Year 2 Computing Progression

	COMPUTER SCIENCE: Unit 2.1 – Coding			
Lesson	**Objectives**	**Working towards**	**Meeting expectations**	**Exceeding expectations**
L1 Algorithms	• **To understand what an algorithm is.** • **To create a computer program using an algorithm.**	☐ Children know that an algorithm is related to giving instructions. ☐ They can relate a simple one-step algorithm to the outcome of code in Free code Chimp. For example, in Lesson 1 they have been able to make a program that follows the algorithm e.g. 'when the helicopter is clicked it takes off'. ☐ With support, children can create a simple one step program that achieves a specific purpose. ☐ With support, children can identify and correct errors (Unit 2.1 Lesson 6). ☐ With support, children can identify the parts of an algorithm that control and initiate specific actions. Based on this, with support, children can predict what will happen in a program (Unit 2.1 Lesson 4).	☐ Children can explain that an algorithm is a set of instructions to complete a task. ☐ They have turned algorithms of more than one step into code using free code Chimp. For example, in Lesson 4 and 5 they have been able to make a program that follows their algorithm e.g. 'when the animal is clicked it moves forward then turns right'. ☐ Children show an awareness of the need to be precise in their designs so that algorithms can be successfully translated into code. (Unit 2.1 Lesson 5). ☐ Children use a planning format on paper before implementing on screen within 2Code as they recognise this is the best approach for designing a solution. ☐ They can use the Design Mode within 2Code to carefully see how their planned program will look and are able to switch into Code Mode to apply movements to objects (Unit 2.1. Lesson 4). ☐ They confidently include objects, actions, events and outputs successfully within their 2Code programs. ☐ Children can talk through code which contains a timer command, explaining where this command is positioned and what will happen (Unit 2.1. Lesson 3). ☐ Children can predict program outcomes and attempt to debug. For example, (Unit 2.1 Lesson 6). ☐ Children can identify the parts of a program that respond to specific events and initiate specific actions. Based on this, children can predict and describe, using a cause and effect sentence, what will happen in a program. (Unit 2.1 Lesson 6). ☐ Children can debug their own and other's programs using design documentation to test against (Unit 2.1 Lesson 6).	☐ Children can explain and give examples that an algorithm is a set of instructions to complete a specific task. ☐ They can create complex and logical algorithms of several steps that accomplish the aim of the task that can be easily utilized to create executable code. ☐ Children show an awareness of the need to be precise in their designs so that algorithms can be successfully translated into code (Unit 2.1 Lesson 5). ☐ Children can create more complex programs that utilize all the coding constructs that they have learnt about and extend their own learning by trying out different ways to code that achieve a specific purpose. ☐ Children can identify and correct errors. For example, (Unit 2.1 Lesson 6). ☐ An exceeding pupil will be able to apply their knowledge as a transferable skill across a range of debugging scenarios including making logical attempts to debug their own more complex code. ☐ Children can identify the parts of a program that respond to specific events and initiate specific actions. Based on this, children can adopt a systematic approach for predicting the behaviour of programs. ☐ Furthermore, using cause and affect language, Children can reason in detail about what will happen in a program. For example, (Unit 2.1 Lesson 5).
L2 Collision Detection	• **To create a program using a given design.** • **To understand the collision detection event.**			
L3 Using a Timer	• **To understand that algorithms follow a sequence.** • **To design an algorithm that follows a timed sequence.**			
L4 Different Object Types	• **To understand that different objects have different properties.** • **To understand what different events do in code.**			
L5 Buttons	• **To create a program using a given design.** • **To understand the function of buttons in a program.**			
L6 'Smelly Code' Debugging	• **To know what debugging means.** • **To understand the need to test and debug a program repeatedly.** • **To debug simple programs.**			

