Year 3: Autumn

3.1 Coding

Enquiry Question	How is an interactive scene created?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• A set of instructions is known as an algorithm. • Code can be created that detects when two objects have collided. • Timers can be introduced into programs to make parts of the program run after a set time. • Events in computer programs cause a block of code to be run. • Buttons are an object type in 2Code. • Bugs are bits of code that are stopping a program from working how it was intended. • Debugging is the process of looking for any problems in code, fixing the problems and repeatedly testing them.	• Flowcharts are a type of diagram that use specifically shaped labelled boxes and arrows to represent an algorithm as a diagram. • Timers are used in coding to help control when a block of commands are run. • Repeat is a control block and blocks of commands can be set to repeat a specified number of times using the repeat control block. • Testing, debugging and fixing are an important part of the process of making computer programs. • Understanding what nesting is and the effect it has on a program can help when trying to debug a program.
Procedural Knowledge	• Recognise the **collision detection** block as part of the event category blocks. • Assign an event for when the two objects collide. • Recognise the **timer block** and drag it into a program. • Place up to four different objects into a design scene of a program. • Recognise the **event command blocks.** • Insert a button into a design mode scene that contains other object types. • Nest code within the **When Clicked Button** that makes an object carry out an action when the button is clicked. • Run the code and check that the program is operating correctly.	• Identify the point the flowchart starts. • Identify any points on it that represent an input or output. • Follow the flow of the chart and interpret what it is representing. • Create a representation of the flowchart by using 2Code. • Insert a **timer after** command in code view and use a **timer every** command to make an event happen. • Insert a **repeat** command into the coding area and set it a specified number of times to repeat. • Test what happens when changing how a program is nested. • Use the knowledge of nesting to help debug a program that isn't working as intended.

Vocabulary	Action, alert, algorithm, background, bug, button, click events, code, collision detection event, command, debug, degrees, event, flowchart, implement, input, interval, nest, object, predict, properties, repeat, right-angle, run, scene, sequence, test, timer, turtle object				
Learning Questions	**What do we know about coding already?**	**What are the differences between timers?**	**How is the repeat command used?**	**What is nesting?**	**Can I design and create an interactive scene (2Code)?**
Mastery Key	➢ Can integrate multimedia components such as sounds, animation and images into their coding.				

Year 3: Autumn

3.2 Online Safety

Enquiry Question	What are the disadvantages of using the Internet?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• Searches can be refined so it is easier to find something. • Work can be shared in a variety of ways. • Email is a way of communication and know that in this form of communication, as with others, you need to be considerate of the user. • The term digital footprint relates to information that a user puts online, and that this footprint may remain even when we think we have removed the information.	• Passwords are private and should never be shared. • Blogs can help us to communicate our thoughts and ideas. • Not everything online is factually correct, and some websites can be referred to as spoof websites. • PEGI/BBFC ratings exist to keep young people safe and steps can be taken should students see inappropriate content.
Procedural Knowledge	• Know what is meant as a safe search. • Look at the ways to narrow down the search. • Tell a trusted adult if they search for something the results are inappropriate or upsetting. • Explain what email is and the advantages of it over other forms of communication. • Reply to an email. • Explain what kind of information may be left on a digital footprint and how this could be used to identify them. • Keep personal information private and stop posting information that may lead others to identify them.	• Take steps to keep a password safe. • Set a password featuring a mix of letters, numbers and special characters. • Use a blog or vlog to communicate ideas and thoughts. • Ascertain which information in a website maybe fake, • Look for alternative ways to check the validity of information. • Consider why spoof websites exist. • Consider what content may be deemed inappropriate. • Check PEGI / BBFC ratings to see if chosen media are suitable. • Talk to a trusted adult about what they have seen or heard if inappropriate content or contact makes them feel uncomfortable.
Vocabulary	**appropriate, blog, inappropriate, internet, password, personal information, permission, reliable source, reputable source, spoof, verify, vlogs, website**	
Learning Questions	**What is a blog?**	**Can you always believe what we read on a website?**	**What can be negative about the internet?**
Mastery Key	➢ Can articulate what can be negative about the Internet.	

Year 3: Autumn

3.3 Spreadsheets

Enquiry Question	What things can you do on a spreadsheet?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• Pictograms created through software or physically are of limited use beyond answering simple questions. • Information can be separated by using yes/no questions.	• Graphs can be generated from data within a sheet. • If data is changed on the sheet, then the graph automatically updates to recognise these amendments. • The more than, less than and equals tools serve a purpose to define a number.
Procedural Knowledge	• Create a class pictogram using 2Count. • Identify questions that we can and can't ask to find information on the pictogram. • Create and use yes/no questions to find individual paper records. • Open a 2Investigate database and identify the records which make up a database.	• Recall the different range of graphs and charts they have come across in other subjects as well as computing including pie and bar. • Enter data into a table format in a spreadsheet. • Select all the data in the table. • Select the chart tool. • Give the table a title. Label the chart axis. Add a title to the chart. • Edit data in a table and see how the chart changes automatically. • Drag numbers into a row so the appropriate sign lights up on the screen using the move tool. • Solve problems using the <,> and = tool. • Create a simple multiplication formula. • Switch to advanced or formula mode in a spreadsheet program. • Read a cell address using column: row cell address. • Click in a given cell by using the cell address. • Complete a task to show their knowledge of cell addresses.
Vocabulary	**Advanced mode, bar graph, cell address, data, equals, less than, more than, equal tool, pie chart, quiz tool, spinner tool, table**	
Learning Questions	**How do you create a pie chart and bar graph on the computer?**	**What do the 'more than', 'less than', 'equals' and 'spin' tools do?** / **Can I find a specified location in a spreadsheet (2Calculate)?**
Mastery Key	➢ Can collect and enter data within 2Calculate.	

