

Progression of Skills in Computing at Mile Cross Primary School

EYFS	KS1	Year 1 (Teach Computing Curriculum)	Year 2 (Teach Computing Curriculum)
<p>End of year expectations</p>		<p>Autumn 1 – Computing systems and networks - Technology around us Autumn 2 – Creating media 1 - Digital painting Spring 1 – Programming A – Moving a robot Spring 2 – Data and information - Grouping data Summer 1 – Creating Media 2 – Digital writing Summer 2 – Programming B - Introduction to animation</p>	<p>Autumn 1 – Computing systems and networks – IT around us Autumn 2 – Creating Media 1 - Digital photography Spring 1 – Programming A – Robot algorithms Spring 2 – Data and information - Pictograms Summer 1 – Creating Media 2 – Making music Summer 2 – Programming B – An introduction to quizzes</p>
<ul style="list-style-type: none"> • Ask an adult when I want to use the Internet • Tell an adult when something worrying or unexpected happens while I am using the Internet • Be kind to my friends • Talk about the amount of time I spend using a computer / tablet / game device • Be careful with technology devices • Talk about technology that is used at home and in school • Operate simple equipment • Use a safe part of the Internet to play and learn 	<p>Autumn 1 Computing and networks</p>	<p>Autumn 1 – Computing systems and networks - Technology around us</p> <ul style="list-style-type: none"> • Explain technology as something that helps us • Locate examples of technology in the classroom • Explain how these technology examples help us • Name the main parts of a computer • Switch on and log into a computer • Use a mouse to click and drag • Click and drag to make objects on a screen • Use a mouse to create a picture • Use a mouse to open a program • Save my work to a file • Say that writing on a computer is called typing • Type my name on a computer • Delete letters • Open my work from a file • Use the arrow keys to move the cursor • Identify rules to keep us safe and healthy when we are using technology in and beyond the home • Give examples of some of these rules • Discuss how we benefit from these rules 	<p>Autumn 1 – Computing systems and networks – IT around us</p> <ul style="list-style-type: none"> • Describe some uses of computers • Identify examples of computers • Identify that a computer is a part of information technology • Explain the purpose of information technology in the home • Move and resize images • Open a file • Compare types of information technology • Find examples of information technology • Talk about uses of information technology • Demonstrate how information technology is used in a shop • Explain how information technology helps people • Recognise that information technology can be connected • List different uses of information technology • Recognise how to use information technology responsibly • Say how rules/guides can help me • Enjoy a variety of activities • Explain simple guidance for using information technology in different environments and settings • Identify the choices that I make when using information technology
<ul style="list-style-type: none"> • Move objects on a screen • Create shapes and text on a screen 	<p>Autumn 2 Creating Media 1</p>	<p>Autumn 2 – Creating media - Digital painting</p> <ul style="list-style-type: none"> • Draw lines on a screen and explain which tools I used • Make marks on a screen and explain which tools I used • Use the paint tools to draw a picture • Make marks with the square and line tools • Use the shape and line tools effectively • Use the shape and line tools to recreate the work of an artist • Choose appropriate shapes • Create a picture in the style of an artist • Make appropriate colour choices • Choose appropriate paint tools and colours to recreate the work of an artist • Say which tools were helpful and why • Know that different paint tools do different jobs • Change the colour and brush sizes • Make dots of colour on the page • Use dots of colour to create a picture in the style of an artist on my own • Explain that pictures can be made in lots of different ways • Say whether I prefer painting using a computer or using paper • Spot the differences between painting on a computer and on paper 	<p>Autumn 2 – Creating Media 1 - Digital photography</p> <ul style="list-style-type: none"> • Capture digital photos and talk about my experience • Sort devices into old and new • Talk about how to take a photograph • Explain the process of taking a good photograph • Explain why a photo looks better in portrait or landscape format • Take photos in both landscape and portrait format • Discuss how to take a good photograph • Identify what is wrong with a photograph • Improve a photograph by retaking it • Experiment with different light sources • Explore the effect that light has on a photo • Focus on an object • Explain my choices • Recognise that images can be changed • Use a tool to achieve a desired effect • Apply a range of photography skills to capture a photo • Identify which images are real and which have been changed • Recognise which images have been changed