Year 2 Computing Progression

DIGITAL LITERACY: Unit 2.2 – Online Safety

Lesson	Objectives	Working towards	Meeting expectations	Exceeding expectations
L1 Searching and Sharing	• To know how to refine searches using the Search tool. • To know how to share work electronically using the display boards. • To use digital technology to share work on Purple Mash to communicate and connect with others locally. • To have some knowledge and understanding about sharing more globally on the Internet.	☐ With support, children are beginning to understand how to use the Purple Mash search bar and know the implications of inappropriate searches (Unit 2.2 Lesson 1). ☐ With support, they can share their work using the display board (Unit 2.2 Lesson 1). ☐ Furthermore, using 2Respond activities, the children develop an understanding of how to use email safely and responsibly (Unit 2.2 Lesson 2). ☐ They also know how to report inappropriate content to their teacher.	☐ Children understand how to use the Purple Mash search bar and know the implications of inappropriate searches (Unit 2.2 Lesson 1). ☐ Most children will be able to explain what a digital footprint is, that it is permanent and their online behaviour influences what it shows (lesson 3). ☐ Most children will be able to give reasons for keeping their password safe that include protecting their personal information. ☐ Most children will be able to express the good and bad sides of digital technology. In lesson 3, they can give examples of positive effects on life as well as negative. ☐ Children add their name to work but show a differentiation between full name and first name only when information is to be shared online. ☐ Most children will be able to share their work to a Display Board (lesson 1). By sharing their work using the display board, children begin to understand how things are shared electronically (Unit 2.2 Lesson 1). ☐ Most children will be able to open and respond to simulated emails in 2Email (lesson 2) ☐ Most children will be able to open and send email responses to simulated emails in 2Email (Unit 2.2 Lesson 2). ☐ Furthermore, using 2Respond activities the children develop an understanding of how to use email safely and responsibly (Unit 2.2 Lesson 2). ☐ They also know how to report inappropriate content to their teacher.	☐ Children understand how to use the Purple Mash search bar (Unit 2.2 Lesson 1) and for greater depth can refine searches using Boolean search terms (AND, OR, NOT). ☐ They know the implications of inappropriate searches. ☐ Children can share their work using the Display Board and begin to understand how things are shared electronically (Unit 2.2 Lesson 1). ☐ Furthermore, using 2Respond activities, the children develop an understanding of how to use email safely and responsibly (Unit 2.2 Lesson 2). ☐ They also know how to report inappropriate content to their teacher.
L2 Email Using 2Respond	• To introduce Email as a communication tool using 2Respond simulations. • To understand how we talk to others when they are not there in front of us. • To open and send simple online communications in the form of email.			
L3 Digital Footprint	• To understand that information put online leaves a digital footprint or trail. • To begin to think critically about the information they leave online. • To identify the steps that can be taken to keep personal data and hardware secure			

Year 2 Computing Progression

INFORMATION TECHNOLOGY: Unit 2.3 – Spreadsheets

Lessons	Objectives	Working towards	Meeting expectations	Exceeding expectations
L1 Reviewing prior use of spreadsheets	• **To review the work done in 2Calculate in year 1.** • **To revise spreadsheet related vocabulary.** • **To use some 2Calculate tools that were introduced in year 1.**	☐ With support, children can open, edit and save sheets in 2Calculate (Throughout Unit 2.3). ☐ Children can enter a small set of data into cells (Throughout Unit 2.3). ☐ With support, they can allocate a value to an image (Unit 2.3 Lesson 1) and manipulate data using copying, cutting and pasting allowing them to solve puzzles (Unit 2.3 Lesson 2) - support in the form of a visual prompt may be given here to aid children in using keyboard short cuts). ☐ Children use images and can present data in a variety of ways (Unit 2.3 Lesson 4).	☐ Using the 2Calculate spreadsheet, children can open, edit and save sheets (Throughout Unit 2.3). ☐ Children can enter data into cells (Throughout Unit 2.3), allocate a value to an image (Unit 2.3 Lesson 1) and manipulate data using copying, cutting and pasting allowing them to solve puzzles (Unit 2.3 Lesson 2). ☐ Children use images and can present data in a variety of ways (Unit 2.3 Lesson 4). ☐ Most children will be able to create a spreadsheet which includes a graph based on simple data collected. Their planned spreadsheet and graph are likely to contain pre-compiled shared data. ☐ They can add colour and appropriate labels to their spreadsheet and graph respectively (Unit 2.3. Lesson 4). ☐ Most children will be able to produce a spreadsheet which can help them solve simple mathematical puzzles, calculate how many coins are required to pay for an amount and present data graphically. ☐ Using spreadsheets, the children can model an idea through them (Unit 2.3.). ☐ Children can utilise spreadsheets both own and pre-made to manipulate data e.g. create a manual graph from a table, produce desired calculations on numerical data e.g. simple addition calculations (Unit 2.3. Lesson 3). ☐ Children can answer questions on data e.g. the most and least popular flavours (Unit 2.3. Lesson 4). ☐ Most children will be able to use 2Calculate to record collected data into a table and use this data to create a block graph manually (Unit 2.3. Lesson 4).	☐ Using the 2Calculate spreadsheet, children can independently open, edit and save sheets and support others in doing this (Throughout Unit 2.3). ☐ Children can enter a wider amount data into cells (Throughout Unit 2.3), allocate a value to an image (Unit 2.3 Lesson 1) and manipulate data seamlessly using keyboard short cuts for copying, cutting and pasting, allowing them to solve puzzles (Unit 2.3 Lesson 2). ☐ Children use images and can present data in a variety of ways (Unit 2.3 Lesson 4). ☐ Children will demonstrate greater depth by explaining the data and summarising this into simple statements (Unit 2.3 Lesson 4).
L2 Copying and Pasting Totalling tools	• **To use copying, cutting and pasting shortcuts in 2Calculate.** • **To use 2Calcuate totalling tools.** • **To use 2Calculate to solve a simple puzzle**			
L3 Using a spreadsheet to add amounts	• **To explore the capabilities of a spreadsheet in adding up coins to match the prices of objects**			
L4 Creating a table and block graph	• **To add and edit data in a table layout.** • **To use the data to manually create a block graph.**			

