SUBJECT: COMPUTING

KEY STAGE PHASE: KS1

MAPPLEWELL PRIMARY SCHOOL

LTP

CYCLE A				CYCLE B			
KEY CONCEPT	**LESSON**	**HCAT LEARNING OBJECTIVE**	**SUCCESS CRITERIA**	**KEY CONCEPT**	**LESSON**	**HCAT LEARNING OBJECTIVE**	**SUCCESS CRITERIA**
Computing systems and networks – Technology around us	Autumn 1	To know what technology is	- I can explain how these technology examples help us - I can explain technology as something that helps us - I can locate examples of technology in the classroom	Data and information – Grouping data	Autumn 1	To know how to label objects	- I can describe objects using labels - I can identify the label for a group of objects - I can match objects to groups
Computing systems and networks – Technology around us	Autumn 2	To know and identify a computer and its main parts	- I can name the main parts of a computer - I can switch on and log into a computer - I can use a mouse to click and drag	Data and information – Grouping data	Autumn 2	To know and identify that objects can be counted	- I can count a group of objects - I can count objects - I can group objects
Computing systems and networks – Technology around us	Autumn 3	To know how to use a mouse in different ways	- I can click and drag to make objects on a screen - I can use a mouse to create a picture - I can use a mouse to open a program	Data and information – Grouping data	Autumn 3	To know and describe objects in different ways	- I can describe an object - I can describe a property of an object - I can find objects with similar properties
Computing systems and networks – Technology around us	Autumn 4	To know how to use a keyboard to type on a computer	- I can save my work to a file - I can say what a keyboard is for - I can type my name on a computer	Data and information – Grouping data	Autumn 4	To know how to count objects with the same properties	- I can count how many objects share a property - I can group objects in more than one way - I can group similar objects

Computing systems and networks – Technology around us	Autumn 5	To know how a keyboard can edit text	- I can delete letters - I can open my work from a file - I can use the arrow keys to move the cursor	Data and information – Grouping data	Autumn 5	To know and compare groups of objects	- I can choose how to group objects - I can describe groups of objects - I can record how many objects are in a group
Computing systems and networks – Technology around us	Autumn 6	To create rules for using technology responsibly	- I can discuss how we benefit from these rules - I can give examples of some of these rules - I can identify rules to keep us safe and healthy when we are using technology in and beyond the home	Data and information – Grouping data	Autumn 6	To know how to answer questions about groups of objects	- I can compare groups of objects - I can decide how to group objects to answer a question - I can record and share what I have found
Computing systems and networks – IT around us	Autumn 7	To know and recognise the uses and features of information technology	- I can describe some uses of computers - I can identify examples of computers - I can identify that a computer is a part of IT	Data and information – Pictograms	Autumn 7	To know and recognise that we can count and compare objects using tally charts	- I can compare totals in a tally chart - I can record data in a tally chart - I can represent a tally count as a total
Computing systems and networks – IT around us	Autumn 8	To know how to identify the uses of information technology in the school	- I can identify examples of IT - I can identify that some IT can be used in more than one way - I can sort school IT by what it's used for	Data and information – Pictograms	Autumn 8	To know and recognise that objects can be represented as pictures	- I can enter data onto a computer - I can use a computer to view data in a different format - I can use pictograms to answer simple questions about objects
Computing systems and networks – IT around us	Autumn 9	To know and identify information technology beyond school	- I can find examples of information technology - I can sort IT by where it is found - I can talk about uses of information technology	Data and information – Pictograms	Autumn 9	To know how to create a pictogram	- I can explain what the pictogram shows - I can organise data in a tally chart - I can use a tally chart to create a pictogram

Computing systems and networks – IT around us	Autumn 10	To know and explain how information technology helps us	- I can demonstrate how IT devices work together - I can recognise common types of technology - I can say why we use IT	Data and information – Pictograms	Autumn 10	To know how to select objects by attribute and make comparisons	- I can answer 'more than'/'less than' and 'most/least' questions about an attribute - I can create a pictogram to arrange objects by an attribute - I can tally objects using a common attribute
Computing systems and networks – IT around us	Autumn 11	To know and explain how to use information technology safely	- I can list different uses of information technology - I can say how rules can help keep me safe - I can talk about different rules for using IT	Data and information – Pictograms	Autumn 11	To know how to recognise that people can be described by attributes	- I can choose a suitable attribute to compare people - I can collect the data I need - I can create a pictogram and draw conclusions from it
Computing systems and networks – IT around us	Autumn 12	To know and recognise that choices are made when using information technology	- I can explain the need to use IT in different ways - I can identify the choices that I make when using IT - I can use IT for different types of activities	Data and information – Pictograms	Autumn 12	To know and explain that we can present information using a computer	- I can give simple examples of why information should not be shared - I can share what I have found out using a computer - I can use a computer program to present information in different ways
Creating media – Digital painting	Spring 1	To know how to use a digital device to take a photograph	- I can explain what I did to capture a digital photo - I can recognise what devices can be used to take photographs - I can talk about how to take a photograph	Creating media – Digital writing	Spring 1	To know how to use a computer to write	- I can identify and find keys on a keyboard - I can open a word processor - I can recognise keys on a keyboard
Creating media – Digital painting	Spring 2	To know and describe what different freehand tools do	- I can draw lines on a screen and explain which tools I used	Creating media – Digital writing	Spring 2	To know how to add and remove text on a computer	- I can enter text into a computer - I can use backspace to remove text