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<ul style="list-style-type: none"> • Make a floor robot move • Make choices about the buttons and icons I press, touch or click on 	<p>Spring 1 Programming A</p>	<p>Spring 1 – Programming A – Moving a robot</p> <ul style="list-style-type: none"> • Match a command to an outcome • Predict the outcome of a command on a device • Run a command on a device • Follow an instruction • Give directions • Recall words that can be acted out • Compare forwards and backwards movements • Predict the outcome of a sequence involving forwards and backwards commands • Start a sequence from the same place • Compare left and right turns • Experiment with turn and move commands to move a robot • Predict the outcome of a sequence involving up to four commands • Choose the order of commands in a sequence • Debug my program • Explain what my program should do • Identify several possible solutions • Plan two programs • Use two different programs to get to the same place 	<p>Spring 1 – Programming A – Robot algorithms</p> <ul style="list-style-type: none"> • Choose a series of words that can be enacted as a sequence • Follow instructions given by someone else • Give clear and unambiguous instructions • Create different algorithms for a range of sequences (using the same commands) • Show the difference in outcomes between two sequences that consist of the same commands • Use an algorithm to program a sequence on a floor robot • Compare my prediction to the program outcome • Follow a sequence • Predict the outcome of a sequence • Explain the choices I made for my mat design • Identify different routes around my mat • Test my mat to make sure that it is usable • Create an algorithm to meet my goal • Explain what my algorithm should achieve • Use my algorithm to create a program • Plan algorithms for different parts of a task • Put together the different parts of my program • Test and debug each part of the program
<ul style="list-style-type: none"> • Talk about different kinds of information such as pictures, video, text and sound 	<p>Spring 2 Data and information</p>	<p>Spring 2 – Data and information - Grouping data</p> <ul style="list-style-type: none"> • Describe objects using labels • Identify the label for a group of objects • Match objects to groups • Count a group of objects • Count objects • Group objects • Describe a property of an object • Describe an object • Find objects with similar properties • Count how many objects share a property • Group objects in more than one way • Group similar objects • Choose how to group objects • Describe groups of objects • Record how many objects are in a group • Compare groups of objects • Decide how to group objects to answer a question • Record and share what I have found 	<p>Spring 2 – Data and information - Pictograms</p> <ul style="list-style-type: none"> • Compare totals in a tally chart • Record data in a tally chart • Represent a tally count as a total • Enter data onto a computer • Use a computer to view data in a different format • Use pictograms to answer simple questions about objects • Explain what the pictogram shows • Organise data in a tally chart • Use a tally chart to create a pictogram • Answer 'more than'/'less than' and 'most/least' questions about an attribute • Create a pictogram to arrange objects by an attribute • Tally objects using a common attribute • Choose a suitable attribute to compare people • Collect the data I need • Create a pictogram and draw conclusions from it • Give simple examples of why information should not be shared • Share what I have found out using a computer • Use a computer program to present information in different ways

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<ul style="list-style-type: none"> Use technology to show my learning 	<p>Summer 1 Creating Media 2</p>	<p>Summer 1 - Creating Media 2 – Digital writing</p> <ul style="list-style-type: none"> Identify and find keys on a keyboard Open a word processor Recognise keys on a keyboard Enter text into a computer Use backspace to remove text Use letter, number, and space keys Explain what the keys that I have learnt about already do Identify the toolbar and use bold, italic, and underline Type capital letters Change the font Select a word by double-clicking Select all of the text by clicking and dragging Decide if my changes have improved my writing Say what tool I used to change the text Use 'undo' to remove changes Compare using a computer with using a pencil and paper Say which method I like best Write a message on a computer and on paper 	<p>Summer 1 – Creating Media 2 – Making music</p> <ul style="list-style-type: none"> Describe how music makes me feel, e.g. happy or sad Identify simple differences in pieces of music Listen with concentration to a range of music (links to the Music curriculum) Create a rhythm pattern Explain that music is created and played by humans Play an instrument following a rhythm pattern Connect images with sounds Relate an idea to a piece of music Use a computer to experiment with pitch and duration Identify that music is a sequence of notes Refine my musical pattern on a computer Use a computer to create a musical pattern using three notes Describe an animal using sounds Explain my choices Save my work Explain how I made my work better Listen to music and describe how it makes me feel Reopen my work