Year 2 Computing Progression

	INFORMATION TECHNOLOGY: Unit 2.4 – Questioning			
Lessons	**Objective**	**Working towards**	**Meeting expectations**	**Exceeding expectations**
L1 **Using and Creating Pictograms**	• **To show that the information provided on pictograms is of limited use beyond answering simple questions**	☐ With support, children can create basic pictograms using 2Count to represent a simple data set (Unit 2.4 Lesson 1). ☐ Children may need concrete representation to understand how to organise and search for data. With support, this physical representation can then be transferred into 2Investigate and used to answer simple questions on a data set (Unit 2.4 Lesson 5). ☐ Using 2Question, children use a binary tree to sort information and can manipulate their data, answering questions relating to this (Unit 2.4 Lesson 4). ☐ With support, children can store and retrieve data throughout Unit 2.4.	☐ Using 2Count, children can create pictograms to represent data (Unit 2.4 Lesson 1). ☐ Children demonstrate their ability to organise data using a database in 2Investigate and can run simple searches on their data set (Unit 2.4 Lesson 5). ☐ Using 2Question, children use a binary tree to sort information and can manipulate their data, answering questions relating to this (Unit 2.4 Lesson 4). ☐ Children will store and retrieve data throughout Unit 2.4. ☐ Most children will be able to design their own physical binary tree to sort pictures of children (Unit 2.4 Lesson 3). They will be able to apply this skill into using 2Question to answer questions. ☐ Most children can design a binary tree using 2Question to sort pictures (Unit 2.4. Lesson 3). ☐ They can use their own created binary trees to support the answering of related questions to the data (Unit 2.4. Lesson 5).	☐ Using 2Count, children can create pictograms to represent data (Unit 2.4 Lesson 1). ☐ Children demonstrate their ability to organise data using a database in 2Investigate and can run complex searches on their data set (Unit 2.4 Lesson 5). ☐ Using 2Question, children use a binary tree to sort information and can manipulate their data, answering questions relating to this (Unit 2.4 Lesson 4). ☐ Children will store and retrieve data throughout Unit 2.4. ☐ Children demonstrating greater depth can create their own questions using the data and will use skills covered in other units to assist with this.
L2 **Asking Yes / No Questions**	• **To use yes/no questions to separate information**			
L3 **Binary Trees**	• **To construct a binary tree to separate different items.**			
L4 **Using 2Question - a Computer- Based Binary Tree Program**	• **Use 2Question (a binary tree) to answer questions**			
L5 **Using 2Investigate: a Non-Binary Database.**	• **To use a database to answer more complex search questions.** • **To use the Search tool to find information.**			

