



Carr Hill Community Primary School Knowledge Organiser

Key Stage One

Year 1

Computing

Digital Writing

Key Knowledge

Formatting Text

While using word processing programs you can format and edit the text in a variety of ways. You can make text:

- **Bold**
- *Italics*
- Underlined

Editing Text

It is important to be able to go back and edit a mistake while you are using word processing programs.

- You can navigate back through words using the arrow keys on your keyboard.
- Once you have found your mistake you can use the backspace or delete keys to delete your mistake and then correct it



What is the shift key for?

The shift key can be used to switch between lower-case and upper-case letters. To do this you hold the shift key down while you also press the letter you want to be upper-case.



Keyboard

An input device that allows the user to enter letters, numbers and other symbols into a computer.



Key Vocabulary

Spelling	Definition/Sentence
Undo	Undo the last action you performed in the program.
Redo	Redo the last action you performed in the program.
Font	A design for a set of characters

Programs and APPS



Space Bar

Just as you would in your writing, you need to include spaces within typed words on word processing programs.



Enter Key

The enter key can be used to send the cursor to the next line.





Year 1 – Creating Media – Digital Writing

During this unit, learners will develop their understanding of the various aspects of using a computer to create and manipulate text. Learners will become more familiar with using a keyboard and mouse to enter and remove text. Learners will also consider how to change the look of their text, and will be able to justify their reasoning in making these changes. Finally, learners will consider the differences between using a computer to create text, and writing text on paper. They will be able to explain which method they prefer and explain their reasoning for choosing this.

Lesson	Brief overview	Learning objectives
1 Exploring the keyboard	<p>This is the first lesson in which Year 1 learners will experience using a computer to create and manipulate text. It is important that they know how to log on and follow the rules that keep them safe.</p> <p>In this lesson, the learners will familiarise themselves with a word processor and think about how they might use this application in the future. The learners will also be identifying and finding keys, before adding text to their page by pressing keys on a keyboard.</p>	<p>To use a computer to write</p> <ul style="list-style-type: none"> • I can open a word processor • I can recognise keys on a keyboard • I can identify and find keys on a keyboard
2 Adding and removing text	<p>In this lesson, learners will continue to familiarise themselves with word processors and how they can interact with the computer using a keyboard. The learners will focus on adding text and will explore more of the keys found on a keyboard. Finally, they will begin to use the backspace button to remove text from the computer.</p>	<p>To add and remove text on a computer</p> <ul style="list-style-type: none"> • I can enter text into a computer • I can use letter, number, and space keys • I can use backspace to remove text
3 Exploring the toolbar	<p>In this lesson, learners will begin to explore the different tools that can be used in word processors to change the look of the text. Learners will use the Caps Lock key to add capital letters to their writing and will begin thinking about how to use this successfully. The learners will match simple descriptions with the key that they relate to. Finally, learners will begin exploring the different buttons available on the toolbar in more detail and use these to change their own text.</p>	<p>To identify that the look of text can be changed on a computer</p> <ul style="list-style-type: none"> • I can type capital letters • I can explain what the keys that I have learnt about already do • I can identify the toolbar and use bold, italic, and underline
4 Making changes to text	<p>In this lesson, learners will begin to understand when it is best to change the look of their text and which tool will achieve the most appropriate outcome. The learners will begin to use their mouse cursor to select text to enable them to make more efficient changes. They will explore the different fonts available to them and change the font for their lost toy poster.</p>	<p>To make careful choices when changing text</p> <ul style="list-style-type: none"> • I can select a word by double-clicking • I can select all of the text by clicking and dragging • I can change the font
5 Explaining my choices	<p>In this lesson, learners will begin to justify their use of certain tools when changing text. The learners will decide whether the changes that they have made have improved their writing and will begin to use 'undo' to remove changes. They will begin to consolidate their ability to select text using the cursor, through double-clicking and clicking and dragging. The learners will be able to explain what tool from the toolbar they have used to change their writing.</p>	<p>To explain why I used the tools that I chose</p> <ul style="list-style-type: none"> • I can say what tool I used to change the text • I can decide if my changes have improved my writing • I can use 'undo' to remove changes
6 Pencil or keyboard?	<p>In this lesson, learners will make comparisons between using a computer for writing and writing on paper. The learners will discuss how the two methods are the same and different and think of examples to explain this. They will demonstrate making changes to writing using a computer to compare the two methods. Finally, the learners will begin to explain which they liked best and think about which method would be the best method to use in different situations.</p>	<p>To compare writing on a computer with writing on paper</p> <ul style="list-style-type: none"> • I can write a message on a computer and on paper • I can compare using a computer with using a pencil and paper • I can say which method I like best



Carr Hill Community Primary School Knowledge Organiser

Key Stage One

Year 1

Computing

Data and Information- Grouping Data

Key Knowledge

What is data?