<ul style="list-style-type: none"> Use simple software to make something happen 	<p>Summer 2 Programming B</p>	<p>Summer 2 – Programming B - Introduction to animation</p> <ul style="list-style-type: none"> Match a command to an outcome Predict the outcome of a command on a device Run a command on a device Follow an instruction Give directions Recall words that can be acted out Compare forwards and backwards movements Predict the outcome of a sequence involving forwards and backwards commands Start a sequence from the same place Compare left and right turns Experiment with turn and move commands to move a robot Predict the outcome of a sequence involving up to four commands Choose the order of commands in a sequence Debug my program Explain what my program should do Identify several possible solutions Plan two programs Use two different programs to get to the same place 	<p>Summer 2 – Programming B – An introduction to quizzes</p> <ul style="list-style-type: none"> Identify that a program needs to be started Identify the start of a sequence Show how to run my program Change the outcome of a sequence of commands Match two sequences with the same outcome Predict the outcome of a sequence of commands Build the sequences of blocks I need Decide which blocks to use to meet the design Tell the actions of a sprite in an algorithm Choose backgrounds for the design Choose characters for the design Create a program based on the new design Build sequences of blocks to match my design Choose the images for my own design Create an algorithm compare my project to my design Debug Improve my project by adding features

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	<u>Year 3 (Teach Computing Curriculum)</u>	<u>Year 4 (Teach Computing Curriculum)</u>
<u>Topics</u>	Autumn 1 – Computer systems and networks – Connecting computers Autumn 2 – Creating media 1 – Animation Spring 1 – Programming A – Sequence in music Spring 2 – Data and information – Branching data bases Summer 1 – Creating Media 2 – Desktop publishing Summer 2 – Programming B – Events and actions	Autumn 1 – Computing systems and networks – The Internet Autumn 2 – Creating Media 1 – Audio Editing Spring 1 – Programming A – Repetition in Shapes Spring 2 – Data and information – Data Logging Summer 1 – Creating Media 2 – Photo Editing Summer 2 – Programming B – Repetition in games
Autumn 1 Computing and networks	Autumn 1 – Computer systems and networks – Connecting computers <ul style="list-style-type: none"> • Explain that digital devices accept inputs • Explain that digital devices produce outputs • Follow a process • Classify input and output devices • Design a digital device • Model a simple process • Explain how I use digital devices for different activities • Recognise similarities between using digital devices and non-digital tools • Suggest differences between using digital devices and non-digital tools • Discuss why we need a network switch • Explain how messages are passed through multiple connections • Recognise different connections • Demonstrate how information can be passed between devices • Explain the role of a switch, server, and wireless access point in a network • Recognise that a computer network is made up of a number of devices • Identify how devices in a network are connected with one another • Identify networked devices around me • Identify the benefits of computer networks 	Autumn 1 – Computing systems and networks – The Internet <ul style="list-style-type: none"> • Demonstrate how information is shared across the internet • Describe the internet as a network of networks • Discuss why a network needs protecting • Describe the different networked devices and how they connect • Explain how the internet allows us to view the World Wide Web • Recognise that the World Wide Web is the part of the internet that contains websites and web pages • Describe how to access websites on the WWW • Describe where websites are stored when uploaded to the WWW • Explain the types of media that can be shared on the World Wide Web (WWW) • Create media which can be found on website • Explain that new content can be created online • Recognise that I can add content to the WWW • Explain that there are rules to protect content • Explain that websites and their content are created by people • Suggest who owns the content on websites • Explain that not everything on the World Wide Web is true. • Explain why I need to think carefully before I share or reshare content • Explain why some information I find online may not be honest, accurate, or legal.
