Computing Year A			
	Puffin	Swift	Eagle
Autumn 1	IT Around Us	Coding in Purple Mash	Online Safety
Autumn 2	Digital Photography	Networks	Coding
Spring 1	Programming	3D Printer / 2Graph	Networks
Spring 2	Making Music	Stop animation	The Internet
Summer 1	Grouping Data	Coding (code.org)	Online Safety
Summer 2	Online Safety		3D Printing

Computing Year A - Autumn		
Puffin	Swift	Eagle
Focus: IT around us	Focus: Coding in Purple Mash	Focus: Online Safety
• Know the types of computers used in school. • Computers are a part of information technology. • Information technology is a computer or something that works with a computer. • Features of common information technology • Know the types of IT used in school and at home. • IT has a wide range of uses (e.g. scanners at the supermarket, traffic lights, smart phones) • There are safe ways to use IT and we must be responsible when using it.	• Understand what a flowchart is. • How flowcharts are used in computer programming. • Use a flowchart to create a computer program. • Understand that there are different types of timers. • Select the right type of timer for a given purpose. • Use the repeat command. • Understand how the turtle object moves. • Use the repeat command with an object. • Understand the importance of nesting. • Run, test and debug their programs. • Consider nesting when debugging their programs. • Plan their scene and algorithms before they create their program. • Make several different things happen in a program.	• To know how to communicate safely and securely online. • To understand the ethical issues of social media.
Focus: Digital Photography	Focus: Networks	Focus: Coding
• Digital devices can be used to capture images using a camera. • iPads can be used to take photos • Photos can be taken in the camera app and viewed in the photos app. • Landscape and portrait • The quality of a photo is affected by lighting and positioning. • Photos can be edited after they are taken. • Not all photos we see online are real. There are clues that can help you to tell if a photo has been edited.	• Describe the internet as a network of networks • Demonstrate how information is shared across the internet • Discuss why a network needs protecting • Describe networked devices and how they connect • Explain that the internet is used to provide many services • Recognise that the World Wide Web contains websites and web pages • Manipulate windows including viewing 2 windows at once. • Print using specific options. • Take screenshots. • Change the orientation of the page. • Change the size of the page. • Change the layout by using the column tool	• To know how to combine media when coding to create a full animation. • To know how to control variables in a piece of code. • To know how to use a range of different inputs to change a piece of code. • To know how to debug code that is self created or created by other students. • To know how to embed variables in a program. • To know how to link variables with inputs.

Computing Year A - Spring		
Puffin	Swift	Eagle
Focus: Programming	Focus: 3D printer / 2Graph	Focus: Networks
• Algorithms are precise step by step set of instructions used to solve a problem or achieve an objective. • A command is a single code of instruction. • An object is an item in a program that can be given instructions to move or change in some way (action). • An action is a type of command, which are run on an object. They could be used to move an object or change a property. • 2code can be used to create your own computer program. • Collision Detection is used to control what happens after 2 objects touch. • Timers are used to control when something happens. • Debugging is used to find and fix any bugs (errors).	• Know how to use the bank of shapes in TinkerCad. • Move and resize objects in TinkerCad. • Design and create a vehicle in TinkerCad. • Understand how a design can be printed in a 3D printer. • Set up a graph with a given number of fields. • Enter data for a graph. • Produce and share graphs made on the computer. • Select most appropriate style of graph for their data and explain their reasoning. • Present the results in a range of graphical formats. • Use the sorting option to make analysis of their data easier.	• To understand how data is gathered from the internet. • To understand the implications of any online presence. • To know the purpose of computer networks. • To know what different types of computer network are used for. • To identify the parts of a network.
Focus: Making Music	Focus: Stop Animation	Focus: The Internet
• Computers can be used to play sounds of different instruments. • 2sequence and Chrome Music Lab can be used to make music. • Lots of features can be changed such as pitch and tempo when making music on a computer. • Colours and patterns can be used to represent music.	• Draw a sequence of pictures • Create an effective flipbook–style animation • Explain how an animation/flip book works • Predict what an animation will look like • Explain why little changes are needed for each frame • Create an effective stop-frame animation • Break down a story into settings, characters, and events • Describe an animation that is achievable on screen • Create a storyboard • Take photos • Edit photos • Share photos	• To know the purpose of a web page, • To know how to create a webpage with multiple pages and links using a variety of media.

