create a program" • "- I can plan algorithms for different parts of a task • - I can put together the different parts of my program • - I can test and debug each part of the program"

Year 3	Term 2	Term 4	Term 6
	Media: Animation + Online Safety Software: • Purple Mash Hardware: • Chromebooks	**Data Handling: Branching Databases** + Online Safety Software: • Purple Mash Hardware: • Chromebooks	**Coding: Sequence in Music** + Online Safety Software: • Scratch Hardware: • Chromebooks
Online Safety: Year Objectives **Self-Image and Identity** Shaping online identities and how media impacts on gender and stereotypes **Online Relationships** Relationships and behaviours that may lead to harm and how positive online interaction can empower and amplify voice. **Online Reputation** Strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles **Online Bullying** Strategies for effective reporting and intervention and how bullying and other aggressive behaviour relates to legislation **Managing Online Information** Strategies for effective searching, critical evaluation and ethical publishing **Health, Well-being and Lifestyle** The impact that technology has on health, well-being and lifestyle including understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them. **Privacy and Security** Behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise. **Copyright and Ownership** Protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.	**Online Safety** • Self-Image and Identity - L1: 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. - L2: 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. • Online Relationships - L3: 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). - L4: I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online. • Online Reputation - L5: I can describe what information I should not put online without asking a trusted adult first. - L6: I can recognise that information can stay online and could be copied.	**Online Safety** • Online Bullying - L1: I can describe ways that some people can be unkind online. - L2: I can explain what bullying is, how people may bully others and how bullying can make someone feel. • Managing Online Information - L3: 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. - L4: I can explain why some information I find online may not be real or true. • Health, Well-being and Lifestyle - L5: I can identify rules that help keep us safe and healthy in and beyond the home when using technology - L6: I can explain rules to keep myself safe when using technology both in and beyond the home.	**Online Safety** • Privacy and Security - L1: I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). - L2: I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). - L3: I can explain how passwords can be used to protect information, accounts and devices. • Copyright and Ownership - L4: I know that work I create belongs to me. - L5: I can explain why work I create using technology belongs to me - L6: I understand that work created by others does not belong to me even if I save a copy
	Media • "- I can create an effective flip book—style animation • - I can draw a sequence of pictures • - I can explain how an animation/flip book works" • "- I can create an effective stop-frame animation • - I can explain why little changes are needed for each frame • - I can predict what an animation will look like" • "- I can break down a story into settings, characters and events • - I can create a storyboard • - I can describe an animation that is achievable on screen" • "- I can evaluate the quality of my animation • - I can review a sequence of frames to check my work • - I can use onion skinning to help me make small changes between frames" • "- I can evaluate another learner's animation • - I can explain ways to make my animation better • - I can improve my animation based on feedback" • "- I can add other media to my animation • - I can evaluate my final film • - I can explain why I added other media to my animation"	**Data Handling** • "- I can create two groups of objects separated by one attribute • - I can investigate questions with yes/no answers • - I can make up a yes/no question about a collection of objects" • "- I can arrange objects into a tree structure • - I can create a group of objects within an existing group • - I can select an attribute to separate objects into groups" • "- I can group objects using my own yes/no questions • - I can prove my branching database works • - I can select objects to arrange in a branching database" • "- I can compare two branching database structures • - I can create yes/no questions using given attributes • - I can explain that questions need to be ordered carefully to split objects into similarly sized groups" • "- I can create questions and apply them to a tree structure • - I can select a theme and choose a variety of objects • - I can use my branching database to answer questions" • "- I can compare two ways of presenting information • - I can explain what a branching database tells me • - I can explain what a pictogram tells me"	**Coding** • "- I can explain that objects in Scratch have attributes (linked to) • - I can identify the objects in a Scratch project (sprites, backdrops) • - I can recognise that commands in Scratch are represented as blocks" • "- I can choose a word which describes an on-screen action for my plan • - I can create a program following a design • - I can identify that each sprite is controlled by the commands I choose" • "- I can create a sequence of connected commands • - I can explain that the objects in my project will respond exactly to the code • - I can start a program in different ways" • "- I can combine sound commands • - I can explain what a sequence is • - I can order notes into a sequence" • "- I can build a sequence of commands • - I can decide the actions for each sprite in a program • - I can make design choices for my artwork" • "- I can identify and name the objects I will need for a project • - I can implement my algorithm as code • - I can relate a task description to a design"

Year 4	Term 1 (AC) Term 2 (BA)	Term 3 (AC) Term 4 (BA)	Term 5 (AC) Term 6 (BA)