			- I can make marks on a screen and explain which tools I used - I can use the paint tools to draw a picture				- I can use letter, number, and space keys
Creating media – Digital painting	Spring 3	To know what the shape tool and the line tools	- I can choose appropriate shapes - I can create a picture in the style of an artist - I can make appropriate colour choices	Creating media – Digital writing	Spring 3	To know and identify that the look of text can be changed on a computer	- I can explain what the keys that I have learnt about already do - I can identify the toolbar and use bold, italic, and underline - I can type capital letters
Creating media – Digital painting	Spring 4	To know and explain why I chose the tools I used	- I can choose appropriate paint tools and colours to recreate the work of an artist - I can say which tools were helpful and why - I know that different paint tools do different jobs	Creating media – Digital writing	Spring 4	To know how to make careful choices when changing text	- I can change the font - I can select all of the text by clicking and dragging - I can select a word by double-clicking
Creating media – Digital painting	Spring 5	To know how to use a computer on my own to paint a picture	- I can change the colour and brush sizes - I can make dots of colour on the page - I can use dots of colour to create a picture in the style of an artist on my own	Creating media – Digital writing	Spring 5	To know and explain why I used the tools that I chose	- I can decide if my changes have improved my writing - I can say what tool I used to change the text - I can use 'undo' to remove changes
Creating media – Digital painting	Spring 6	To know and compare painting a picture on a computer and on paper	- I can explain that pictures can be made in lots of different ways - I can say whether I prefer painting using a computer or using paper	Creating media – Digital writing	Spring 6	To know and compare typing on a computer to writing on paper	- I can explain the differences between typing and writing - I can make changes to text on a computer - I can say why I prefer typing or writing

			- I can spot the differences between painting on a computer and on paper				
Creating media – Digital photography	Spring 7	To know how to use a digital device to take a photograph	- I can explain what I did to capture a digital photo - I can recognise what devices can be used to take photographs - I can talk about how to take a photograph	Creating media – Making music	Spring 7	To know and say how music can make us feel	- I can describe how music makes me feel, e.g. happy or sad - I can identify simple differences in pieces of music - I can listen with concentration to a range of music (links to the Music curriculum)
Creating media – Digital photography	Spring 8	To know to make choices when taking a photograph	- I can explain the process of taking a good photograph - I can explain why a photo looks better in portrait or landscape format - I can take photos in both landscape and portrait format	Creating media – Making music	Spring 8	To identify and know that there are patterns in music	- I can create a rhythm pattern - I can explain that music is created and played by humans - I can play an instrument following a rhythm pattern
Creating media – Digital photography	Spring 9	To know and describe what makes a good photograph	- I can discuss how to take a good photograph - I can identify what is wrong with a photograph - I can improve a photograph by retaking it	Creating media – Making music	Spring 9	To know how music is made from a series of notes	- I can identify that music is a sequence of notes - I can refine my musical pattern on a computer - I can use a computer to create a musical pattern using three notes
Creating media – Digital photography	Spring 10	To know and decide how photographs can be improved	- I can experiment with different light sources - I can explain why a picture may be unclear - I can explore the effect that light has on a photo	Creating media – Making music	Spring 10	To know how music is made from a series of notes	- I can identify that music is a sequence of notes - I can refine my musical pattern on a computer - I can use a computer to create a musical pattern using three notes

Creating media – Digital photography	Spring 11	To know how to use tools to change an image	- I can explain my choices - I can recognise that images can be changed - I can use a tool to achieve a desired effect	Creating media – Making music	Spring 11	To know how to create music for a purpose	- I can describe an animal using sounds - I can explain my choices - I can save my work
Creating media – Digital photography	Spring 12	To know and recognise that photos can be changed	- I can apply a range of photography skills to capture a photo - I can identify which photos are real and which have been changed - I can recognise which photos have been changed	Creating media – Making music	Spring 12	To know how to review and refine our computer work	- I can explain how I made my work better - I can listen to music and describe how it makes me feel - I can reopen my work
Programming A – Moving a robot	Summer 1	To know and explain what a given command will do	- I can match a command to an outcome - I can predict the outcome of a command on a device - I can run a command on a device	Programming B – Introduction to animation	Summer 1	To know how to choose a command for a given purpose	- I can compare different programming tools - I can find which commands to move a sprite - I can use commands to move a sprite
Programming A – Moving a robot	Summer 2	To know how to act out a given word	- I can follow an instruction - I can give directions - I can recall words that can be acted out	Programming B – Introduction to animation	Summer 2	To know and show that a series of commands can be joined together	- I can run my program - I can use a Start block in a program - I can use more than one block by joining them together
Programming A – Moving a robot	Summer 3	To know how to combine forwards and backwards commands to make a sequence	- I can compare forwards and backwards movements - I can predict the outcome of a sequence involving forwards and backwards commands - I can start a sequence from the same place	Programming B – Introduction to animation	Summer 3	To know and identify the effect of changing a value	- I can change the value - I can find blocks that have numbers - I can say what happens when I change a value