Data is all around us. Simply put data is facts or numbers which we might collect. We can choose to gather data by observing an event and recording the data gathered as marks on a piece of paper. We might then process the data by adding up the marks and share the results by creating a graph or chart. We can handle data with or without a computer.

Grouping

The same objects can be put into different groups depending upon their properties. Computers can help us by allowing us to put different objects into a group.

Counting

Computers can be programmed to count objects a group.

Labelling Groups

Labelling groups

Draw arrows to match the group labels to the correct groups.

Books

Frogs

Animals

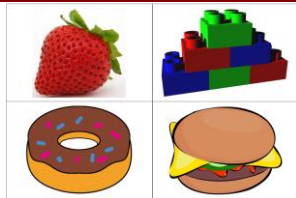
Trees

Cars

Bikes



Grouping Data



Things we eat

Things we write with

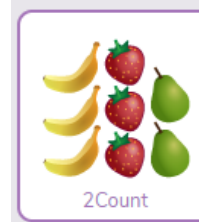
Things we play with

Key Vocabulary

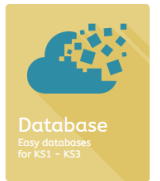
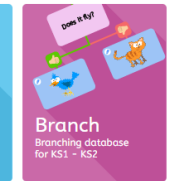
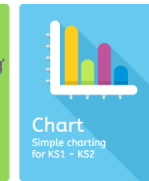
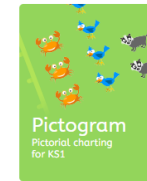
Spelling	Definition/Sentence
data	Data can be numbers, words or figures
labels	Labels are used to place next to a group of objects
unplugged	Activities that do not need a computer or electrical device
sort	To organise data into groups

Programs and APPS

Purple Mash

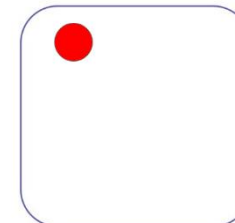
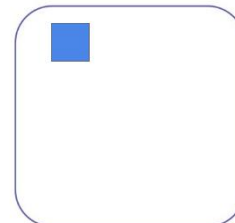


J2 data

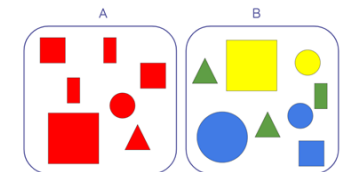


Creating Groups

Creating groups - group the shapes



Comparing Groups



Group A and group B

Group A and group B



Year 1 – Data and Information- Grouping Data

This unit introduces pupils to data and information. Labelling, grouping, and searching are important aspects of data and information. Searching is a common operation in many applications, and requires an understanding that to search data, it must have labels. This unit of work focuses on assigning data (images) with different labels in order to demonstrate how computers are able to group and present data.

Pupils will begin by using labels to put objects into groups and labelling these groups. They will demonstrate that they can count a small number of objects, before and after the objects are grouped. Pupils will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose. Finally, pupils will use their ability to sort objects into different groups to answer questions about data.