	Media: Photo Editing + Online Safety <u>Software:</u> • Pixlr - Photo Editor : Pixlr X - free image editing online <u>Hardware:</u> • **Chromebooks**	**Data Handling: Data Logging** + Online Safety <u>Software:</u> • Google Science Journal TBC <u>Hardware:</u> • Chromebooks	**Coding: Repetition in Shapes** + Online Safety <u>Software:</u> • Turtle Academy / FMSL Logo <u>Hardware:</u> • Chromebooks
Online Safety: Year Objectives **Self-Image and Identity** Shaping online identities and how media impacts on gender and stereotypes **Online Relationships** Relationships and behaviours that may lead to harm and how positive online interaction can empower and amplify voice. **Online Reputation** Strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles **Online Bullying** Strategies for effective reporting and intervention and how bullying and other aggressive behaviour relates to legislation **Managing Online Information** Strategies for effective searching, critical evaluation and ethical publishing **Health, Well-being and Lifestyle** The impact that technology has on health, well-being and lifestyle including understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them. **Privacy and Security** Behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise. **Copyright and Ownership** Protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.	**Online Safety** • Self-Image and Identity: - L1: I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this. - L2: I can demonstrate how to make responsible choices about having an online identity, depending on context. • Online Relationships - L3: 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. - L4: I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. • Online Reputation - L5: 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. - L6: I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity.	**Online Safety** • Online Bullying L1: I can give examples of how bullying behaviour could appear online and how someone can get support. L2: I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. • Managing Online Information L3: 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. L4: 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. • Health, Well-being and Lifestyle L5: I can explain why spending too much time using technology can sometimes have a negative impact on anyone; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged L6: 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).	**Online Safety** • Privacy and Security - L1: 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. - L2: 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). - L3: I can explain what a strong password is and demonstrate how to create one. • Copyright and Ownership - L4: 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. - L5: I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images. - L6: I can demonstrate the use of search tools to find and access online content which can be reused by others.
	Media • "- I can explain the effect that editing can have on an image • - I can explore how images can be changed in real life • - I can identify changes that we can make to an image" • "- I can change the composition of an image by selecting parts of it • - I can consider why someone might want to change the composition of an image • - I can explain what has changed in an edited image" • "- I can choose effects to make my image fit a scenario • - I can explain why my choices fit a scenario • - I can talk about changes made to images" • "- I can choose appropriate tools to retouch an image • - I can give examples of positive and negative effects that retouching can have on an image • - I can identify how an image has been retouched" • "- I can combine parts of images to create new images • - I can sort images into 'fake' or 'real' and explain my choices • - I can talk about fake images around me" • "- I can compare the original image with my completed publication • - I can consider the effect of adding other elements to my work • - I can evaluate the impact of my publication on others through feedback"	**Data Handling** • "- I can choose a data set to answer a given question • - I can identify data that can be gathered over time • - I can suggest questions that can be answered using a given data set" • "- I can explain that sensors are input devices • - I can identify that data from sensors can be recorded • - I can use data from a sensor to answer a given question" • "- I can identify a suitable place to collect data • - I can identify the intervals used to collect data • - I can talk about the data that I have captured" • "- I can import a data set • - I can use a computer program to sort data • - I can use a computer to view data in different ways" • "- I can plan how to collect data using a data logger • - I can propose a question that can be answered using logged data • - I can use a data logger to collect data" • "- I can draw conclusions from the data that I have collected • - I can explain the benefits of using a data logger • - I can interpret data that has been collected using a data logger"	**Coding** • "- I can create a code snippet for a given purpose • - I can explain the effect of changing a value of a command • - I can program a computer by typing commands" • "- I can test my algorithm in a text-based language • - I can use a template to create a design for my program • - I can write an algorithm to produce a given outcome" • "- I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves • - I can identify patterns in a sequence • - I can use a count-controlled loop to produce a given outcome" • "- I can choose which values to change in a loop • - I can identify the effect of changing the number of times a task is repeated • - I can predict the outcome of a program containing a count-controlled loop" • "- I can explain that a computer can repeatedly call a procedure • - I can identify 'chunks' of actions in the real world • - I can use a procedure in a program" • "- I can design a program that includes count-controlled loops • - I can develop my program by debugging it

			• - I can make use of my design to write a program"
Year 5	**Term 2**	**Term 4**	**Term 6**