Year 3: Spring

3.5 Email

Enquiry Question	How can you send an email safely?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• It is important to log in to a site safely and to keep passwords safe. • Technology is science and engineering knowledge put into practical use to solve problems or invent useful tools. • Email is a way of communication and know that in this form of communication, as with others, you need to be considerate of the user. • The World Wide Web refers to the documents and pages someone sees when using a browser. • Websites can be found using a browser that contains a search engine. • Search engines use millions of people's digital footprints to help provide more accurate results. •	• There are different methods of communication and they each have strengths and weaknesses. • Emails are electronic versions of letters, and they can be sent and received almost instantly to anyone with an email address. • It's important to use email systems safely and that there are things people can do to try to keep themselves safe. • Pictures, documents and other file types can be attached to emails. • Address books can be made in email clients which store known contacts' email addresses. We can use an address to send to multiple people.
Procedural Knowledge	• Know what is meant as a safe search. • Explain what email is and the advantages of it over other forms of communication. • Reply to an email. • Explain what kind of information may be left on a digital footprint and how this could be used to identify them. • Find the number of results for a query entered into a search engine. • With guidance, use some of the search tools on a search engine such as: all, images and	• Present different methods of communication on mind mapping tool. • Explain the advantages and disadvantages of each method. • Identify key areas and functions: Inbox, alerts, reply, formatting tools. • Compose an email including address, subject and message. • Recognise a concerning email/contact. Identify what a trusted contact is. • Recognise personal and private information and how to distinguish between them. • Select files to attach to an email and send. • Use the address book within 2Email to find contacts. • Send an email to multiple contacts using the address book.

	news.				
Vocabulary	**Address book, attachment, BCC Blind carbon copy, CC Carbon copy, communication, compose, email, inbox, link, mind map, node, password, personal information, save to draft, trusted contact,**				
Learning Questions	**What are different methods of communication?**	**How do you open and respond to an email?**	**How do you use email safely?**	**How do you add an attachment to an email?**	**Can I read and respond to a series of email communications (2Email) ?**
Mastery Key	➢ Can read and respond to a series of email communications.				

Year 3: Spring

3.6 Branching Databases

Enquiry Question	How is a database created?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• Bugs are bits of code that are stopping a program from working how it was intended. • Debugging is the process of looking for any problems in code, fixing the problems and repeatedly testing them. • Databases are a computerised system that make it easy to search, select and store information. • Databases contain records which have a variety of information about a specific entry. These can be searched using simple and complex search questions.	• A database is a collection of data organised in a way that it can be searched, and information found easily. • Objects can be sorted using yes/no questions and relate this to how computer binary databases work. • Branching databases can be created using programs such as 2Question. • It is important to test and debug if needed when creating branching databases so that they work as intended.
Procedural Knowledge	• Debug the program if the program isn't working how it was planned. • Run the code and check that the program is operating correctly. • Use a pre-populated binary tree program such as 2Investigate to find answers. • Open a 2Investigate database and identify the records which make up a database. • Identify fields as pieces of information collected for a record.	• Explain binary databases are also known as branching databases due to the branch-like structure. • Identify questions that can be used to sort physical objects. • Develop questioning to include more/less. • Add record cards within 2Question using a plan. • Insert question texts and choice button texts for each card. Add images. • Use the final answer card option for end of a branch. • Plan and create own branching database using 2Question. • Work through all routes on the database and test whether it works as intended. • Identify and fix errors and test again.
Vocabulary	**binary tree, branching database, data, database, debug**	
Learning Questions	**How do you sort objects using just YES/NO questions?**	**How do you complete a branching database?** / **Can I create a branching database (2Question)?**
Mastery Key	➢ Can create own branching database and make further suggestions for improvement.	

Year 3: Summer 3.9 Presenting with Google Slides

Enquiry Question	How is a Google Slides presentation created?				
	Required Prior Knowledge		**Knowledge to be taught**		
Declarative Knowledge	• Digital content can be presented in many forms. • Digital content should be presented using a suitable format. • Digital content in one format can be re-used in other formats to present to audiences.		• Presentation software is a way of creating and displaying information to an audience that is clear and engaging. Presentations can include slides, video and audio. • Animations can be incorporated within Google Slides files. • Designs of slides can be changed and transitions can be applied between slides.		
Procedural Knowledge	• Identify the animation tool and test each animation effect within the animation tool for a selected image. • Apply an animation effect and use the play button to see the effect of the animation within the e-book. • Identify the format that is most used when presenting to an audience. • Use font tools, clipart, page settings and images to enhance digital content in the digital publishing file.		• Explain what Google Slides is and identity some basic features. • Locate and click on blank presentation. Delete existing text boxes on a blank slide. • Insert new text boxes manipulating size and position. Insert images into a presentation slide. • Use the audio feature to record from an external microphone and insert on a slide. • Use the video feature to insert a video from YouTube, URL or Google Drive. • Resize and manipulate media content appropriately on a slide. Identify shape button and line button. • Format inserted shape and line by fill colour, border colour, border weight and border dash. • Locate the 'Animation' menu. Apply an animation to several images. • Select the order that animations are to be played in. • Select slides that are to have transitions.	
Vocabulary	**animation, audio, border properties, duration, editing, fill colour, font formatting, layer, media, presentation, presentation design, preview, review, slide, slideshow, sound effect, textbox, theme, timing, transition, video, wordart**				
Learning Questions	**How do you make a presentation?**	**How do you add media to a presentation?**	**How do you add shapes and lines to a presentation?**	**How do you add animations to a presentation?**	**Can I create a presentation (Google Slides)?**
Mastery Key	➢ Can create a presentation using text, images, animations and transitions between slides.				