Lesson	Brief overview	Learning objectives
1 Label and match	In this lesson, pupils will begin to understand that objects have many different labels that can be used to put them into groups. They will name different objects and begin to experiment with placing them into different groups. Pupils will also label a group of objects and begin to understand that an object can fit into more than one group depending on the context.	<ul style="list-style-type: none">• To label objects• I can describe objects using labels• I can match objects to groups• I can identify the label for a group of objects
2 Group and count	In this lesson, pupils will begin to think about grouping objects based on what the objects are. They will demonstrate the ability to count a small number of objects before they group them and will then begin to show that they can count groups of objects with the same property. Pupils will also begin to learn that computers are not intelligent and require input from humans to perform tasks.	<ul style="list-style-type: none">• To identify that objects can be counted• I can count objects• I can group objects• I can count a group of objects
3 Describe an object	In this lesson, pupils will begin to understand that objects can be described in many different ways. They will identify the properties of objects and begin to understand that properties can be used to group objects; for example, objects can be grouped by colour or size. Finally, pupils will demonstrate their ability to find objects with similar properties and begin to understand the reason that we need to give labels to images on a computer.	<ul style="list-style-type: none">• To 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
4 Making different groups	In this lesson, pupils will classify objects based on their properties. They will group objects that have similar properties and will be able to explain how they have grouped these. Pupils will begin to group a number of the same objects in different ways and will demonstrate their ability to count these different groups.	<ul style="list-style-type: none">• To count objects with the same properties• I can group similar objects• I can group objects in more than one way• I can count how many objects share a property
5 Comparing groups	In this lesson, pupils will choose how they want to group different objects by properties. They will begin to compare and describe groups of objects, then they will record the number of objects in each group.	<ul style="list-style-type: none">• To 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
6 Answering questions	In this lesson, pupils will decide how to group objects to answer questions. They will compare their groups by thinking about how they are similar or different, and they will record what they find. They will then share what they have found with their peers.	<ul style="list-style-type: none">• To answer questions about groups of objects• I can decide how to group objects to answer a question• I can compare groups of objects• I can record and share what I have found

Key Stage One	Year 1	Computing	Programming Animations
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Key Knowledge

What is Scratch JR?

Scratch JR is an app where children can program their own interactive stories and games using characters and different backgrounds.

Examples of Scratch JR Algorithms



Types of Blocks

In Scratch JR there are different blocks that perform different commands when used.

- Triggering Blocks
- Motion Blocks
- Looks Blocks
- Sound Blocks
- Control Blocks
- End Blocks

These blocks are used to create a sequence of instructions (an algorithm).

Blocks

Shrink	
	Decreases the character's size.
Grow	
	Increases the character's size.
Hide	
	Fades out the character until it is invisible.
Show	
	Fades in the character until it is fully visible.
Repeat Forever	
	Runs the script over and over.

Key Vocabulary

Spelling	Definition/Sentence
sequence	A sequence is a pattern or process in which one thing follows another
algorithms	An algorithm is a set of instructions for performing a task
programming	Programming is when you move blocks into position
Debugging	Is correcting a mistake or problem with an algorithm
Repeat	Do something again once it has already been done.
Grow	When something grows in size.
Shrink	When something gets smaller in size

Programs and APPS





Year 1 – Programming Animations

This unit introduces learners to on-screen programming through ScratchJr. Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs. Learners will also be introduced to the early stages of program design through the introduction of algorithms.

Lesson	Brief overview	Learning objectives
Comparing tools	During this lesson learners will become accustomed to the ScratchJr programming environment. They will discover that they can move characters on-screen using commands and compare ScratchJr to the Bee-Bots used in the previous unit.	<ul style="list-style-type: none">• To choose a command for a given purpose• I can find the commands to move a sprite• I can use commands to move a sprite• I can compare different programming tools
Joining blocks	During this lesson learners will discover that blocks can be joined together in ScratchJr. They will use a Start block to run their programs. They will also learn additional skills such as adding backgrounds and deleting sprites. Learners will follow given algorithms to create simple programs.	<ul style="list-style-type: none">• To show that a series of commands can be joined together• I can use more than one block by joining them together• I can use a Start block in a program• I can run my program
Make a change	During this lesson learners will discover that some blocks in ScratchJr have numbers underneath them. They will learn how to change these values and identify the effect on a block of changing a value.	<ul style="list-style-type: none">• To identify the effect of changing a value• I can find blocks that have numbers• I can change the value• I can say what happens when I change a value
Adding sprites	During this lesson learners will be taught how to add and delete sprites in ScratchJr. They will discover that each sprite has its own programming area and learn how to add programming blocks to give instructions to each of the sprites.	<ul style="list-style-type: none">• To explain that each sprite has its own instructions• I can show that a project can include more than one sprite• I can delete a sprite• I can add blocks to each of my sprites
Project design	During this lesson learners will choose appropriate backgrounds and sprites for a ‘Space race’ project. They will decide how each sprite will move, and create an algorithm based on the blocks available in ScratchJr that reflects this.	<ul style="list-style-type: none">• To design the parts of a project• I can choose appropriate artwork for my project• I can decide how each sprite will move• I can create an algorithm for each sprite
Following my design	During this lesson learners will use their project designs from the previous lesson to create their projects on-screen in ScratchJr. They will use their project design, including algorithms created in the previous lesson, to make programs for each of their rocket sprites. They will test whether their algorithms are effective when their programs are run.	<ul style="list-style-type: none">• To use my algorithm to create a program• I can use sprites that match my design• I can add programming blocks based on my algorithm• I can test the programs I have created