Programming A – Moving a robot	Summer 4	To know how to combine four direction commands to make sequences	- I can compare left and right turns - I can experiment with turn and move commands to move a robot - I can predict the outcome of a sequence involving up to four commands	Programming B – Introduction to animation	Summer 4	To know and explain that each sprite has its own instructions	- I can add blocks to each of my sprites - I can delete a sprite - I can show that a project can include more than one sprite
Programming A – Moving a robot	Summer 5	To plan a simple program	- I can choose the order of commands in a sequence - I can debug my program - I can explain what my program should do	Programming B – Introduction to animation	Summer 5	To know how to design the parts of a project	- I can choose appropriate artwork for my project - I can create an algorithm for each sprite - I can decide how each sprite will move
Programming A – Moving a robot	Summer 6	To know how to find more than one solution to a problem	- I can identify several possible solutions - I can plan two programs - I can use two different programs to get to the same place	Programming B – Introduction to animation	Summer 6	To know how to use my algorithm to create a program	- I can add programming blocks based on my algorithm - I can test the programs I have created - I can use sprites that match my design
Programming A – Robot algorithms	Summer 7	To know how describe a series of instructions as a sequence	- I can choose a series of words that can be enacted as a sequence - I can follow instructions given by someone else - I can give clear and unambiguous instructions	Programming B – An introduction to quizzes	Summer 7	To know how to explain that a sequence of commands has a start	- I can identify that a program needs to be started - I can identify the start of a sequence - I can show how to run my program
Programming A – Robot algorithms	Summer 8	To know and explain what happens when we change the order of instructions	- I can create different algorithms for a range of sequences (using the same commands) - I can show the difference in outcomes between two	Programming B – An introduction to quizzes	Summer 8	To know and explain that a sequence of commands has an outcome	- I can change the outcome of a sequence of commands - I can match two sequences with the same outcome - I can predict the outcome of a sequence of commands

			sequences that consist of the same commands - I can use an algorithm to program a sequence on a floor robot				
Programming A – Robot algorithms	Summer 9	To know how to use logical reasoning to predict the outcome of a program (series of commands)	- I can compare my prediction to the program outcome - I can follow a sequence - I can predict the outcome of a sequence	Programming B – An introduction to quizzes	Summer 9	To know how to create a program using a given design	- I can build the sequences of blocks I need - I can decide which blocks to use to meet the design - I can work out the actions of a sprite in an algorithm
Programming A – Robot algorithms	Summer 10	To know and explain that programming projects can have code and artwork	- I can explain the choices I made for my mat design - I can identify different routes around my mat - I can test my mat to make sure that it is usable	Programming B – An introduction to quizzes	Summer 10	To know how to change a given design	- I can choose backgrounds for the design - I can choose characters for the design - I can create a program based on the new design
Programming A – Robot algorithms	Summer 11	To know how to design an algorithm	- I can create an algorithm to meet my goal - I can explain what my algorithm should achieve - I can use my algorithm to create a program	Programming B – An introduction to quizzes	Summer 11	To know and create a program using my own design	- I can build sequences of blocks to match my design - I can choose the images for my own design - I can create an algorithm
Programming A – Robot algorithms	Summer 12	To know how to create and debug a program that I have written	- I can plan algorithms for different parts of a task - I can put together the different parts of my program - I can test and debug each part of the program	Programming B – An introduction to quizzes	Summer 12	To know and decide how my project can be improved	- I can compare my project to my design - I can debug my program - I can improve my project by adding features

SUBJECT: COMPUTING

KEY STAGE PHASE: LKS2

MAPPLEWELL PRIMARY SCHOOL

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CYCLE A				CYCLE B			
KEY CONCEPT	**LESSON**	**HCAT LEARNING OBJECTIVE**	**SUCCESS CRITERIA**	**KEY CONCEPT**	**LESSON**	**HCAT LEARNING OBJECTIVE**	**SUCCESS CRITERIA**
Computing systems and networks – Connecting computers	Autumn 1	To know and recognise how digital devices can change the way we work	- I can explain that digital devices accept inputs - I can explain that digital devices produce outputs - I can follow a process	Data and information – Branching databases	Autumn 1	To know how to create questions with yes/no answers	- I can create two groups of objects separated by one attribute - I can investigate questions with yes/no answers - I can make up a yes/no question about a collection of objects
Computing systems and networks – Connecting computers	Autumn 2	To know and explain how a computer network can be used to share information	- I can classify input and output devices - I can describe a simple process - I can design a digital device	Data and information – Branching databases	Autumn 2	To know and identify the object attributes needed to collect relevant data	- I can arrange objects into a tree structure - I can create a group of objects within an existing group - I can select an attribute to separate objects into groups
Computing systems and networks – Connecting computers	Autumn 3	To know how to explore how digital devices can be connected	- I can explain how I use digital devices for different activities - I can recognise similarities between using digital devices and non-digital tools - I can suggest differences between using digital devices and non-digital tools	Data and information – Branching databases	Autumn 3	To know how to create a branching database	- I can group objects using my own yes/no questions - I can prove my branching database works - I can select objects to arrange in a branching database

Computing systems and networks – Connecting computers	Autumn 4	To know to recognise the physical components of a network	- I can discuss why we need a network switch - I can explain how messages are passed through multiple connections - I can recognise different connections	Data and information – Branching databases	Autumn 4	To know and explain why it is helpful for a database to be well structured	- I can compare two branching database structures - I can create yes/no questions using given attributes - I can explain that questions need to be ordered carefully to split objects into similarly sized groups
Computing systems and networks – Connecting computers	Autumn 5	To know how to explore how digital devices can be connected	- I can demonstrate how information can be passed between devices - I can explain the role of a switch, server, and wireless access point in a network - I can recognise that a computer network is made up of a number of devices	Data and information – Branching databases	Autumn 5	To know how to identify objects using a branching database	- I can create questions and apply them to a tree structure - I can select a theme and choose a variety of objects - I can use my branching database to answer questions
Computing systems and networks – Connecting computers	Autumn 6	To know to recognise the physical components of a network	- I can identify how devices in a network are connected together - I can identify networked devices around me - I can identify the benefits of computer networks	Data and information – Branching databases	Autumn 6	To know and compare the information shown in a pictogram with a branching database	- I can compare two ways of presenting information - I can explain what a branching database tells me - I can explain what a pictogram tells me
Computing systems and networks – The Internet	Autumn 7	To know and describe how networks physically connect to other networks	- I can demonstrate how information is shared across the internet - I can describe the internet as a network of networks - I can discuss why a network needs protecting	Data and information – Data logging	Autumn 7	To know how to explain that data gathered over time can be used to answer questions	- I can choose a data set to answer a given question - I can identify data that can be gathered over time - I can suggest questions that can be answered using a given data set