	Media: Video Editing + Online Safety <u>Software:</u> • Video Editing Software – Clipchamp <u>Hardware:</u> • Digital Cameras (with video recording function)	**Data Handling: Flat-File Databases** + Online Safety <u>Software:</u> • J2E <u>Hardware:</u> • Chromebooks	**Coding: Selection in Physical Computing** + Online Safety <u>Software:</u> • <u>Hardware:</u> • Crumble controller
Online Safety: **Year Objectives** **Self-Image and Identity** Shaping online identities and how media impacts on gender and stereotypes **Online Relationships** Relationships and behaviours that may lead to harm and how positive online interaction can empower and amplify voice. **Online Reputation** Strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles **Online Bullying** Strategies for effective reporting and intervention and how bullying and other aggressive behaviour relates to legislation **Managing Online Information** Strategies for effective searching, critical evaluation and ethical publishing **Health, Well-being and Lifestyle** The impact that technology has on health, well-being and lifestyle including understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them. **Privacy and Security** Behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise. **Copyright and Ownership** Protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.	**<u>Online Safety</u>** • Self-Image and Identity: - L1: I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this. - L2: I can demonstrate how to make responsible choices about having an online identity, depending on context. • Online Relationships - L3: 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. - L4: I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. • Online Reputation - L5: 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. • L6: I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity.	**<u>Online Safety</u>** • Online Bullying L1: I can give examples of how bullying behaviour could appear online and how someone can get support. L2: I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. • Managing Online Information L3: 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. L4: 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. • Health, Well-being and Lifestyle L5: I can explain why spending too much time using technology can sometimes have a negative impact on anyone; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged • L6: 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).	**<u>Online Safety</u>** • Privacy and Security - L1: 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. - L2: 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). - L3: I can explain what a strong password is and demonstrate how to create one. • Copyright and Ownership - L4: 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. - L5: I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images. - L6: I can demonstrate the use of search tools to find and access online content which can be reused by others.
	<u>Media</u> • "- I can compare features in different videos • - I can explain that video is a visual media format • - I can identify features of videos" • "- I can experiment with different camera angles • - I can identify and find features on a digital video recording device • - I can make use of a microphone" • "- I can capture video using a range of filming techniques • - I can review how effective my video is • - I can suggest filming techniques for a given purpose" • "- I can create and save video content • - I can decide which filming techniques I will use • - I can outline the scenes of my video" • "- I can explain how to improve a video by reshooting and editing • - I can select the correct tools to make edits to my video • - I can store, retrieve, and export my recording to a computer" • "- I can evaluate my video and share my opinions • - I can make edits to my video and improve the final outcome • - I can recognise that my choices when making a video will impact on the quality of the final outcome"	**<u>Data Handling</u>** • "- I can create multiple questions about the same field • - I can explain how information can be recorded • - I can order, sort, and group my data cards" • "- I can choose which field to sort data by to answer a given question • - I can explain what a 'field' and a 'record' is in a database • - I can navigate a flat-file database to compare different views of information" • "- I can combine grouping and sorting to answer more specific questions • - I can explain how information can be grouped • - I can group information to answer questions" • "- I can choose multiple criteria to answer a given question • - I can choose which field and value are required to answer a given question • - I can outline how 'AND' and 'OR' can be used to refine data selection" • "- I can explain the benefits of using a computer to create graphs • - I can refine a chart by selecting a particular filter • - I can select an appropriate chart to visually compare data" • "- I can ask questions that will need more than one field to answer • - I can present my findings to a group • - I can refine a search in a real-world context"	**<u>Coding</u>** • "- I can create a simple circuit and connect it to a microcontroller • - I can explain what an infinite loop does • - I can program a microcontroller to make an LED switch on" • "- I can connect more than one output component to a microcontroller • - I can design sequences that use count-controlled loops • - I can use a count-controlled loop to control outputs" • "- I can design a conditional loop • - I can explain that a condition is either true or • - I can program a microcontroller to respond to an input" • "- I can explain that a condition being met can start an action • - I can identify a condition and an action in my project • - I can use selection (an 'if…then…' statement) to direct the flow of a program" • "- I can create a detailed drawing of my project • - I can describe what my project will do • - I can identify a real-world example of a condition starting an action" • "- I can test and debug my project • - I can use selection to produce an intended outcome • - I can write an algorithm that describes what my model will do"