Key Stage One

Year 1

Computing

Key Knowledge

- To understand and explain what technology is
- To identify a computer and its main parts
- To use a mouse in different ways
- To use a keyboard to type
- To use a keyboard to edit text
- To create rules for using technology responsibly

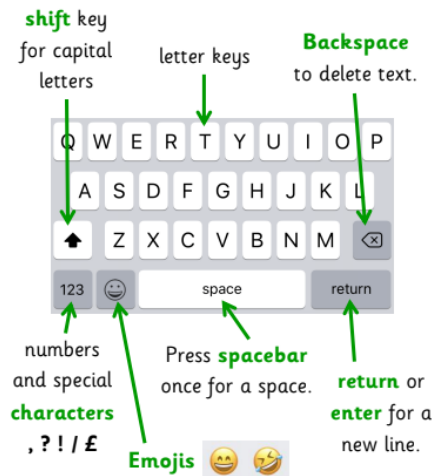
Types of devices online or offline?



These are all types of technological devices. Some connect to the internet and can be used online, some cannot. Sometimes they can work both online and offline

Word	Definition	Picture
cursor	A symbol on the screen that shows where the user is working.	
exit	The exit button is the cross in the top right corner which allows you to close the windows open on screen.	
login	The details that you use to log on (or enter) the computer system.	
minimise	The button that you use to hide the window that is open on screen.	
switch	The button that, when pressed, turns the laptop on and off.	

Parts of a Keyboard



Key Vocabulary

Spelling	Definition/Sentence
Technology	A man-made tool or devise that assists with solving a problem
Computer	An electronic devise that stores and sorts information
Mouse	A small tool used with computers. It can be used to move and selected things displayed on the screen
Screen	A flat surface that shows images and text, often on a computer, phone or tv
Keyboard	A row of keys (buttons) that are used to give information to the computer, often letters and numbers
Responsibly	Being able to make the right decision

Parts of a Computer

 mouse	 screen	 keyboard
The mouse lets you select and move objects.	The screen shows what the computer is doing	The keyboard lets you type, letters, numbers and symbols.



Year 1 – Computing systems and networks – Technology around us

In this unit, learners will develop their understanding of technology and how it can help us. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. Learners will also consider how to use technology responsibly.

Lesson	Brief overview	Learning objectives
1. Technology around us	Technology is all around us, and we use it regularly throughout daily life. In this lesson, learners will become familiar with the term 'technology'. Referring to objects in their own school or classroom, they will learn to classify what is and what is not technology, plus they'll practice explaining how it helps us.	<ul style="list-style-type: none">• To identify technology• I can explain technology as something that helps us• I can locate examples of technology in the classroom• I can explain how these technology examples help us
2. Using technology	In this lesson, learners will get to know the main parts of a desktop or laptop computer. They will apply this knowledge to use a computer to complete a mouse-based task.	<ul style="list-style-type: none">• To 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
3. Developing mouse skills	This lesson builds on the basic mouse skills introduced in lesson 2. Learners will have the opportunity to apply mouse skills to a more open-ended, creative task.	<ul style="list-style-type: none">• To use a mouse in different ways• I can use a mouse to open a program• I can click and drag to make objects on a screen• I can use a mouse to create a picture
4. Using a computer keyboard	In this lesson, learners will experience using another input device: the computer keyboard. They will combine the use of the keyboard with use of the mouse to create a digital image with text.	<ul style="list-style-type: none">• To use a keyboard to type• I can tell you that writing on a computer is called typing• I can type my name on a computer• I can save my work to a file
5. Developing keyboard skills	In this lesson, learners will become more familiar with the keyboard. They will recap skills introduced in the previous lesson and develop them further by using a greater range of keys on the keyboard.	<ul style="list-style-type: none">• To use the keyboard to edit text• I can open my work from a file• I can use the arrow keys to move the cursor• I can delete letters
6. Using a computer responsibly	In this lesson, learners will be introduced to the concept of using computers safely, within the context of a school setting. They will explore why we have rules in school and how those rules help us, and then apply that to rules needed for using computer technology safely.	<ul style="list-style-type: none">• To create rules for using technology responsibly• I can identify rules to keep us safe and healthy when we are using technology in and beyond the home• I can give examples of some of these rules• I can discuss how we benefit from these rules

Key Stage One	Year 1	Computing	Moving a Robot
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Key Knowledge

What is coding?