Computing systems and networks – The Internet	Autumn 8	To know and recognise how networked devices make up the internet	- I can describe networked devices and how they connect - I can explain that the internet is used to provide many services - I can recognise that the World Wide Web contains websites and web pages	Data and information – Data logging	Autumn 8	To know how to use a digital device to collect data automatically	- I can explain that sensors are input devices - I can identify that data from sensors can be recorded - I can use data from a sensor to answer a given question
Computing systems and networks – The Internet	Autumn 9	To know and outline how websites can be shared via the World Wide Web (WWW)	- I can describe how to access websites on the WWW - I can describe where websites are stored when uploaded to the WWW - I can explain the types of media that can be shared on the WWW	Data and information – Data logging	Autumn 9	To know and explain that a data logger collects 'data points' from sensors over time	- I can identify a suitable place to collect data - I can identify the intervals used to collect data - I can talk about the data that I have captured
Computing systems and networks – The Internet	Autumn 10	To know and describe how content can be added and accessed on the World Wide Web (WWW)	- I can explain that internet services can be used to create content online - I can explain what media can be found on websites - I can recognise that I can add content to the WWW	Data and information – Data logging	Autumn 10	To know how to use data collected over a long duration to find information	- I can import a data set - I can use a computer program to sort data - I can use a computer to view data in different ways
Computing systems and networks – The Internet	Autumn 11	To know and recognise how the content of the WWW is created by people	- I can explain that there are rules to protect content - I can explain that websites and their content are created by people - I can suggest who owns the content on websites	Data and information – Data logging	Autumn 11	To know and identify the data needed to answer questions	- I can plan how to collect data using a data logger - I can propose a question that can be answered using logged data - I can use a data logger to collect data

Computing systems and networks – The Internet	Autumn 12	To know how to evaluate the consequences of unreliable content	- I can explain that not everything on the World Wide Web is true - I can explain why I need to think carefully before I share or reshare content - I can explain why some information I find online may not be honest, accurate, or legal	Data and information – Data logging	Autumn 12	To know to use collected data to answer questions	- I can draw conclusions from the data that I have collected - I can explain the benefits of using a data logger - I can interpret data that has been collected using a data logger
Creating media – Animation	Spring 1	To know and explain that animation is a sequence of drawings or photographs	- I can create an effective flip book—style animation - I can draw a sequence of pictures - I can explain how an animation/flip book works	Creating media – Desktop publishing	Spring 1	To know and recognise how text and images convey information	- I can explain the difference between text and images - I can identify the advantages and disadvantages of using text and images - I can recognise that text and images can communicate messages clearly
Creating media – Animation	Spring 2	To know to relate animated movement with a sequence of images	- I can create an effective stop-frame animation - I can explain why little changes are needed for each frame - I can predict what an animation will look like	Creating media – Desktop publishing	Spring 2	To know and recognise that text and layout can be edited	- I can change font style, size, and colours for a given purpose - I can edit text - I can explain that text can be changed to communicate more clearly
Creating media – Animation	Spring 3	To know and plan an animation	- I can break down a story into settings, characters and events - I can create a storyboard - I can describe an animation that is achievable on screen	Creating media – Desktop publishing	Spring 3	To know and choose appropriate page settings	- I can create a template for a particular purpose - I can define the term 'page orientation' - I can recognise placeholders and say why they are important

Creating media – Animation	Spring 4	To know and identify the need to work consistently and carefully	- I can evaluate the quality of my animation - I can review a sequence of frames to check my work - I can use onion skinning to help me make small changes between frames	Creating media – Desktop publishing	Spring 4	To know how to add content to a desktop publishing publication	- I can choose the best locations for my content - I can make changes to content after I've added it - I can paste text and images to create a magazine cover
Creating media – Animation	Spring 5	To know how to review and improve an animation	- I can evaluate another learner's animation - I can explain ways to make my animation better - I can improve my animation based on feedback	Creating media – Desktop publishing	Spring 5	To know and consider how different layouts can suit different purposes	- I can choose a suitable layout for a given purpose - I can identify different layouts - I can match a layout to a purpose
Creating media – Animation	Spring 6	To know and evaluate the impact of adding other media to an animation	- I can add other media to my animation - I can evaluate my final film - I can explain why I added other media to my animation	Creating media – Desktop publishing	Spring 6	To know and consider the benefits of desktop publishing	- I can compare work made on desktop publishing to work created by hand - I can identify the uses of desktop publishing in the real world - I can say why desktop publishing might be helpful
Creating media – Audio editing	Spring 7	To know and identify that sound can be digitally recorded	- I can identify digital devices that can record sound and play it back - I can identify the inputs and outputs required to play audio or record sound - I can recognise the range of sounds that can be recorded	Creating media – Photo editing	Spring 7	To know and explain that digital images can be changed	- I can explain the effect that editing can have on an image - I can explore how images can be changed in real life - I can identify changes that we can make to an image
Creating media – Audio editing	Spring 8	To know how to use a digital device to record sound	- I can discuss what other people include when recording sound for a podcast	Creating media – Photo editing	Spring 8	To know how to change the composition of an image	- I can change the composition of an image by selecting parts of it

