Mevagissey school - ICT - Two year rolling programme
Cycle A 2020-2021

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1+2	**Computing systems and networks – Technology around us** **Unit introduction (Yr1)** In this unit, learners will develop their understanding of technology and how it can help us. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. Learners will also consider how to use technology responsibly. **Cornerstones link** **Paws, claws and Whiskers.** *Use digital devices to find images of a range of zoo animals. Copy and paste their chosen pictures into appropriate software for presentation to others.* P. of Study Computing Year 1 Recognise common uses of information technology beyond school. ***Purple Mash Unit 1.1*** ***Online Safety & Exploring Purple Mash***	**Creating Media – Digital Painting** **Unit introduction (Yr2)** During this unit, learners develop their understanding of a range of tools used for digital painting. They then use these tools to create their own digital paintings, while gaining inspiration from a range of artists' work. The unit concludes with learners considering their preferences when painting with and without the use of digital devices. **Cornerstones link** **Splendid skies.** Digital painting of night skies, constellations. ***Purple Mash Unit 2.6*** ***Creating Pictures***	**Programming A – Moving a robot** **Unit introduction (Yr1)** This unit introduces learners to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of algorithms. **Cornerstones link** **Memory Box.** Creating a video of how to make picnic food for their picnic. ***Purple Mash Unit 1.4*** ***Lego Builders*** ***Purple Mash Unit 1.5*** ***Maze Explorers***	**Programming B – Introduction to animation** **Unit introduction (Yr1)** **This unit introduces learners to on screen programming through ScratchJr. Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify and create programs. Learners are also introduced to the early stages of program design through the introduction of algorithms. Creating Media – Digital writing** **Cornerstones link** **Muck mess and mixtures.** **Stop motion animation** Create a dough ball animation using their storyboards as a guide. Import their animation into video editing software, such as Movie Maker or iMovie, and use the narration tools to add sound effects, dialogue or narration for effect. P.of study Computing 26 Use technology purposefully to create, organise, store, manipulate and retrieve digital content. ***Purple Mash Unit 1.6*** ***Animated Stories***	**Grouping data** **Unit introduction (Yr1)** This unit introduces pupils to data and information. Labelling, grouping, and searching are important aspects of data and information. Searching is a common operation in many applications, and requires an understanding that to search data, it must have labels. This unit of work focuses on assigning data (images) with different labels in order to demonstrate how computers are able to group and present data. Pupils will begin by using labels to put objects into groups, and labelling these groups. They will demonstrate that they can count a small number of objects, before and after the objects are grouped. Pupils will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose. Finally, pupils will use their ability to sort objects into different groups to answer questions about data. **Cornerstones link** **Beat, band boogie** Labelling different instruments to create a class information book about instruments and how they work. ***Purple Mash Unit 1.2*** ***Grouping & Sorting***	**Unit introduction (Yr2)** During this unit, learners will develop their understanding of the various aspects of using a computer to create and manipulate text. Learners will become more familiar with using a keyboard and mouse to enter and remove text. Learners will also consider how to change the look of their text, and will be able to justify their reasoning in making these changes. Finally, learners will consider the differences between using a computer to create text, and writing text on paper. They will be able to explain which method they prefer and explain their reasoning for choosing this. **Cornerstones link** **Beach Coombers.** Creating fact files for different crustations. Use the address bar to search for the Japanese spider crab, the mantis shrimp, the coconut crab and the Caribbean spiny lobster. View and read web pages to find out about what they eat, what they look like and how they have adapted to their habitat. P. of Study Computing Year 2 Recognise common uses of information technology beyond school. ***Purple Mash Unit 2.5*** ***Effective Searching*** ***Purple Mash Unit 2.8*** ***Presenting Ideas***