Year 2 Computing Progression

	DIGITAL LITERACY: Unit 2.5 – Effective Searching			
Lesson	**Objectives**	**Working towards**	**Meeting expectations**	**Exceeding expectations**
L1 **Understanding the Internet and Searching**	• **To understand the terminology associated with the Internet and searching.**	☐ With support, children can retrieve relevant digital content using a search engine. ☐ Children understand the basic terminology of internet, such as: internet, search, webpage and world wide web (Unit 2.5 Lesson 1). ☐ Furthermore, they can identify the layout points and features of a search engine (Unit 2.5 Lesson 2) such as- 'search bar', 'number of results' and 'key information'. ☐ Using this knowledge, they can attempt a simple quiz about the internet (Unit 2.5 Lesson 1). ☐ Using 2Publish+, children can create a leaflet to demonstrate what they have learned- this may demonstrate a limited understanding but is factually correct (Unit 2.5 Lesson 3). ☐ Children can apply their learning of effective searching beyond the classroom.	☐ Children can effectively retrieve relevant, purposeful digital content using a search engine. ☐ Children understand the terminology (Unit 2.5 Lesson 1), layout and features of a search engine (Unit 2.5 Lesson 2). ☐ Using this knowledge, they can answer a quiz about the internet (Unit 2.5 Lesson 1). ☐ Children can apply their learning of effective searching beyond the classroom. ☐ In lesson 2, children can relate the creation of a digital footprint to their search history and make contributions to the class discussion about this. ☐ Most children will plan and create their own leaflet within Purple Mash which shares their learning about safe searching. ☐ They will actively seek out the most appropriate template to use from the three suggested ones which will bring their plan to life (Unit 2.5. Lesson 3). ☐ Most children can successfully find the solutions for answers to a problem or quiz using a search engine (Unit 2.5. Lesson 2). ☐ They understand that they do not have to search for just words, they can also ask a search engine a question (Unit 2.5. Lesson 2).	☐ Independently, children can effectively retrieve relevant, purposeful digital content using a search engine and can alter the search phrase to yield relevant results. ☐ Children understand the terminology (Unit 2.5 Lesson 1), layout and features of a search engine (Unit 2.5 Lesson 2) and use this to assist with its effective operation. ☐ Using this knowledge, they can answer a quiz about the internet (Unit 2.5 Lesson 1). ☐ Using 2Publish+ children can create a detailed leaflet, containing correct terminology and accurate explanations of the features and layout of effective searching. This consolidates their acquired knowledge (Unit 2.5 Lesson 3). ☐ Children can apply their learning of effective searching beyond the classroom.
L2 **Searching the Internet**	• **To gain a better understanding of searching the Internet.**			
L3 **Sharing Knowledge of the Internet and Effective Searching**	• **To create a leaflet to help someone search for information on the Internet.**			

Year 2 Computing Progression

	INFORMATION TECHNOLOGY: Unit 2.6 – Creating Pictures			
Lessons	**Objective**	**Working towards**	**Meeting expectations**	**Exceeding expectations**
L1 Introduction and Impressionism	• **To explore 2Paint A Picture.** • **To look at the work of Impressionist artists and recreate them using the Impressionism template.**	☐ Teachers may wish to allocate tablets to children who have difficulty in controlling a mouse. ☐ With support children can create an image on 2Paint a Picture replicating an established style e.g. pointillism (Unit 2.6 Lesson 2). ☐ Children can enhance a picture using the tools within 2Paint a Picture which demonstrates their ability to manipulate a digital image (Throughout all lessons in Unit 2.6). ☐ Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash.	☐ Using 2Paint a Picture, children can create an image replicating an established style e.g. pointillism (Unit 2.6 Lesson 2). ☐ Children can enhance a picture using the tools within 2Paint a Picture which demonstrates their ability to manipulate a digital image (Throughout all lessons in Unit 2.6). ☐ They can combine and use multiple effects & features to enhance their patterns, such as rotational effects, repeat style buttons and size slider (Unit 2.6. Lesson 4). ☐ Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash. ☐ Most children will be able to successfully create their own pieces of inspired art using 2Paint a Picture. ☐ They will be able to use a range of effects and functions, such as e-collage, in 2Paint a Picture (Unit 2.6. Lesson 4) & (Unit 2.6. Lesson 5).	☐ To demonstrate greater depth, children achieve expected outcomes. In addition to this, using the eCollage (Unit 2.6 Lesson 5) tool on 2Paint a Picture, they can upload a background image of their choice and manipulate this using the tools and ability to layer images to create a given style. In doing this, children demonstrate their ability to seamlessly use all aspects of the software and therefore greater depth. ☐ Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash.
L2 Pointillist Art	• **To look at the work of pointillist artists such as Seurat.** • **To recreate pointillist art using the Pointillism template.**			
L3 Piet Mondrian	• **To look at the work of Piet Mondrian and recreate it using the Lines template.**			
L4 William Morris and Pattern	• **To look at the work of William Morris and recreate it using the Patterns template.**			
L5 Surrealism and eCollage	• **To look at some surrealist art and create your own using the eCollage function in 2Paint A Picture.**			