Computing
Year A - Summer

Puffin

Focus: Grouping data

- Objects can be counted and grouped in different ways.
- Groups can be labelled to aid identifications.
- Information collected from groups can be represented using a computing.
- There are different ways to represent data.

Focus: Online Safety

- Private information is personal information that should be kept secure. For example, their date of birth, their full address, credit card numbers.
- A digital foot print is The information about a person that exists on the Internet as a result of their online activity.
- The internet can be used to search for information. You should always use safe search engines.
- Email is a way to communicate online. We use 2Email.
- Some emails may be dangerous - phishing, unkind, viruses.
- Talk to a trusted adult if anything upsets you.

Swift

Focus: Coding (code.org)

- Define the term "password" and describe a password's purpose
- Practice creating a memorable and strong password.
- Explain constraints of translating problems from human language to machine language
- Reframe a sequence of steps as an encoded program
- Break down a long sequence of instructions into the largest repeatable sequence.
- Modify an existing program to solve errors.
- Order movement commands as sequential steps in a program.
- Define ideas using code and symbols.
- Describe and implement a plan to debug a program.
- Identify a bug and the problems it causes in a program.
- Read and comprehend given code.
- Create an interactive game using sequence and event-handlers.
- Identify actions that correlate to input events.
- Share a creative artifact with other students.
- Create an animated, interactive game using sequence and events.
- Develop programs that respond to timed events
- Develop programs that respond to user input
- Construct a program using structures that repeat areas of code
- Improve existing code by finding areas of repetition and moving them into looping structures
- Differentiate between commands that need to be repeated in loops and commands that should be used on their own.
- Identify the benefits of using a loop structure instead of manual repetition.
- Break complex tasks into smaller repeatable sections.
- Define circumstances when certain parts of a program should run and when they shouldn't.
- Determine whether a conditional is met based on criteria.
- Solve puzzles using a combination of looped sequences and conditionals.
- Translate spoken language conditional statements into a program.
- Distinguish between loops that repeat a fixed number of times and loops that repeat as long as a condition is true.

Eagle

Focus: Online Safety

- To understand copyright and digital ownership.
- To understand how to safely search for information online.
- To know how to safely communicate online.

Focus: 3D Printing

- To know how to create extended presentations using Keynote.
- To know hot to create multi object 3d models and covert these for printing.

Computing Year B			
	Puffin	Swift	Eagle
Autumn 1	Technology Around Us	Coding in Purple Mash	Online Safety
Autumn 2	Programming Robots	Online Safety	Coding in Scratch
Spring 1	Digital Writing	Word Processing	Online Safety (Consent)
Spring 2	Coding	Stop Animation	Spreadsheets
Summer 1	Data	Digital Images / Making Music	Online Safety (Copyright)
Summer 2	Online Safety	Branching Databases	Presentations / 3D printer

Computing - Year B - Autumn

Puffin	Swift	Eagle
Focus: Technology around us	**Focus: Coding in Purple Mash**	**Focus: Online Safety**
• Technology is a man made object that helps us. • Technology helps us in a range of ways (a sharpener will sharpen a pencil, a washing machine cleans our clothes) • A computer is a type of technology • A desktop computer is usually bigger and can't be moved • A laptop computer is usually smaller and can be moved • The screen shows us what the computer is doing • The keyboard lets you type letters and numbers • The mouse /trackpad lets you select and move objects • The base unit stores and processes information	• Create a design that represents a sequential algorithm. • Use a flowchart design to create the code. • Explain what Object, Action, Output, Control and Event are in computer programming. • Explain how their program simulates a physical system, i.e. my vehicles move at different speeds and angles. • Describe what they did to make their vehicle change angle. • Show that their vehicles move at different speeds • Understand how the turtle object moves. • Use the repeat command with an object. • Create a computer program that includes use of the repeat command. • Create computer programs using prior knowledge. • Run, test and debug their programs. • Consider nesting when debugging their programs. • Use the properties table to set the properties of objects. • Plan their scene and algorithms before they create their program. • Make several different things happen in a program.	• To know why it is important to keep information safe. • To know how to keep digital information safe.
Focus: Programming Robots	**Focus: Online Safety**	**Focus: Coding**
• When programming, A series of instructions is a sequence (Algorithm) • The order of the instructions can change the outcome of the sequence • You can predict the outcome of a program • You can create a sequence in lots of different ways, on paper, with robots, on the computer • Debugging is correcting errors in a program	• Understand what makes a good password for use on the Internet. • Beginning to realise the outcomes of not keeping passwords safe. • Know all the different ways they know that the Internet can help us to communicate. • Understand that some information held on websites may not be accurate or true. • Understand how to search the Internet and how to think critically about the results that are returned. • Identify some physical and emotional effects of playing/watching inappropriate content/ games. • Relate cyberbullying to bullying in the real-world and have strategies for dealing with online bullying including screenshot and reporting. • Know that security symbols such as a padlock protect their identity online. • Know the meaning of the term 'phishing' and are aware of the existence of scam websites. • Explain what a digital footprint is and how it relates to identity theft. • Give examples of things that they would not want to be in their digital footprint. • Know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer. • Know what a computer virus is. • Determine whether activities that they undertake online, infringe another's' copyright. • Know the difference between researching and using information and copying it. • Know about citing sources that they have used. • Recognise a need to find a balance between being active and digital activities.	• To know how to combine media when coding to create a full animation. • To know how to control variables in a piece of code. • To know how to use a range of different inputs to change a piece of code. • To know how to debug code that is self created or created by other students.