| Year 3+4 | **The internet** **Unit introduction (Yr4)** During this unit learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and be given opportunities to explore the World Wide Web for themselves to learn about who owns content and what they can access, add, and create. Finally they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. **Cornerstones link** **Predator.** *Purple Mash Unit 3.2* *Online Safety* *Purple Mash Unit 3.5* *Email* | **Data logging** **Unit introduction (Yr 4)** In this unit, pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed. **Cornerstones link** **Urban Pioneers.** *Purple Mash Unit 3.7* *Simulations* *Purple Mash Unit 3.8* *Graphing* | **Desktop publishing** **Unit introduction (yr 3)** During this unit, learners will become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. Learners will be introduced to the terms 'templates', 'orientation', and 'placeholders' and begin to understand how these can support them in making their own template for a magazine front cover. They will start to add text and images to create their own pieces of work using desktop publishing software. Learners will look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world. **Cornerstones link** **Traders and raiders.** *Purple Mash Unit 3.9* *Presenting* *Purple Mash Unit 3.4* *Touch Typing* | **Audio editing** **Unit introduction (Yr 4)** In this unit, learners will initially examine devices capable of recording digital audio, which will include identifying the input device (microphone) and output devices (speaker or headphones) if available. Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, learners will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. Finally, learners will evaluate their work and give feedback to their peers. **Cornerstones link** **Heroes and villains.** *Purple Mash Unit 4.4* *Writing for Different Audiences* | **Programming A - Sequence in music** **Unit introduction (Yr 3)** This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design through this unit. **Cornerstones link** **Road trip USA..** *Purple Mash Unit 4.9* *Making Music* | **Programming B - Events and actions** **Unit introduction (Yr 3)** This unit explores the links between events and actions, whilst consolidating prior learning relating to sequencing. Learners will begin by moving a sprite in four directions (up, down, left and right). They will then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of pen blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with learners designing and coding their own maze tracing program. **Cornerstones link** **Beach Combers.** P. of Study Computing Year 3 Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. *Purple Mash Unit 4.1* *Coding* |

	Audio editing	The internet	Creating media	Data logging	Programming A - Selection in physical computing	Programming B - Selection in quizzes
Year 4+5	**Unit introduction (Yr 4)** In this unit, learners will initially examine devices capable of recording digital audio, which will include identifying the input device (microphone) and output devices (speaker or headphones) if available. Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, learners will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. Finally, learners will evaluate their work and give feedback to their peers. **Cornerstones link** **Beast creator.**	**Unit introduction (Yr4)** During this unit learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and be given opportunities to explore the World Wide Web for themselves to learn about who owns content and what they can access, add, and create. Finally they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. **Cornerstones link** **1066** **Link to ICT lesson fact or fiction.** *Purple Mash Unit 5.2* *Online Safety*	**Unit introduction (yr5)** This unit gives learners the opportunity to learn how to create short videos in groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Learners are guided with step-by-step support to take their idea from conception to completion. At the teacher's discretion, the use of green screen can be incorporated into this unit. At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video. **Cornerstones link** **Time traveller** **Link to ICT lesson digital montage.** *Purple Mash Unit 5.7* *Concept Maps*	**Unit introduction (Yr 4)** In this unit, pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions. **Cornerstones link** **Scream machine** **Recording forces using digital recordings** *Purple Mash Unit 5.4* *Databases* *Purple Mash Unit 5.3* *Spreadsheets*	**Unit introduction (Yr5)** In this unit, learners will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program components (including output devices- LEDs and motors) through the application of their existing programming knowledge. Learners are introduced to conditions as a means of controlling the flow of actions and explore how these can be used in algorithms and programs through the use of an input device (push switch). Learners make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the if, then structure) and write algorithms and programs that utilise this concept. To conclude the unit, learners design and make a working model of a fairground carousel that will incorporate their understanding of how the microcontroller and its components are connected and how selection can be used to control the operation of the model. Throughout this unit, pupils apply the stages of programming design. **Cornerstones link** **Allotment** *Purple Mash Unit 5.5* *Game Creator*	**Unit introduction (yr5)** In this unit, pupils develop their knowledge of selection by revisiting how conditions can be used in programs and then learning how the If… Then… Else structure can be used to select different outcomes depending on whether a condition is true or false. They represent this understanding in algorithms and then by constructing programs using the Scratch programming environment. They learn how to write programs that ask questions and use selection to control the outcomes based on the answer given. They use this knowledge to design a quiz in response to a given task and implement it as a program. To conclude the unit, learners evaluate their program by identifying: how it meets the requirements of the task; the ways they have improved it; further ways it could be improved. **Cornerstones link** **Off with their heads** *Purple Mash Unit 5.1* *Coding*