Year 2 Computing Progression

	INFORMATION TECHNOLOGY: Unit 2.7 – Making Music			
Lessons	**Objective**	**Working towards**	**Meeting expectations**	**Exceeding expectations**
L1 Introducing 2Sequence	• **To be introduced to making music digitally using 2Sequence.** • **To explore, edit and combine sounds using 2Sequence.**	☐ With support, children use the sounds within 2Sequence to create a simple composition (Unit 2.7 Lesson 1). ☐ They demonstrate their ability to manipulate digital content by editing and amending their composition (Unit 2.7 Lesson 1). ☐ Throughout this unit, with support, children show that they can store and retrieve their work from their saved area on Purple Mash.	☐ Children use the sounds within 2Sequence to create a composition (Unit 2.7 Lesson 1). ☐ They demonstrate their ability to manipulate digital content by editing and amending their composition (Unit 2.7 Lesson 1). ☐ They will have explored different sounds to utilise within their tune and functions such as tempo (Unit 2.7 Lesson 1). ☐ Children create, upload and use their own sounds as part of this (Unit 2.7 Lesson 3). ☐ Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash.	☐ Children achieve all expected outcomes. In addition, using 2Beat, children can create a simple drum composition and export this as an mp3. ☐ They can then upload this into 2Sequence allowing them to add greater complexity to their composition. In doing this, children demonstrate their ability to seamlessly use all aspects of the software and therefore greater depth. ☐ Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash.
L2 Making Music	• **To add sounds to a tune to improve it.** • **To think about how music can be used to express feelings and create tunes which depict feelings.**			
L3 Soundtracks	• **To upload a sound from a bank of sounds into the Sounds section.** • **To record their own sound and upload it into the Sounds section.** • **To create their own tune using the sounds which they have added to the Sounds section.**			

Year 2 Computing Progression

	INFORMATION TECHNOLOGY: Unit 2.8 – Presenting Ideas			
Lessons	**Objective**	**Working towards**	**Meeting expectations**	**Exceeding expectations**
L1 **Presenting a Story Three Ways**	• **To explore how a story can be presented in different ways.**	☐ With support throughout, children use the software 2Create a Story on Purple Mash to create a simple narrative (Unit 2.8 Lesson 4). ☐ An emerging child will be able to explain their narrative to the teacher whilst referring to their 2Create a Story file. ☐ Throughout this unit, with support, children show that they can store and retrieve their work from their saved area on Purple Mash.	☐ Children use the software 2Quiz (Unit 2.8 Lesson 2) 2Publish+, 2Connect (Unit 2.8 Lesson 3) and 2Create a Story on Purple Mash to create and present a narrative (Unit 2.8 Lesson 4). This demonstrates the children's understanding of how digital content can be represented in many forms. ☐ Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash. ☐ Throughout this unit, children are presenting ideas in different formats for different audiences. ☐ Most children can adapt their content to suit the audience and format. ☐ When children feedback to others whether face-to-face or online, their input shows consideration for the other person's feelings. ☐ Most children will be able to use Purple Mash as a platform for collaboration. Specifically, they will create a presentation for their class using a tool of their choice (Unit 2.8 Lesson 4). ☐ Most children can plan their own presentation which will utilise either: 2Connect, 2Create a Story or a Publishing Template (Unit 2.8 Lesson 4). ☐ They will effectively select the most appropriate tool to use during the planning and resource gathering stage of the task (Unit 2.8 Lesson 4). ☐ Most children can make improvements to their quizzes they have made in 2Quiz, fully able to select the most appropriate question out of the 8 choices (Unit 2.8. Lesson 2). ☐ Children can utilise a variety of software to manipulate and present digital content and information (Unit 2.8. Lesson 3).	☐ Independently, children choose the software to use to represent their narrative and reason why- 2Quiz (Unit 2.8 Lesson 2) 2Publish+, 2Connect (Unit 2.8 Lesson 3) on Purple Mash to create and present a narrative (Unit 2.8 Lesson 4). This demonstrates the children's understanding of how digital content can be represented in many forms. ☐ Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash.
L2 **Presenting Ideas as a Quiz**	• **To make a quiz about a story or class topic.**			
L3 **Making a Non-Fiction Fact File**	• **To make a fact file on a non-fiction topic.**			
L4 **Making a Presentation**	• **To make a presentation to the class.**			