			- I can suggest how to improve my recording - I can use a device to record audio and play back sound				- I can consider why someone might want to change the composition of an image - I can explain what has changed in an edited image
Creating media – Audio editing	Spring 9	To know and explain that a digital recording is stored as a file	- I can discuss why it is useful to be able to save digital recordings - I can plan and write the content for a podcast - I can save a digital recording as a file	Creating media – Photo editing	Spring 9	To know and describe how images can be changed for different uses	- I can choose effects to make my image fit a scenario - I can explain why my choices fit a scenario - I can talk about changes made to images
Creating media – Audio editing	Spring 10	To know and explain that audio can be changed through editing	- I can discuss ways in which audio recordings can be altered - I can edit sections of of an audio recording - I can open a digital recording from a file	Creating media – Photo editing	Spring 10	To know how to make good choices when selecting different tools	- I can choose appropriate tools to retouch an image - I can give examples of positive and negative effects that retouching can have on an image - I can identify how an image has been retouched
Creating media – Audio editing	Spring 11	To know how to show that different types of audio can be combined and played together	- I can choose suitable sounds to include in a podcast - I can discuss sounds that other people combine - I can use editing tools to arrange sections of audio	Creating media – Photo editing	Spring 11	To know and recognise that not all images are real	- I can combine parts of images to create new images - I can sort images into 'fake' or 'real' and explain my choices - I can talk about fake images around me
Creating media – Audio editing	Spring 12	To know how evaluate editing choices made	- I can discuss the features of a digital recording I like - I can explain that digital recordings need to be exported to share them	Creating media – Photo editing	Spring 12	To know and evaluate how changes can improve an image	- I can compare the original image with my completed publication - I can consider the effect of adding other elements to my work

			- I can suggest improvements to a digital recording				- I can evaluate the impact of my publication on others through feedback
Programming A – Sequence in music	Summer 1	To know and explore a new programming environment	- I can explain that objects in Scratch have attributes (linked to) - I can identify the objects in a Scratch project (sprites, backdrops) - I can recognise that commands in Scratch are represented as blocks	Programming B – Events and actions	Summer 1	To know and explain how a sprite moves in an existing project	- I can choose which keys to use for actions and explain my choices - I can explain the relationship between an event and an action - I can identify a way to improve a program
Programming A – Sequence in music	Summer 2	To know how to identify that commands have an outcome	- I can choose a word which describes an on-screen action for my plan - I can create a program following a design - I can identify that each sprite is controlled by the commands I choose	Programming B – Events and actions	Summer 2	To know how to create a program to move a sprite in four directions	- I can choose a character for my project - I can choose a suitable size for a character in a maze - I can program movement
Programming A – Sequence in music	Summer 3	To know and explain that a program has a start	- I can create a sequence of connected commands - I can explain that the objects in my project will respond exactly to the code - I can start a program in different ways	Programming B – Events and actions	Summer 3	To know how to adapt a program to a new context	- I can choose blocks to set up my program - I can consider the real world when making design choices - I can use a programming extension
Programming A – Sequence in music	Summer 4	To know how to recognise that a sequence of commands can have an order	- I can combine sound commands - I can explain what a sequence is - I can order notes into a sequence	Programming B – Events and actions	Summer 4	To know how to develop my program by adding features	- I can build more sequences of commands to make my design work - I can choose suitable keys to turn on additional features

							- I can identify additional features (from a given set of blocks)
Programming A – Sequence in music	Summer 5	To know and change the appearance of my project	- I can build a sequence of commands - I can decide the actions for each sprite in a program - I can make design choices for my artwork	Programming B – Events and actions	Summer 5	To know and identify and fix bugs in a program	- I can match a piece of code to an outcome - I can modify a program using a design - I can test a program against a given design
Programming A – Sequence in music	Summer 6	To know how to create a project from a task description	- I can identify and name the objects I will need for a project - I can implement my algorithm as code - I can relate a task description to a design	Programming B – Events and actions	Summer 6	To know how to design and create a maze-based challenge	- I can evaluate my project - I can implement my design - I can make design choices and justify them
Programming A – Repetition in shapes	Summer 7	To know how to identify that accuracy in programming is important	- I can create a code snippet for a given purpose - I can explain the effect of changing a value of a command - I can program a computer by typing commands	Programming B – Repetition in games	Summer 7	To know and develop the use of count-controlled loops in a different programming environment	- I can list an everyday task as a set of instructions including repetition - I can modify a snippet of code to create a given outcome - I can predict the outcome of a snippet of code
Programming A – Repetition in shapes	Summer 8	To know how to create a program in a text-based language	- I can test my algorithm in a text-based language - I can use a template to create a design for my program - I can write an algorithm to produce a given outcome	Programming B – Repetition in games	Summer 8	To know and explain that in programming there are infinite loops and count controlled loops	- I can choose when to use a count-controlled and an infinite loop - I can modify loops to produce a given outcome - I can recognise that some programming languages enable more than one process to be run at once