Autumn 2 Creating Media 1	Autumn 2 – Creating media 1 – Animation <ul style="list-style-type: none"> • Create an effective flip book-style animation • Draw a sequence of pictures • Explain how an animation/flip book works • Create an effective stop frame animation • Explain why little changes are needed for each frame • Predict what an animation will look like • Break down a story into settings, characters and events • Create a storyboard • Describe an animation that is achievable on screen • Evaluate the quality of my animation • Review a sequence of frames to check my work • Use onion skinning to help me make small changes between frames • Evaluate another learner's animation • Explain ways to make my animation better • Improve my animation based on feedback • Add other media to my animation • Evaluate my final film • Explain why I added other media to my animation 	Autumn 2 – Creating Media 1 – Audio Editing <ul style="list-style-type: none"> • Identify digital devices that can record sound and play it back • Identify the inputs and outputs required to play audio or record sound • Recognise the range of sounds that can be recorded • Discuss what other people include when recording sound for a podcast • Suggest how to improve my recording • Use a device to record audio and play back sound • Discuss why it is useful to be able to save digital recordings • Plan and write the content for a podcast • Save a digital recording as a file • Discuss ways in which audio recordings can be altered • Edit sections of an audio recording • Open a digital recording from a file • Choose suitable sounds to include in a podcast • Discuss sounds that other people combine • Use editing tools to arrange sections of audio • Discuss the features of a digital recording I like • Explain that digital recordings need to be exported to share them • suggest improvements to a digital recording

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<p>Spring 1 Programming A</p>	<p>Spring 1 - Programming A – Sequence in music</p> <ul style="list-style-type: none"> • Explain that objects in Scratch have attributes (linked to) • Identify the objects in a Scratch project (sprites, backdrops) • Recognise that commands in Scratch are represented as blocks • Choose a word which describes an on-screen action for my design • Create a program following a design • Identify that each sprite is controlled by the commands I choose • Create a sequence of connected commands • Explain that the objects in my project will respond exactly to the code • Start a program in different ways • Combine sound commands • Explain what a sequence is • Order notes into a sequence • Build a sequence of commands • Decide the actions for each sprite in a program • Make design choices for my artwork • Identify and name the objects I will need for a project • Implement my algorithm as code • Relate a task description to a design 	<p>Spring 1 – Programming A – Repetition in Shapes</p> <ul style="list-style-type: none"> • Create a code snippet for a given purpose • Explain the effect of changing a value of a command • Program a computer by typing commands • Test my algorithm in a text-based language • Use a template to create a design for my program • Write an algorithm to produce a given outcome • Identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves • Identify patterns in a sequence, eg 'step 3 times' means the same as 'step, step, step' • Use a count-controlled loop to produce a given outcome • Choose which values to change in a loop • Identify the effect of changing the number of times a task is repeated • Predict the outcome of a program containing a count-controlled loop • Explain that a computer can repeatedly call a procedure • Identify 'chunks' of actions in the real world • Use a procedure in a program • Design a program that includes count-controlled loops • Develop my program by debugging it • Make use of my design to write a program
<p>Spring 2 Data and information</p>	<p>Spring 2 – Data and information – Branching data bases</p> <ul style="list-style-type: none"> • Create two groups of objects separated by one attribute • Investigate questions with yes/no answers • Make up a yes/no question about a collection of objects • Arrange objects into a tree structure • Create a group of objects within an existing group • Select an attribute to separate objects • Group objects using my own yes/no questions • Prove my branching database works • Select objects to arrange in a branching database • Create questions and apply them to a tree structure • Select a theme and choose a variety of objects • Use my branching database to answer questions • Compare two branching database structures • Create yes/no questions using given attributes • Explain that questions need to be ordered carefully to split objects into similarly sized groups • Compare two ways of presenting information • Explain what a branching database tells me • Explain what a pictogram tells me 	<p>Spring 2 – Data and information – Data Logging</p> <ul style="list-style-type: none"> • Choose a data set to answer a given question • Identify data that can be gathered over time • Suggest questions that can be answered using a given data set • Explain that sensors are input devices • Identify that data from sensors can be recorded • Use data from a sensor to answer a given question • Identify a suitable place to collect data • Identify the intervals used to collect data • Talk about the data that I have captured • Import a data set • Use a computer program to sort data • Use a computer to view data in different ways • Plan how to collect data using a data logger • Propose a question that can be answered using logged data • Use a data logger to collect data • Draw conclusions from the data that I have collected • Explain the benefits of using a data logger • Interpret data that has been collected using a data logger