Year 6	Term 1 (AC) Term 2 (BA)	Term 3 (AC) Term 4 (BA)	Term 5 (AC) Term 6 (BA)
	Media: 3D Modelling + Online Safety <u>Software:</u> • Tinkercad - https://www.tinkercad.com <u>Hardware:</u> • Chromebooks	**Data Handling: Spreadsheets** + Online Safety <u>Software:</u> • Purple Mash 2 Calculate <u>Hardware:</u> • Chromebooks	**Coding: Variables in Games** + Online Safety <u>Software:</u> • Scratch <u>Hardware:</u> • Chromebooks
Online Safety: Year Objectives **Self-Image and Identity** Shaping online identities and how media impacts on gender and stereotypes **Online Relationships** Relationships and behaviours that may lead to harm and how positive online interaction can empower and amplify voice. **Online Reputation** Strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles **Online Bullying** Strategies for effective reporting and intervention and how bullying and other aggressive behaviour relates to legislation **Managing Online Information** Strategies for effective searching, critical evaluation and ethical publishing **Health, Well-being and Lifestyle** The impact that technology has on health, well-being and lifestyle including understanding negative behaviours and issues amplified and sustained by online technologies and the strategies for dealing with them. **Privacy and Security** Behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise. **Copyright and Ownership** Protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.	**<u>Online Safety</u>** • Self-Image and Identity: - L1: I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this. - L2: I can demonstrate how to make responsible choices about having an online identity, depending on context. • Online Relationships - L3: 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. - L4: I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. • Online Reputation - L5: 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. - L6: I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity.	**<u>Online Safety</u>** • Online Bullying L1: I can give examples of how bullying behaviour could appear online and how someone can get support. L2: I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. • Managing Online Information L3: 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. L4: 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. • Health, Well-being and Lifestyle L5: I can explain why spending too much time using technology can sometimes have a negative impact on anyone; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged • L6: 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).	**<u>Online Safety</u>** • Privacy and Security - L1: 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. - L2: 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). - L3: I can explain what a strong password is and demonstrate how to create one. • Copyright and Ownership - L4: 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. - L5: I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images. - L6: I can demonstrate the use of search tools to find and access online content which can be reused by others.
	<u>Media</u> • "- I can discuss the similarities and differences between 2D and 3D shapes • - I can explain why we might represent 3D objects on a computer • - I can select, move, and delete a digital 3D shape" • "- I can change the colour of a 3D object • - I can identify how graphical objects can be modified • - I can resize a 3D object" • "- I can position 3D objects in relation to each other • - I can rotate a 3D object • - I can select and duplicate multiple 3D objects" • "- I can create digital 3D objects of an appropriate size • - I can group a digital 3D shape and a placeholder to create a hole in an object • - I can identify the 3D shapes needed to create a model of a real-world object" • "- I can choose which 3D objects I need to construct my model • - I can modify multiple 3D objects • - I can plan my 3D model" • "- I can decide how my model can be improved • - I can evaluate my model against a given criterion • - I can modify my model to improve it"	**<u>Data Handling</u>** • "- I can answer questions from an existing data set • - I can ask simple relevant questions which can be answered using data • - I can explain the relevance of data headings" • "- I can apply an appropriate number format to a cell • - I can build a data set in a spreadsheet application • - I can explain what an item of data is" • "- I can construct a formula in a spreadsheet • - I can explain the relevance of a cell's data type • - I can identify that changing inputs changes outputs" • "- I can apply a formula to multiple cells by duplicating it • - I can create a formula which includes a range of cells • - I can recognise that data can be calculated using different operations" • "- I can apply a formula to calculate the data I need to answer questions • - I can explain why data should be organised • - I can use a spreadsheet to answer questions" • "- I can produce a graph • - I can suggest when to use a table or graph • - I can use a graph to show the answer to questions"	**<u>Coding</u>** • "- I can explain that the way that a variable changes can be defined • - I can identify examples of information that is variable • - I can identify that variables can hold numbers or letters" • "- I can explain that a variable has a name and a value • - I can identify a program variable as a placeholder in memory for a single value • - I can recognise that the value of a variable can be changed" • "- I can decide where in a program to change a variable • - I can make use of an event in a program to set a variable • - I can recognise that the value of a variable can be used by a program" • "- I can choose the artwork for my project • - I can create algorithms for my project • - I can explain my design choices" • "- I can choose a name that identifies the role of a variable • - I can create the artwork for my project • - I can test the code that I have written" • "- I can extend my game further using more variables • - I can identify ways that my game could be improved • - I can share my game with others"