Year 6	Communication	3D modelling	Web page creation	Spreadsheets	Programming A – Variables in games	Programming B – Sensing
	Unit introduction (Yr 6)	**Unit introduction (Yr 6)**	**Unit introduction (Yr6)**	**Unit introduction (Yr 6)**	**Unit introduction (yr6)**	**Unit introduction (Yr6)**
	In this unit, the class will learn about the World Wide Web as a communication tool. First, they will learn how we find information on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. They will then investigate different methods of communication, before focusing on internet-based communication. Finally, they will evaluate which methods of internet communication to use for particular purposes.	During this unit, learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, including combining 3D objects to make a house and examining the differences between working digitally with 2D and 3D graphics. Learners will progress to making accurate 3D models of physical objects, such as a pencil holder, which include using 3D objects as placeholders. Finally, learners will examine the need to group 3D objects, then go on to plan, develop, and evaluate their own 3D model of a photo frame.	This unit introduces learners to the creation of websites for a chosen purpose. Learners identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths.	This unit introduces the learners to spreadsheets. Learners are supported in organising data into columns and rows to create their own data set. They are taught the importance of formatting data to support calculations. Learners are introduced to formulas and begin to understand how these can be used to produce calculated data. They are taught how to apply formulas which include a range of cells and apply formulas to multiple cells by duplicating them. Learners use spreadsheets to plan an event and answer questions. Finally learners create graphs and charts and evaluate their results in comparison to questions asked.	This unit explores the concept of variables in programming through games in Scratch. First, pupils will learn what variables are, and relate them to real-world examples of values that can be set and changed. Pupils will then use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, pupils will experiment with variables in an existing project, then modify them, then they will create their own project. In Lesson 4, pupils will focus on design. Finally, in Lesson 6, pupils will apply their knowledge of variables and design to improve their game in Scratch.	This unit is the final KS2 programming unit and brings together elements of all the four programming constructs: sequence from year 3, repetition from year 4, selection from year 5 and variables, introduced in year 6, programming A. It offers learners the opportunity to use all of these constructs in a different, but still familiar environment whilst also utilising a physical device - the micro:bit. The unit begins with a simple program which learners build in and test in the programming environment before transferring it to their micro:bit. Learners then take on three new projects in lessons 2, 3 and 4, with each lesson adding more depth.
	Cornerstones link **War child** **ICT lesson link – war is over.** *Purple Mash Unit 6.2* *Online Safety* *Purple Mash Unit 6.6* *Networks*	**Cornerstones link** **Frozen kingdom** *Purple Mash* *2Design & Make*	**Cornerstones link** **Darwin's delights** **Create a website for the Galapagos islands** *Purple Mash Unit 6.4* *Blogging*	**Cornerstones link** Revolution *Purple Mash Unit 6.9* *Spreadsheets*	**Cornerstones link** **ID** *Purple Mash Unit 6.5* *Text Adventures*	**Cornerstones link** **Tomorrows world** *Purple Mash Unit 6.1* *Coding*

Mevagissey school - ICT - Two year rolling programme
Cycle B 2021-2022

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1 +2	**Computing systems and networks - Information Technology around us** <u>Unit introduction (Yr2)</u> In this unit, learners will look at information technology at school and beyond, in settings such as shops, hospitals, and libraries. Learners will investigate how information technology improves our world, and they will learn about using information technology responsibly. ***Purple Mash Unit 1.9 Technology Outside of School*** ***Purple Mash Unit 2.2 Online Safety***	**Digital photography** <u>Unit introduction (Yr1)</u> Through the lessons in this unit, learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real. ***Purple Mash Unit 2.4 Questioning***	**Making music** <u>Unit introduction (Yr1)</u> In this unit, learners will be using a computer to create music. They will listen to a variety of pieces of music and consider how music can make them think and feel. Learners will compare creating music digitally and non-digitally. Learners will look at patterns and purposefully create music. ***Purple Mash Unit 2.7 Making Music***	**Pictograms** <u>Unit introduction (Yr2)</u> This unit introduces the learners to the term 'data'. Learners will begin to understand what data means and how this can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions. ***Purple Mash Unit 1.3 Pictograms*** ***Purple Mash Unit 1.8 Spreadsheets***	**Programming A – Robot algorithms** <u>Unit introduction (Yr2)</u> This unit develops pupils' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Pupils will use given commands in different orders to investigate how the order affects the outcome. Pupils will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them. ***Purple Mash Unit 1.7 Coding***	**An introduction to quizzes** <u>Unit introduction (Yr2)</u> This unit initially recaps on learning from the Year 1 Scratch Junior unit 'Programming B - Introduction to animation' Learners begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr and realise these designs in ScratchJr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects. ***Purple Mash Unit 2.1 Coding***