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<p>Summer 1 Creating Media 2</p>	<p>Summer 1 - Creating Media 2 – Desktop publishing</p> <ul style="list-style-type: none"> • Create two groups of objects separated by one attribute • Investigate questions with yes/no answers • Make up a yes/no question about a collection of objects • Arrange objects into a tree structure • Create a group of objects within an existing group • Select an attribute to separate objects • Group objects using my own yes/no questions • Prove my branching database works • Select objects to arrange in a branching database • Create questions and apply them to a tree structure • Select a theme and choose a variety of objects • Use my branching database to answer questions • Compare two branching database structures • Create yes/no questions using given attributes • Explain that questions need to be ordered carefully to split objects into similarly sized groups • Compare two ways of presenting information • Explain what a branching database tells me • Explain what a pictogram tells me 	<p>Summer 1 – Creating Media 2 – Photo Editing</p> <ul style="list-style-type: none"> • Explain the effect that editing can have on an image • Explore how images can be changed in real life • Identify changes that we can make to an image • Change the composition of an image by selecting parts of it • Consider why someone might want to change the composition of an image • Explain what has changed in an edited image • Choose effects to make my image fit a scenario • Explain why my choices fit a scenario • Talk about changes made to images • Choose appropriate tools to retouch an image • Give examples of positive and negative effects that retouching can have on an image • Identify how an image has been retouched • Combine parts of images to create new images • Sort images into 'fake' or 'real' and explain my choices • Talk about fake images around me • Compare the original image with my completed publication • Consider the effect of adding other elements to my work • Evaluate the impact of my publication on others through feedback
<p>Summer 2 Programming B</p>	<p>Summer 2 – Programming B - Events and actions</p> <ul style="list-style-type: none"> • Create two groups of objects separated by one attribute • Investigate questions with yes/no answers • Make up a yes/no question about a collection of objects • Arrange objects into a tree structure • Create a group of objects within an existing group • Select an attribute to separate objects • Group objects using my own yes/no questions • Prove my branching database works • Select objects to arrange in a branching database • Create questions and apply them to a tree structure • Select a theme and choose a variety of objects • Use my branching database to answer questions • Compare two branching database structures • Create yes/no questions using given attributes • Explain that questions need to be ordered carefully to split objects into similarly sized groups • Compare two ways of presenting information • Explain what a branching database tells me • Explain what a pictogram tells me 	<p>Summer 2 – Programming B – Repetition in games</p> <ul style="list-style-type: none"> • List an everyday task as a set of instructions including repetition • Modify a snippet of code to create a given outcome • Predict the outcome of a snippet of code • Choose when to use a count-controlled and an infinite loop • Modify loops to produce a given outcome • Recognise that some programming languages enable more than one process to be run at once • Choose which action will be repeated for each object • Evaluate the effectiveness of the repeated sequences used in my program • Explain what the outcome of the repeated action should be • Explain the effect of my changes • Identify which parts of a loop can be changed • Re-use existing code snippets on new sprites • Develop my own design explaining what my project will do • Evaluate the use of repetition in a project • Select key parts of a given project to use in my own design • Build a program that follows my design • Evaluate the steps I followed when building my project • Refine the algorithm in my design

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	<u>Year 5 (Teach Computing Curriculum)</u>	<u>Year 6 (Teach Computing Curriculum)</u>
<u>Topics</u>	Autumn 1 – Computer systems and networks – Sharing information Autumn 2 – Creating media 1 – Video editing Spring 1 - Programming A – Selection in physical computing Spring 2 – Data and information – Flat-file databases Summer 1 - Creating Media 2 – Vector drawing Summer 2 – Programming B - Selection in quizzes	Autumn 1 – Computer systems and networks – Communication Autumn 2 – Creating media 1 – Web page creation Spring 1 - Programming A – Variables in games Spring 2 – Data and information – Spreadsheets Summer 1 - Creating Media 2 – 3D Modelling Summer 2 – Programming B - Sensing
Autumn 1 Computing and networks	Autumn 1 – Computer systems and networks – Sharing information <ul style="list-style-type: none"> • Describe that a computer system features inputs, processes, and outputs • Explain that computer systems communicate with other devices • Explain that systems are built using a number of parts • Explain the benefits of a given computer system • Identify tasks that are managed by computer systems • Identify the human elements of a computer system • Explain that data is transferred over networks in packets • Explain that networked digital devices have unique addresses • Recognise that data is transferred using agreed methods • Explain that the internet allows different media to be shared • Recognise that connected digital devices can allow us to access shared files stored online • Send information over the internet in different ways • Compare working