Every computer program is a set of instructions; a sequence of short commands, one after another. Coding is about breaking up a complex task into a set of smaller, individual instructions. We will be learning to code through:

- Beebot robots
- ScratchJr
- Beebot apps

Programming a Toy

Children will learn how to programme a Bee- Bot device. They will predict what they think it might do, experiment with the buttons and explain the outcome.
Children will learn how to create a simple program or app, making pictures move on screen.

What is a program?

What is a program

A program is a set of instructions completed in order to achieve a task

Programs are created using programming language.

1. Forwards
2. Backwards
3. Left
4. Right

Forward

Backward

Left

Right

Key Vocabulary

Spelling	Definition/Sentence
algorithm	A logical sequence of steps for solving a problem.
coding	A fixed set of instructions.
program	A set of instructions that makes something happen.
debug	Repair, fix or amend an algorithm.
tinkering	To play around and explore hardware to see how it works.
Chronological Order	The order in which something has happened or is done

Programs and APPS

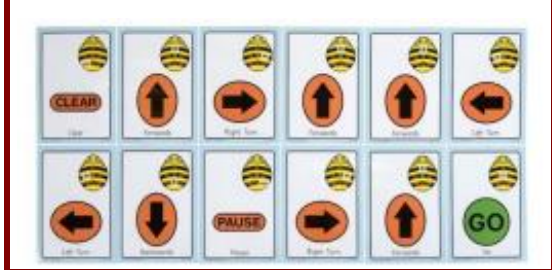
Bee-Bot®

Coding Safari

Code Karts

Lightbot

We will be looking at directions and simple programming



Bee-Bots can be programmed to go forwards, backwards, left and right.





Year 1 – Creating Media – Moving a Robot

This unit introduces learners to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of algorithms.

Lesson	Brief overview	Learning objectives
1. Buttons	This lesson introduces the learners to floor robots. Learners will talk about what the buttons might do and then try the buttons out. Time will be spent linking an outcome to a button press. Learners will consider the direction command buttons, as well as buttons to clear memory and run programs.	<ul style="list-style-type: none"> • To explain what a given command will do • I can predict the outcome of a command on a device • I can match a command to an outcome • I can run a command on a device
2. Directions	During this lesson, learners will think about the language used to give directions and how precise it needs to be. Learners will also work with a partner, giving and following instructions. This real-world activity should, at suitable points during this lesson, be related to the floor robot that was introduced in the last lesson.	<ul style="list-style-type: none"> • To act out a given word • I can follow an instruction • I can recall words that can be acted out • I can give directions
3. Forwards and backwards	In this lesson, learners will focus on programming the floor robot to move forwards and backwards. They will see that the robot moves forwards and backwards a fixed distance. This highlights the idea that robots follow a clear (fixed) command in a precise and repeatable way. Learners will think about starting the robot from the same place each time. Using the same start position with fixed commands will allow learners to predict what a program will do. Note: This lesson focuses specifically on forwards and backwards movement only. This is to ensure that learners are developing a depth of knowledge in the concepts surrounding programming, as well as increasing their ability to make the robot move. The success criteria chosen highlight this and ensure that the learners' knowledge builds in a suitably paced way.	<ul style="list-style-type: none"> • To combine forwards and backwards commands to make a sequence • I can compare forwards and backwards movements • I can start a sequence from the same place • I can predict the outcome of a sequence involving forwards and backwards commands
4. Four directions	In this lesson, learners will use left and right turn commands along with forwards and backwards commands. Doing this will allow learners to develop slightly more complex programs. Learners will create their programs in this lesson through trial and error before moving onto planning out their programs in the next lesson. In the last activity, learners will predict where given programs will move the robot. Learners will make their predictions by 'stepping through' the commands and matching the program steps to movements.	<ul style="list-style-type: none"> • 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
5. Getting there	In this lesson, learners will decide what their program will do. They will then create their program and test it on the robot. Where needed, learners will also debug their programs.	<ul style="list-style-type: none"> • To plan a simple program • I can explain what my program should do • I can choose the order of commands in a sequence • I can debug my program
6. Routes	This lesson encourages learners to plan their routes before they start to write their programs. The activities also introduce the concept of there being more than one way to solve a problem. This concept applies to a lot of programming activities: the same outcome can be achieved through a number of different approaches, and there isn't necessarily a 'right' way. The lesson also introduces the idea of program design, in which learners need to plan what they want their program to achieve before they start programming.	<ul style="list-style-type: none"> • 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

Key Knowledge

Painting using different tools

In paint programs there are a selection of different brushes to choose from.

