Year 2 - Progression of Knowledge and Skills IT

Term	Knowledge	Skills
Autumn 1 – The Internet	• The Internet is a global network of connected computers around the world. • An internet connection allows people to communicate with others over the internet and that this is commonly known as being online. • An internet connection can be made using wires or wirelessly • A browser is used to access websites and webpages of the World Wide Web. • The World Wide Web refers to the documents and pages someone sees when using a browser. • Smart devices are those that can connect to the internet to do more than a basic function. • The 'front page' of a website is known as the home page. • Webpages have links that, when clicked, display other webpages. • Websites can be found using a browser that contains a search engine.	• Explain the difference between the Internet and the World Wide Web, recognising that they describe different things. • Explain that Wi-Fi describes a wireless internet connection. • Recognise a web browser. • Find information on a school's website by viewing different webpages. • Decide whether a device is a smart device. Give examples of smart devices. • Navigate to the Purple Mash homepage and to a school's website homepage. • Use a link on a webpage of a school's website. • Use keywords to search for information using a search engine.

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Term	Knowledge	Skills
Autumn 2 **Spreadsheets**	• A spreadsheet is a program that organises data in rows and columns. • 2Calculate is a type of spreadsheet program. • Each box in a spreadsheet is called a cell, and every cell has a unique name. • Rows run horizontally, and columns run vertically. • Formatting tools can be used to change the way data looks (e.g. size, colour, wrap text). • It is important to consider the clarity of a spreadsheet and what can be done to improve this. • Images and numbers can be used in spreadsheets, and values can be assigned to images. • Spreadsheets can use a range of mathematical operations to carry out calculations automatically. • 2Calculate contains various tools that can be used for different reasons. • The 'Is Equals' tool can check if a calculation is correct. • The 'Quiz' tool can be used to make interactive questions inside a spreadsheet.	• Identify a cell by its name. • Enter data into a cell and move between cells with ease. • Explain the difference between a row and column. • Resize rows and columns to make data clearer. • Use formatting tools such as the cell colour picker, wrap text, and bold buttons to improve clarity and organisation of data. • Check and improve their spreadsheet to ensure it is neat, accurate, and easy to understand. • Insert images and assign them numerical values • Apply calculation tools (add, subtract, multiply, divide) to carry out various operations in a spreadsheet. • Use the 'Is Equals' tool to check whether a calculation is correct. • Use the 'Quiz' tool to create an interactive calculation.

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Autumn 2 Spreadsheets	• The 'Count' tool can show how many of something there are in a spreadsheet. • Block diagrams are a way of presenting data to make it easier to understand. • Two sets of data are needed to create a block diagram (one for the category, one for the amount).	Use the 'Count' tool to total how many of an item appear in a spreadsheet. • Create block diagrams in 2Calculate to present data visually.
Spring 1 Making Music	• Live, instrumental music is created by real instruments and digital music is created by using a computer. • Music can be made digitally using programs like 2Sequence. • Open 2Sequence. • Listen to a premade composition by pressing the play button. • Observe what happens on the screen when composition is playing including the placement of sounds. • Notes that are the same colour on 2Sequence represent the same note tone • The speed of a digital musical, known as tempo, can be altered by changing the BPM (beats per minute).	• Identify if sounds are made by real instruments or made by a computer. • Identify the sound of different instruments, whether live or digitally made. • Open 2Sequence. Listen to a premade composition by pressing the play button. Observe what happens on the screen when composition is playing including the placement of sounds. • Explore the sounds and instruments category. • Drag sounds into the playable area.

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Spring 1 **Making Music**	• The volume of instruments/sounds on a track can be changed when using music programs. • Looping a track means that it continues to play on repeat. • Music programs let users incorporate their own sounds into a composition.	• Play and experiment with the organisation of sounds on each track. Compare the sounds of different notes. • Recognise that some notes sound the same. • Recognise that some notes sound better together than others • Locate the beats per minute slider. • Experiment with changing the slider's position. • Listen in play mode to how changing the position of the slider affects a composition. • Locate the different rows of music. • Locate the volume sliders at the end of each row of music (tracks). • Adjust the volume on individual rows of music (tracks). • Play the music and test the effect of altering the volume of individual tracks.

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Spring 1 **Making Music**		• Experiment with the looping feature. Identify how this affects a tune. Manipulate a piece of music so that it sounds correct when looping and doesn't have a noticeable jump when it restarts each repeat. • Locate the My Sounds section. • Click on the record icon. • Use the record button to incorporate own sound from a microphone. • Test the recording back by pressing play. • Click done when happy with recording.
Spring 2 **Route Explorers**	• The combination of a direction and a distance is known as a command in 2Go. • Commands can be input into 2Go to control the movement of a screen turtle in four directions. • Planning a route is important in order to input the correct commands.	• Input commands in 2Go. • Input purposeful commands in 2Go to move the turtle in a specific direction towards a goal. • Use techniques such as finger movements to plan a route.

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Spring 2 **Route Explorers**	• Routes can be programmed to perform more than one command in a sequence. • A list of instructions for a route is the algorithm. • Errors (bugs) occur because commands may have been input incorrectly. • Fixing the errors is called debugging.	• Input several commands into a sequential algorithm layout and run this code to move the turtle along a programmed route. • Reset the turtle to the starting position to re-run the code. • Plan the route by writing the algorithm first and then inputting the commands. • Make logical attempts to debug code for routes. • Reset, debug and re-run the code to test routes.
Summer 1 **Coding**	• In computing, a set of instructions is known as an algorithm. Steps in an algorithm must be followed to achieve the intended outcome. • The collision detection event is a way to cause an action when two objects collide with each other. • Programs follow a sequence of instructions (commands) in order. • Timer commands can be used to make parts of the program run after a set time. • .	• Follow a written algorithm. • Identify required events, objects and actions from a program algorithm. • Identify the collision detection block within the event category blocks. • Use a collision detection block in a program.

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Summer 1 Coding	• Different object types in 2Code have different attributes that can be changed. • Event commands in 2Code are used to create blocks of code that are run when an event happens. There are different event command blocks in 2Code. • Debugging is the process of testing that a program works as intended, looking for any bugs and fixing the problems when found	• Assign two objects within the collision detection command. • Assign an event for when the two objects collide. • Run code and see the sequential effect that occurs. Identify the timer command within the control category blocks. • Use the time after command and set a specified number of seconds. • Nest actions within the timer command to delay their running. • Use a variety of object types. Identify attributes which appear under some objects and not in others e.g. a turtle type and a character type. Alter attributes of an object, such as the image and scale within Design View. • Recognise the event command blocks – When Key Event, When Swiped Event, When Clicked Event and Collision Detection. • Use a variety of event blocks in different circumstances.

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Summer 1 Coding		• Use specific event commands for specific objects, such as a click event for a button object. • Use logical reasoning to identify the source of bugs and attempt to fix them. Test and debug code in a systematic way.
Summer 2 - Creating Pictures	• Digital art tools usually have a choice of painting effects. • Painting effects can be combined to help a user make pictures of varying styles. • The size of an onscreen painting tool brush stroke can be manipulated. • Intensity of colours can be manipulated digitally. • Outline features in a digital art program can help a user compose an image.	• Explore the range of painting effects in 2Paint. • Observe how the painting effects give different results. • Produce digital images in traditional art styles using digital painting effects. • Use the brush tool slider to change the size of brush strokes to achieve the desired effects • Use the dilute tool to manipulate the intensity of any selected colour. • Make use of outline features, such as selecting, resizing, and editing outlines, to enhance their digital art.