online with working offline • Make thoughtful suggestions on my group's work • Suggest strategies to ensure successful group work • Explain how the internet enables effective collaboration • Identify different ways of working together online • Recognise that working together on the internet can be public or private 	Autumn 1 – Computer systems and networks – Communication <ul style="list-style-type: none"> • Compare results from different search engines • Complete a web search to find specific information • Refine my search • Explain why we need tools to find things online • Recognise the role of web crawlers in creating an index • Relate a search term to the search engine's index • Explain that a search engine follows rules to rank relevant pages • Explain that search results are ordered • Suggest some of the criteria that a search engine checks to decide on the order of results • Describe some of the ways that search results can be influenced • Explain how search engines make money • Recognise some of the limitations of search engines • Choose methods of communication to suit particular purposes • Explain the different ways in which people communicate • Identify that there are a variety of ways of communicating over the internet • Compare different methods of communicating on the internet • Decide when I should and should not share • Explain that communication on the internet may not be private
Autumn 2 Creating Media 1	Autumn 2 – Creating media 1 – Video editing <ul style="list-style-type: none"> • Explain that a video can include both visual and audio media • Explain the benefits of adding audio to a video • Plan a video project using a storyboard • Choose the most suitable digital device for recording my project • Identify and name digital devices that can record video and sound • Locate and identify the working features of a digital device that can record video • Demonstrate suitable methods of using a digital device to capture my video • Demonstrate the safe use and handling of devices • Select a suitable device and software to capture my video • Explain why lighting and angle are important in creating an effective video • List some of the features of an effective video • Record a video that demonstrates some of the features of an effective video • Explain how to improve a video by reshooting and editing • Select the correct tools to make edits to my video • Store, retrieve, and export my recording to a computer • Evaluate my video and share my opinions • Make edits to my video and improve the final outcome • Recognise that my choices when making a video will impact on the quality of the final outcome 	Autumn 2 – Creating media 1 – Web page creation <ul style="list-style-type: none"> • Discuss the different types of media used on websites • Explore a website • Know that websites are written in HTML • Draw a web page layout that suits my purpose • Recognise the common features of a web page • Suggest media to include on my page • Describe what is meant by the term 'fair use' • Find copyright-free images • Say why I should use copyright-free images • Add content to my own web page • Evaluate what my web page looks like on different devices and suggest/make edits. • Preview what my web page looks like • Describe why navigation paths are useful • Explain what a navigation path is • Make multiple web pages and link them using hyperlinks • Create hyperlinks to link to other people's work • Evaluate the user experience of a website • Explain the implication of linking to content owned by others

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<p>Spring 1 Programming A</p>	<p>Spring 1 - Programming A – Selection in physical computing</p> <ul style="list-style-type: none"> • Build a simple circuit to connect a microcontroller to a computer • Explain why I used an infinite loop • Program a microcontroller to light an LED • Connect more than one output device to a microcontroller • Decide which output devices I control with a count-controlled loop • Design sequences for given output devices • Experiment with a 'do until' loop • Explain that a condition is something that can either be true or false (eg whether a value is more than 10, or whether a button has been pressed) • Program a microcontroller to respond to an input • Explain that a condition being met can start an action • Identify a condition and an action in my project • Use selection (an 'if... then...' statement) to direct the flow of a program • Create a detailed drawing of my project • Describe what my project will do (the task) • Identify a condition to start an action (real world) • Test and debug my project • Use selection to produce an intended outcome • Write an algorithm to control lights and a motor 	<p>Spring 1 - Programming A – Variables in games</p> <ul style="list-style-type: none"> • Explain that the way that a variable changes can be defined • Identify examples of information that is variable • Identify that variables can hold numbers or letters • Explain that a variable has a name and a value • Identify a program variable as a placeholder in memory for a single value • Recognise that the value of a variable can be changed • Decide where in a program to change a variable • Make use of an event in a program to set a variable • Recognise that the value of a variable can be used by a program • Choose the artwork for my project • Create algorithms for my project • Explain my design choices • Choose a name that identifies the role of a variable • Create the artwork for my project • Test the code that I have written • Extend my game further using more variables • Identify ways that my game could be improved • Share my game with others