Programming A – Repetition in shapes	Summer 9	To know and explain what 'repeat' means	- I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves - I can identify patterns in a sequence - I can use a count-controlled loop to produce a given outcome	Programming B – Repetition in games	Summer 9	To know to develop a design that includes two or more loops which run at the same time	- I can choose which action will be repeated for each object - I can evaluate the effectiveness of the repeated sequences used in my program - I can explain what the outcome of the repeated action should be
Programming A – Repetition in shapes	Summer 10	To know how to modify a count-controlled loop to produce a given outcome	- I can choose which values to change in a loop - I can identify the effect of changing the number of times a task is repeated - I can predict the outcome of a program containing a count-controlled loop	Programming B – Repetition in games	Summer 10	To know and modify an infinite loop in a given program	- I can explain the effect of my changes - I can identify which parts of a loop can be changed - I can re-use existing code snippets on new sprites
Programming A – Repetition in shapes	Summer 11	To know how to decompose a task into small steps	- I can explain that a computer can repeatedly call a procedure - I can identify 'chunks' of actions in the real world - I can use a procedure in a program	Programming B – Repetition in games	Summer 11	To know and design a project that includes repetition	- I can develop my own design explaining what my project will do - I can evaluate the use of repetition in a project - I can select key parts of a given project to use in my own design
Programming A – Repetition in shapes	Summer 12	To know how to create a program that uses count-controlled loops to produce a given outcome	- I can design a program that includes count-controlled loops - I can develop my program by debugging it - I can make use of my design to write a program	Programming B – Repetition in games	Summer 12	To know and create a project that includes repetition	- I can build a program that follows my design - I can evaluate the steps I followed when building my project - I can refine the algorithm in my design

SUBJECT: COMPUTING

KEY STAGE PHASE: UKS2

MAPPLEWELL PRIMARY SCHOOL

LTP

CYCLE A				CYCLE B			
KEY CONCEPT	**LESSON**	**HCAT LEARNING OBJECTIVE**	**SUCCESS CRITERIA**	**KEY CONCEPT**	**LESSON**	**HCAT LEARNING OBJECTIVE**	**SUCCESS CRITERIA**
Computing systems and networks – Sharing information	Autumn 1	To know and explain that computers can be connected together to form systems	- I can describe that a computer system features inputs, processes, and outputs - I can explain that computer systems communicate with other devices - I can explain that systems are built using a number of parts	Data and information – Flat-file databases	Autumn 1	To know how to use a form to record information	- I can create multiple questions about the same field - I can explain how information can be recorded - I can order, sort, and group my data cards
Computing systems and networks – Sharing information	Autumn 2	To know and recognise the role of computer systems in our lives	- I can explain the benefits of a given computer system - I can identify tasks that are managed by computer systems - I can identify the human elements of a computer system	Data and information – Flat-file databases	Autumn 2	To know and compare paper and computer-based databases	- I can choose which field to sort data by to answer a given question - I can explain what a 'field' and a 'record' is in a database - I can navigate a flat-file database to compare different views of information
Computing systems and networks – Sharing information	Autumn 3	To know how to identify how to use a search engine	- I can compare results from different search engines - I can complete a web search to find specific information - I can refine my search	Data and information – Flat-file databases	Autumn 3	To know how grouping and then sorting data allows us to answer questions	- I can combine grouping and sorting to answer more specific questions - I can explain how information can be grouped - I can group information to answer questions

Computing systems and networks – Sharing information	Autumn 4	To know and describe how search engines select results	- I can explain why we need tools to find things online - I can recognise the role of web crawlers in creating an index - I can relate a search term to the search engine's index	Data and information – Flat-file databases	Autumn 4	To know and explain that tools can be used to select specific data	- I can choose multiple criteria to answer a given question - I can choose which field and value are required to answer a given question - I can outline how 'AND' and 'OR' can be used to refine data selection
Computing systems and networks – Sharing information	Autumn 5	To know how to explain how search results are ranked	- I can explain that a search engine follows rules to rank relevant pages - I can explain that search results are ordered - I can suggest some of the criteria that a search engine checks to decide on the order of results	Data and information – Flat-file databases	Autumn 5	To know and explain that computer programs can be used to compare data visually	- I can explain the benefits of using a computer to create graphs - I can refine a chart by selecting a particular filter - I can select an appropriate chart to visually compare data
Computing systems and networks – Sharing information	Autumn 6	To know and recognise why the order of results is important, and to whom	- I can describe some of the ways that search results can be influenced - I can explain how search engines make money - I can recognise some of the limitations of search engines	Data and information – Flat-file databases	Autumn 6	To know and apply my knowledge of a database to ask and answer real-world questions	- I can ask questions that will need more than one field to answer - I can present my findings to a group - I can refine a search in a real-world context
Computing systems and networks – Communication	Autumn 7	To know and explain the importance of internet addresses	I can recognise that data is transferred using agreed methods I can explain that internet devices have addresses I can describe how computers use addresses to access websites	Data and information – Spreadsheets	Autumn 7	To know to identify questions which can be answered using data	- I can answer questions from an existing data set - I can ask simple relevant questions which can be answered using data - I can explain the relevance of data headings

Computing systems and networks – Communication	Autumn 8	To know and recognise how information is transferred over the internet.	- I can explain that data is transferred over networks in packets - I can explain that networked digital devices have unique addresses - I can recognise that data is transferred using agreed methods	Data and information – Spreadsheets	Autumn 8	To know and explain that objects can be described using data	- I can apply an appropriate number format to a cell - I can build a data set in a spreadsheet application - I can explain what an item of data is
Computing systems and networks – Communication	Autumn 9	To know and explain how sharing information online lets people in different places work together	- I can explain that the internet allows different media to be shared - I can recognise that connected digital devices can allow us to access shared files stored online - I can send information over the internet in different ways	Data and information – Spreadsheets	Autumn 9	To know to explain that formulas can be used to produce calculated data	- I can construct a formula in a spreadsheet - I can explain the relevance of a cell's data type - I can identify that changing inputs changes outputs
Computing systems and networks – Communication	Autumn 10	To know and evaluate different ways of working together online	- I can explain how the internet enables effective collaboration - I can identify different ways of working together online - I can recognise that working together on the internet can be public or private	Data and information – Spreadsheets	Autumn 10	To know how to apply formulas to data, including duplicating	- I can apply a formula to multiple cells by duplicating it - I can create a formula which includes a range of cells - I can recognise that data can be calculated using different operations
Computing systems and networks – Communication	Autumn 11	To know and recognise how we communicate using technology	- I can choose methods of communication to suit particular purposes - I can explain the different ways in which people communicate	Data and information – Spreadsheets	Autumn 11	To know how to create a spreadsheet to plan an event	- I can apply a formula to calculate the data I need to answer questions - I can explain why data should be organised - I can use a spreadsheet to answer questions