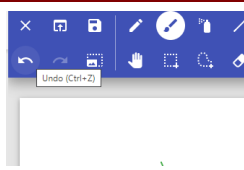
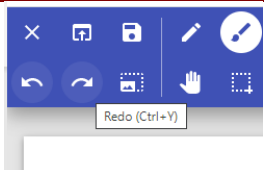


Each brush stroke looks different.



Undo and Redo

Sometimes you may make a mistake on your painting and want to undo it or redo it, you can do this by simply pressing a button.



Changing Colour

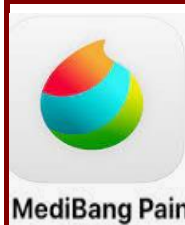
You can select different colours for lines, shapes and fills



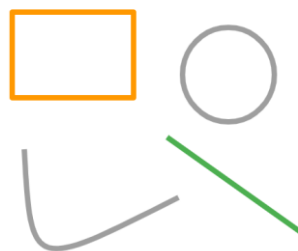
Key Vocabulary

Spelling	Definition/Sentence
Save	a command that causes a copy of the document or file to be created.
Undo	undo the last action you performed in the program
Redo	redo the last action you performed in the program.
Format	editing or changing things—text and images.

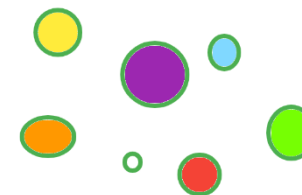
Programmes and APPS



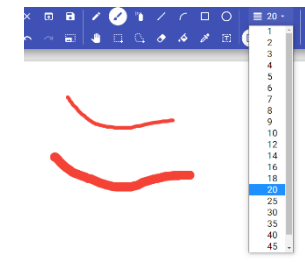
Using lines and shapes



Using the fill tool



Changing the width of a brush





Year 1 – Creating Media – Digital Painting

During this unit, learners develop their understanding of a range of tools used for digital painting. They then use these tools to create their own digital paintings, while gaining inspiration from a range of artists' work. The unit concludes with learners considering their preferences when painting with and without the use of digital devices.

Lesson	Brief overview	Learning objectives
How can we paint using computers?	This lesson introduces learners to the freehand tools available for digital painting.	To describe what different freehand tools do <ul style="list-style-type: none">• I can make marks on a screen and explain which tools I used• I can draw lines on a screen and explain which tools I used• I can use the paint tools to draw a picture
Using shape and lines	This lesson introduces learners to the line and shape tools and revisits the fill and undo tools used for digital painting. Learners create their own digital painting in the style of an artist.	To use the shape tool and the line tools <ul style="list-style-type: none">• I can make marks with the square and line tools• I can use the shape and line tools effectively• I can use the shape and line tools to recreate the work of an artist
Making careful choices	This lesson introduces learners to a range of shape tools, allowing them to create a painting in the style of an artist.	To make careful choices when painting a digital picture <ul style="list-style-type: none">• I can choose appropriate shapes• I can make appropriate colour choices• I can create a picture in the style of an artist
Why did I choose that?	This lesson increases learners' understanding of the available paint tools and encourages them to select the best tools to create a digital painting in the style of Wassily Kandinsky.	To explain why I chose the tools I used <ul style="list-style-type: none">• I know that different paint tools do different jobs• I can choose appropriate paint tools and colours to recreate the work of an artist• I can say which tools were helpful and why
Painting all by myself	Learners select appropriate colours, brush sizes, and brush tools to independently create their own image in the style of an artist.	To use a computer on my own to paint a picture <ul style="list-style-type: none">• I can make dots of colour on the page• I can change the colour and brush sizes• I can use dots of colour to create a picture in the style of an artist on my own
Comparing computer art and painting	Learners compare their preferences when creating paintings on computers and on paper.	To compare painting a picture on a computer and on paper <ul style="list-style-type: none">• I can explain that pictures can be made in lots of different ways• I can spot the differences between painting on a computer and on paper• I can say whether I prefer painting using a computer or using paper