Computing Year B - Spring		
Puffin	Swift	Eagle
Focus: Digital Writing	Focus: Word Processing	Focus: Consent
• A keyboard is used to enter text into a computer • Using a keyboard is called typing • The shift key will change the text into capital letters • The space bar will create a finger space • The enter key will move the cursor to the next line • The delete key will remove the last letter/symbol/ space typed • Text can be changed in many ways • You can change the size, colour and style of the text • Keynote can be used to make presentations	• Select, edit and manipulate text in different ways. • Insert images onto a document. • Format images to achieve various effects. • Suggest ways to improve a layout. • Know some of the main keyboard shortcuts. • Find and use the different functions of the spellcheck tool. • Add a spelling to the spelling dictionary. • Insert a simple table. I can add and delete rows and columns. • Format the borders of the cells within a table. • sSuggest ways to change a table. • Change the orientation of the page. • cChange the size of the page. • Change the layout by using the column tool • Choose a relevant website to link my document to. • Copy the URL that I need. • Format my hyperlink appropriate place to insert it.	• To know what digital autonomy and consent mean. • To know how to make correct decisions when considering digital consent.
Focus: Coding	Focus: Stop Animation	Focus: Spreadsheets
• An algorithm is a precise step by step set of instructions used to solve a problem or achieve an objective. • A command is a single code of instruction. • An action is a types of commands, which are run on an object. They could be used to move an object or change a property. • Collision detection measures whether 2 objects have touched each other.	• To take a series of photos. • To crop an image. • To select a range of images.	• To know why spreadsheets are important. • To know how to create spreadsheets to solve given problem scenarios. • To know how to create formulae in spreadsheets.

Computing - Year B - Summer		
Puffin	Swift	Eagle
Focus: Data	Focus: Digital Images / Making Music	Focus: Copyright
• Objects can be grouped and counted • A pictogram is a pictorial representation of data • Data can be used to learn about a group of people or objects • Data can be used to compare groups of people or objects.	• Improve an image by rotating it • Use photo editing software to crop an image • Explain that different colour effects make you think and feel different things • Experiment with different colour effects • Choose suitable images for my project • Create a project that is a combination of other images • Review images against a given criteria • Combine text and my image to complete the project • Use appropriate musical language to discuss a piece of music. • Identify sounds in a piece of music. • Identify and recall a simple rhythm. • Experiment with pitch, rhythm and melody to create a piece of electronic house music on Busy Beats. • Identify and recall a simple rhythm. • Explain what tempo is and how changing it can change the mood of a piece of music. • Create their own simple rhythm using Busy Beats.	• To understand copyright and digital ownership. • To understand how to safely search for information online.
Focus: Online Safety	Focus: Branching Databases	Focus: Presentations / 3D Printer
• Use technology safely and respectfully • Keeping personal information private • To identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	• Investigate questions with yes/no answers • Make up a yes/no question about a collection of objects • Create two groups of objects separated by one attribute • Select an attribute to separate objects into groups • Create a group of objects within an existing group • Arrange objects into a tree structure • Select objects to arrange in a branching database • Group objects using my own yes/no questions • Test my branching database to see if it works • Create yes/no questions using given attributes • Compare two branching database structures • Explain that questions need to be ordered carefully to split objects into similarly sized groups • Create questions to use in a branching database • Create questions that will enable objects to be uniquely identified • Create a physical version of a branching database	• To know how to create extended presentations using Keynote. • To know hot to create multi object 3d models and covert these for printing.