			- I can identify that there are a variety of ways of communicating over the internet				
Computing systems and networks – Communication	Autumn 12	To know and evaluate different methods of online communication	- I can compare different methods of communicating on the internet - I can decide when I should and should not share - I can explain that communication on the internet may not be private	Data and information – Spreadsheets	Autumn 12	To know to choose suitable ways to present data	- I can produce a graph - I can suggest when to use a table or graph - I can use a graph to show the answer to questions
Creating media – Video editing	Spring 1	To know and explain what makes a video effective	- I can compare features in different videos - I can explain that video is a visual media format - I can identify features of videos	Creating media – Vector drawing	Spring 1	To know and identify that drawing tools can be used to produce different outcomes	- I can discuss how a vector drawing is different from paper-based drawings - I can identify the main drawing tools - I can recognise that vector drawings are made using shapes
Creating media – Video editing	Spring 2	To know and identify digital devices that can record video	- I can experiment with different camera angles - I can identify and find features on a digital video recording device - I can make use of a microphone	Creating media – Vector drawing	Spring 2	To know how to create a vector drawing by combining shapes	- I can explain that each element added to a vector drawing is an object - I can identify the shapes used to make a vector drawing - I can move, resize, and rotate objects I have duplicated
Creating media – Video editing	Spring 3	To know and capture video using a range of techniques	- I can capture video using a range of filming techniques - I can review how effective my video is	Creating media – Vector drawing	Spring 3	To know and use tools to achieve a desired effect	- I can explain how alignment grids and resize handles can be used to improve consistency - I can modify objects to create different effects

			- I can suggest filming techniques for a given purpose				- I can use the zoom tool to help me add detail to my drawings
Creating media – Video editing	Spring 4	To know how to create a storyboard	- I can create and save video content - I can decide which filming techniques I will use - I can outline the scenes of my video	Creating media – Vector drawing	Spring 4	To know and recognise that vector drawings consist of layers	- I can change the order of layers in a vector drawing - I can identify that each added object creates a new layer in the drawing - I can identify which objects are in the front layer or in the back layer of a drawing
Creating media – Video editing	Spring 5	To know and identify that video can be improved through reshooting and editing	- I can explain how to improve a video by reshooting and editing - I can select the correct tools to make edits to my video - I can store, retrieve, and export my recording to a computer	Creating media – Vector drawing	Spring 5	To know how to group objects to make them easier to work with	- I can copy part of a drawing by duplicating several objects - I can group to create a single object - I can reuse a group of objects to further develop my vector drawing
Creating media – Video editing	Spring 6	To know and consider the impact of the choices made when making and sharing a video	- I can evaluate my video and share my opinions - I can make edits to my video and improve the final outcome - I can recognise that my choices when making a video will impact on the quality of the final outcome	Creating media – Vector drawing	Spring 6	To know how to evaluate my vector drawing	- I can apply what I have learned about vector drawings - I can suggest improvements to a vector drawing - I create alternatives to vector drawings
Creating media – Web page creation	Spring 7	To know and review an existing website and consider its structure	- I can discuss the different types of media used on websites - I can explore a website	Creating media – 3D Modelling	Spring 7	To know use a computer to create and manipulate three-dimensional (3D) digital objects	- I can discuss the similarities and differences between 2D and 3D shapes

			- I know that websites are written in HTML				- I can explain why we might represent 3D objects on a computer - I can select, move, and delete a digital 3D shape
Creating media – Web page creation	Spring 8	To know and plan the features of a web page	- I can draw a web page layout that suits my purpose - I can recognise the common features of a web page - I can suggest media to include on my page	Creating media – 3D Modelling	Spring 8	To know and compare working digitally with 2D and 3D graphics	- I can change the colour of a 3D object - I can identify how graphical objects can be modified - I can resize a 3D object
Creating media – Web page creation	Spring 9	To know to consider the ownership and use of images (copyright)	- I can describe what is meant by the term 'fair use' - I can find copyright-free images - I can say why I should use copyright-free images	Creating media – 3D Modelling	Spring 9	To know how to construct a digital 3D model of a physical object	- I can position 3D objects in relation to each other - I can rotate a 3D object - I can select and duplicate multiple 3D objects
Creating media – Web page creation	Spring 10	To know and recognise the need to preview pages	- I can add content to my own web page - I can evaluate what my web page looks like on different devices and suggest/make edits - I can preview what my web page looks like	Creating media – 3D Modelling	Spring 10	To know and identify that physical objects can be broken down into a collection of 3D shapes	- I can create digital 3D objects of an appropriate size - I can group a digital 3D shape and a placeholder to create a hole in an object - I can identify the 3D shapes needed to create a model of a real-world object
Creating media – Web page creation	Spring 11	To know and outline the need for a navigation path	- I can describe why navigation paths are useful - I can explain what a navigation path is - I can make multiple web pages and link them using hyperlinks	Creating media – 3D Modelling	Spring 11	To know how to design a digital model by combining 3D objects	- I can choose which 3D objects I need to construct my model - I can modify multiple 3D objects - I can plan my 3D model