<p>Spring 2 Data and information</p>	<p>Spring 2 – Data and information – Flat-file databases</p> <ul style="list-style-type: none"> • Create multiple questions about the same field • Explain how information can be recorded • Order, sort, and group my data cards • Choose which field to sort data by to answer a given question • Explain what a 'field' and a 'record' is in a database • Navigate a flat-file database to compare different views of information • Combine grouping and sorting to answer more specific questions • Explain how information can be grouped • Group information to answer questions • Choose multiple criteria to answer a given question • Choose which field and value are required to answer a given question • Outline how 'AND' and 'OR' can be used to refine data selection • Explain the benefits of using a computer to create graphs • Refine a chart by selecting a particular filter • Select an appropriate chart to visually compare data • Ask questions that will need more than one field to answer • Present my findings to a group • Refine a search in a real-world context 	<p>Spring 2 – Data and information – Spreadsheets</p> <ul style="list-style-type: none"> • Answer questions from an existing data set • Ask simple relevant questions which can be answered using data • Explain the relevance of data headings • Apply an appropriate number format to a cell • Build a data set in a spreadsheet application • Explain what an item of data is • Construct a formula in a spreadsheet • Explain the relevance of a cell's data type • Identify that changing inputs changes outputs • Apply a formula to multiple cells by duplicating it • Create a formula which includes a range of cells • Recognise that data can be calculated using different operations • Apply a formula to calculate the data I need to answer questions • Explain why data should be organised • Use a spreadsheet to answer questions • Produce a graph • Suggest when to use a table or graph • Use a graph to show the answer to questions

Progression of Skills in Computing at Mile Cross Primary School

<p>Summer 1 Creating Media 2</p>	<p>Summer 1 - Creating Media 2 – Vector drawing</p> <ul style="list-style-type: none"> • Discuss how a vector drawing is different from paper-based drawings • Identify the main drawing tools • Recognise that vector drawings are made using shapes • Explain that each element added to a vector drawing is an object • Identify the shapes used to make a vector drawing • Move, resize, and rotate objects I have duplicated • Explain how alignment grids and resize handles can be used to improve consistency • Modify objects to create different effects • Use the zoom tool to help me add detail to my drawings • Change the order of layers in a vector drawing • Identify that each added object creates a new layer in the drawing • Identify which objects are in the front layer or in the back layer of a drawing • Copy part of a drawing by duplicating several objects • Group to create a single object • Reuse a group of objects to further develop my vector drawing • Apply what I have learned about vector drawings • Suggest improvements to a vector drawing • Create alternatives to vector drawings 	<p>Summer 1 - Creating Media 2 – 3D Modelling</p> <ul style="list-style-type: none"> • Discuss the similarities and differences between 2D and 3D shapes • Explain why we might represent 3D objects on a computer • Select, move, and delete a digital 3D shape • Change the colour of a 3D object • Identify how graphical objects can be modified • Resize a 3D object • Position 3D objects in relation to each other • Rotate a 3D object • Select and duplicate multiple 3D objects • Create digital 3D objects of an appropriate size • Group a digital 3D shape and a placeholder to create a hole in an object • Identify the 3D shapes needed to create a model of a real-world object • Choose which 3D objects I need to construct my model • Modify multiple 3D objects • Plan my 3D model • Decide how my model can be improved • Evaluate my model against a given criterion • Modify my model to improve it
<p>Summer 2 Programming B</p>	<p>Summer 2 – Programming B - Selection in quizzes</p> <ul style="list-style-type: none"> • Identify conditions in a program • Modify a condition in a program • Recall how conditions are used in selection • Create a program with different outcomes using selection • Identify the condition and outcomes in an if...then... else statement • Use selection in an infinite loop to check a condition • Design the flow of a program which contains 'if... then... else...' • Explain that program flow can branch according to a condition • Show that a condition can direct program flow in one of two ways • Identify the outcome of user input in an algorithm • Outline a given task • Use a design format to outline my project • Implement my algorithm to create the first section of my program • Share my program with others • Test my program • Extend my program further • Identify ways the program could be improved • Identify what setup code my project needs 	<p>Summer 2 – Programming B - Sensing</p> <ul style="list-style-type: none"> • Apply my knowledge of programming to a new environment • Test my program on an emulator • Transfer my program to a controllable device • Determine the flow of a program using selection • Identify examples of conditions in the real world • Use a variable in an if... then... else... statement to select the flow of a program • Experiment with different physical inputs • Explain that if you read a variable, the value remains • Use a condition to change a variable • Explain the importance of the order of conditions in else if statements • Modify a program to achieve a different outcome • Use an operand (e.g. <=>) in an if... then... statement • Decide what variables to include in a project • Design the algorithm for my project • Design the program flow for my project • Create a program based on my design • Test my program against my design • Use a range of approaches to find and fix bugs