	Connecting computers	Animation	Photo editing	Branching databases	Programming A – Repetition in shapes	Repetition in games
Year 3+4	**Unit introduction (Yr3)** During this unit, learners develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They also compare digital and non-digital devices. Following this, learners are introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. The unit concludes with learners discovering the benefits of connecting devices in a network. ***Purple Mash Unit 4.8*** ***Hardware Investigations*** ***1***	**Unit introduction (Yr3)** During this unit, learners will use a range of techniques to create a stop frame animation using tablets. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text. ***Purple Mash Unit 4.6*** ***Animation***	**Unit introduction (Yr 4)** In this unit, learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices.	**Unit introduction (Yr3)** During this unit, learners will develop their understanding of what a branching database is and how to create one. They will gain an understanding of what attributes are and how to use them to sort groups of objects by using yes/no questions. The learners will create physical and on-screen branching databases. Finally, they will evaluate the effectiveness of branching databases and will decide what types of data should be presented as a branching database. ***Purple Mash Unit 3.6*** ***Branching Databases*** ***Purple Mash Unit 3.3*** ***Spreadsheets***	**Unit introduction (Yr 4)** This unit is the first of the two programming units in Year 4, and looks at repetition and loops within programming. Pupils will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language. ***Purple Mash Unit 4.5*** ***Logo***	**Unit introduction (Yr4)** This unit explores the concept of repetition in programming using the Scratch environment. It begins with a Scratch activity similar to that carried out in Logo in Programming unit A, where learners can discover similarities between two environments. Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout. ***Purple Mash Unit 3.1*** ***Coding***

	Sharing information	Vector drawing	Photo editing	Flat-file databases	Programming A – Repetition in shapes	Repetition in games
Year 4+5	**Unit introduction (Yr 5)** In this unit, learners will develop their understanding of computer systems and how information is transferred between systems and devices. Learners will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Learners will also take part in a collaborative online project with other class members and develop their skills in working together online. *Purple Mash Unit 4.2* *Online Safety* *Purple Mash Unit 3.8* *Effective Search*	**Unit introduction (Yr 5)** In this unit learners will find out that vector images are made up of shapes. They will learn how to use the different drawing tools and how images are created in layers. They will explore the ways in which images can be grouped and duplicated to support them in creating more complex pieces of work. This unit is planned using the Google Drawings app other alternative pieces of software are available. *Purple Mash Unit 5.6* *3D Modelling*	**Photo editing** **Unit introduction (Yr 4)** In this unit, learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices.	**Unit introduction (Yr5)** This unit looks at how a flat-file database can be used to organise data in records. Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others. *Purple Mash Unit 4.3* *Spreadsheets*	**Unit introduction (Yr 4)** This unit is the first of the two programming units in Year 4, and looks at repetition and loops within programming. Pupils will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language. *Purple Mash* *2Logo*	**Unit introduction (Yr4)** This unit explores the concept of repetition in programming using the Scratch environment. It begins with a Scratch activity similar to that carried out in Logo in Programming unit A, where learners can discover similarities between two environments. Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout. *Purple Mash Unit 5.5* *Game Creator*

	Communication	3D modelling	Web page creation	Spreadsheets	Programming A – Variables in games	Programming B – Sensing
Year 6	**Unit introduction (Yr 6)** In this unit, the class will learn about the World Wide Web as a communication tool. First, they will learn how we find information on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. They will then investigate different methods of communication, before focusing on internet-based communication. Finally, they will evaluate which methods of internet communication to use for particular purposes.	**Unit introduction (Yr 6)** During this unit, learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, including combining 3D objects to make a house and examining the differences between working digitally with 2D and 3D graphics. Learners will progress to making accurate 3D models of physical objects, such as a pencil holder, which include using 3D objects as placeholders. Finally, learners will examine the need to group 3D objects, then go on to plan, develop, and evaluate their own 3D model of a photo frame.	**Unit introduction (Yr6)** This unit introduces learners to the creation of websites for a chosen purpose. Learners identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths.	**Unit introduction (Yr 6)** This unit introduces the learners to spreadsheets. Learners are supported in organising data into columns and rows to create their own data set. They are taught the importance of formatting data to support calculations. Learners are introduced to formulas and begin to understand how these can be used to produce calculated data. They are taught how to apply formulas which include a range of cells and apply formulas to multiple cells by duplicating them. Learners use spreadsheets to plan an event and answer questions. Finally learners create graphs and charts and evaluate their results in comparison to questions asked.	**Unit introduction (yr6)** This unit explores the concept of variables in programming through games in Scratch. First, pupils will learn what variables are, and relate them to real-world examples of values that can be set and changed. Pupils will then use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, pupils will experiment with variables in an existing project, then modify them, then they will create their own project. In Lesson 4, pupils will focus on design. Finally, in Lesson 6, pupils will apply their knowledge of variables and design to improve their game in Scratch.	Unit introduction This unit is the final KS2 programming unit and brings together elements of all the four programming constructs: sequence from year 3, repetition from year 4, selection from year 5 and variables, introduced in year 6, programming A. It offers learners the opportunity to use all of these constructs in a different, but still familiar environment whilst also utilising a physical device - the micro:bit. The unit begins with a simple program which learners build in and test in the programming environment before transferring it to their micro:bit. Learners then take on three new projects in lessons 2, 3 and 4, with each lesson adding more depth.