Creating media – Web page creation	Spring 12	To know and recognise the implications of linking to content owned by other people	- I can create hyperlinks to link to other people's work - I can evaluate the user experience of a website - I can explain the implication of linking to content owned by others	Creating media – 3D Modelling	Spring 12	To know and develop and improve a digital 3D model	- I can decide how my model can be improved - I can evaluate my model against a given criterion - I can modify my model to improve it
Programming A – Selection in physical computing	Summer 1	To know how to control a simple circuit connected to a computer	- I can create a simple circuit and connect it to a microcontroller - I can explain what an infinite loop does - I can program a microcontroller to make an LED switch on	Programming B – Selection in quizzes	Summer 1	To know and explain how selection is used in computer programs	- I can identify conditions in a program - I can modify a condition in a program - I can recall how conditions are used in selection
Programming A – Selection in physical computing	Summer 2	To know and write a program that includes count-controlled loops	- I can connect more than one output component to a microcontroller - I can design sequences that use count-controlled loops - I can use a count-controlled loop to control outputs	Programming B – Selection in quizzes	Summer 2	To know and relate that a conditional statement connects a condition to an outcome	- I can create a program with different outcomes using selection - I can identify the condition and outcomes in an 'if... then… else...' statement - I can use selection in an infinite loop to check a condition
Programming A – Selection in physical computing	Summer 3	To know and explain that a loop can stop when a condition is met	- I can design a conditional loop - I can explain that a condition is either true or - I can program a microcontroller to respond to an input	Programming B – Selection in quizzes	Summer 3	To know to explain how selection directs the flow of a program	- I can design the flow of a program which contains ‘if… then… else…’ - I can explain that program flow can branch according to a condition - I can show that a condition can direct program flow in one of two ways

Programming A – Selection in physical computing	Summer 4	To know explain that a loop can be used to repeatedly check whether a condition has been met	- I can explain that a condition being met can start an action - I can identify a condition and an action in my project - I can use selection (an 'if…then…' statement) to direct the flow of a program	Programming B – Selection in quizzes	Summer 4	To know and design a program which uses selection	- I can identify the outcome of user input in an algorithm - I can outline a given task - I can use a design format to outline my project
Programming A – Selection in physical computing	Summer 5	To know and design a physical project that includes selection	- I can create a detailed drawing of my project - I can describe what my project will do - I can identify a real-world example of a condition starting an action	Programming B – Selection in quizzes	Summer 5	To know and create a program which uses selection	- I can implement my algorithm to create the first section of my program - I can share my program with others - I can test my program
Programming A – Selection in physical computing	Summer 6	To knowhow to create a program that controls a physical computing project	- I can test and debug my project - I can use selection to produce an intended outcome - I can write an algorithm that describes what my model will do	Programming B – Selection in quizzes	Summer 6	To know to evaluate my program	- I can extend my program further - I can identify the setup code I need in my program - I can identify ways the program could be improved
Programming A – Variables in games	Summer 7	To know to define a 'variable' as something that is changeable	- I can explain that the way that a variable changes can be defined - I can identify examples of information that is variable - I can identify that variables can hold numbers or letters	Programming B – Sensing	Summer 7	To know how to create a program to run on a controllable device	- I can apply my knowledge of programming to a new environment - I can test my program on an emulator - I can transfer my program to a controllable device
Programming A – Variables in games	Summer 8	To know and explain why a variable is used in a program	- I can explain that a variable has a name and a value - I can identify a program variable as a placeholder in memory for a single value	Programming B – Sensing	Summer 8	To know and explain that selection can control the flow of a program	- I can determine the flow of a program using selection - I can identify examples of conditions in the real world

			- I can recognise that the value of a variable can be changed				- I can use a variable in an if, then, else statement to select the flow of a program
Programming A – Variables in games	Summer 9	To know to choose how to improve a game by using variables	- I can decide where in a program to change a variable - I can make use of an event in a program to set a variable - I can recognise that the value of a variable can be used by a program	Programming B – Sensing	Summer 9	To know to update a variable with a user input	- I can experiment with different physical inputs - I can explain that if you read a variable, the value remains - I can use a condition to change a variable
Programming A – Variables in games	Summer 10	To know how to design a project that builds on a given example	- I can choose the artwork for my project - I can create algorithms for my project - I can explain my design choices	Programming B – Sensing	Summer 10	To know and use an conditional statement to compare a variable to a value	- I can explain the importance of the order of conditions in else, if statements - I can modify a program to achieve a different outcome - I can use an operand (e.g. <>=) in an if, then statement
Programming A – Variables in games	Summer 11	To know to use my design to create a project	- I can choose a name that identifies the role of a variable - I can create the artwork for my project - I can test the code that I have written	Programming B – Sensing	Summer 11	To know and design a project that uses inputs and outputs on a controllable device	- I can decide what variables to include in a project - I can design the algorithm for my project - I can design the program flow for my project
Programming A – Variables in games	Summer 12	To evaluate my project	- I can extend my game further using more variables - I can identify ways that my game could be improved - I can share my game with others	Programming B – Sensing	Summer 12	To know and develop a program to use inputs and outputs on a controllable device	- I can create a program based on my design - I can test my program against my design - I can use a range of approaches to find and fix bugs