



The Computing Curriculum Year 1

Year 1 – Autumn 1		Unit 1 – Technology Around Us			
National Curriculum Objectives:					
<ul style="list-style-type: none">• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content• Recognise common uses of information technology beyond school• Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies					
Unit Overview					
Learners will develop their understanding of technology and how it can help them in their everyday lives. 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. Note: This lesson has been planned using desktop computers and the (free) program paintz.app, however, it can be taught with laptops. If you are using laptops for this unit, consider spending more time practicing and discussing the trackpad. https://teachcomputing.org/curriculum/key-stage-1/computing-systems-and-networks-technology-around-us					
Previous Knowledge acquired - EYFS					
<ul style="list-style-type: none">• Increasingly follow rules, understanding why they are important.• Remember rules without needing an adult to remind them.• Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.					
Progression of knowledge throughout the Computing curriculum - Technology					
Year 2	Year 3	Year 4	Year 5	Year 6	
<ul style="list-style-type: none">• Know examples of computers• Know and describe some uses of computers• Know that a computer is a part of information technology• Know and explain the purpose of information technology in the home• Know how to open a file• Know how to move and resize images• Know how to find examples of information technology• Know and talk about uses of information technology• Compare types of information technology• Know how information technology is used in a shop	<ul style="list-style-type: none">• I know that digital devices accept inputs.• I know that digital devices produce outputs.• I know how to follow a process.• I know how to classify input and output devices.• I know how to model a simple process.• I know how to design a digital device.• I know how I use digital devices for different activities.• I know how to recognise similarities between using digital devices and non-digital tools.• I know the differences between using digital devices and non-	<ul style="list-style-type: none">• Know the internet is a network of networks• Know how information is shared across the internet• Know why a network needs protecting• Know the different networked devices and how they connect• Know how the internet allows us to view the World Wide Web• Know that the World Wide Web is the part of the internet that contains websites and web pages	<ul style="list-style-type: none">• Know that systems are built using a number of parts• Know that a computer system features inputs, processes, and outputs• Know that computer systems communicate with other devices• Know tasks that are managed by computer systems• Know the human elements of a computer system• Know the benefits of a given computer system• Know that data is transferred using agreed methods• Know that networked digital devices have unique addresses	<ul style="list-style-type: none">• Know how to complete a web search to find specific information• Know how to refine my search• Know how to compare results from different search engines• Know why we need tools to find things online• Know the role of web crawlers in creating an index• Know how to relate a search term to the search engine’s index• Know that search results	

<ul style="list-style-type: none"> • Know that information technology can be connected • Know and explain how information technology helps people • Know different uses of information technology • Know how to use information technology responsibly • Know how those rules/guides can help me • Identify the choices that I make when using information technology • Know and explain simple guidance for using information technology in different environments and settings 	<p>digital tools.</p> <ul style="list-style-type: none"> • I know how to recognise different connections. • I know how messages are passed through multiple connections. • I know why we need a network switch. • I know that a computer network is made up of a number of devices. • I know and can demonstrate how information can be passed between devices. • I know and can explain the role of a switch, server, and wireless access point in a network. • I know and can identify how devices in a network are connected with one another. • I know and can identify networked devices around me. • I know and can identify the benefits of computer networks. 	<ul style="list-style-type: none"> • Know the types of media that can be shared on the World Wide Web (WWW) • Know where websites are stored when uploaded to the WWW • Know how to access websites on the WWW • Know how to create media which can be found on websites • Know that I can add content to the WWW • Know that new content can be created online • Know that websites and their content are created by people • Know who owns the content on websites • Know that there are rules to protect content • Know that not everything on the World Wide Web is true. • Know why some information I find online may not be honest, accurate, or legal. • Know why I need to think carefully before I share or reshare content 	<ul style="list-style-type: none"> • Know that data is transferred over networks in packets • Know that connected digital devices can allow us to access shared files stored online • Know how to send information over the internet in different ways • Know that the internet allows different media to be shared • Know and suggest strategies to ensure successful group work • Compare working online with working offline • Know different ways of working together online • Know that working together on the internet can be public or private • Know how the internet enables effective collaboration 	<p>are ordered</p> <ul style="list-style-type: none"> • Know that a search engine follows rules to rank relevant pages • Know some of the criteria that a search engine checks to decide on the order of results • Know some of the ways that search results can be influenced • Know some of the limitations of search engines • Know how search engines make money • Know the different ways in which people communicate • Know that there are a variety of ways of communicating over the internet • Know to choose methods of communication to suit particular purposes • Know how to compare different methods of communicating on the internet • Know when I should and should not share • Know that communication on the internet may not be private
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Key knowledge acquired throughout this unit

- Know technology as something that helps us
- Know examples of technology in the classroom
- Know how these technology examples help us
- Know the names of the main parts of a computer
- Know how to switch on and log into a computer
- Know how to use a mouse to click and drag
- Know how to use a mouse to open a program
- Know how to click and drag to make objects on a screen
- Know how to use a mouse to create a picture
- Know what a keyboard is for
- Know how to type my name on a computer
- Know how to save my work to a file
- Know how to open my work from a file
- Know how to use the arrow keys to move the cursor
- Know how to delete letters
- Know rules to keep us safe and healthy when we are using technology in and beyond the home and give examples of some of these rules
- Know how we benefit from these rules

Subject knowledge and teacher guidance:

Teachers need to know that the definition of technology is **something that has been made with a specific purpose to help other people**. Teachers should familiarise themselves with objects which are and are not examples of technology.

Teachers will need to be aware that typing is the process of using a keyboard to write words, letters or numbers on a screen.

Here are some examples of technology



Rules for using computer technology

- Hold your device carefully
- Stop using your device when someone is talking to you
- Take turns with your partner
- Use only the apps you have been asked to use
- Don't share your passwords



Subject specific vocabulary and definitions (Tier 3 vocabulary)

Technology	Something that has been made to help us.
Delete	Remove writing on a computer
Cursor	A small shape that shows where anything typed will appear
Undo	Change what you have just done to how it was before
File	A folder on a computer where you can keep your work
Typing	Using a keyboard to write

Medium Term Planning

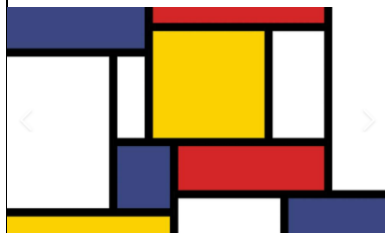
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
To identify technology	To identify a computer and its main parts	To use a mouse in different ways	To use a keyboard to type on a computer	To use the keyboard to edit text	To create rules for using technology responsibly

Year 1 – Autumn 2		Unit 2 – Digital Painting			
National Curriculum Objectives:					
<ul style="list-style-type: none">Use technology purposefully to create, organise, store, manipulate, and retrieve digital content					
Cross Curricular Links					
KS1 Art and Design					
Pupils should be taught:					
<ul style="list-style-type: none">To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and spaceAbout the work of a range of artists, craft makers, and designers, describing the differences and similarities between different practices and disciplines and making links to their own work					
Unit Overview					
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.					
Previous Knowledge acquired - EYFS					
<ul style="list-style-type: none">Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.Explore, use and refine a variety of artistic effects to express their ideas and feelings.Return to and build on their previous learning, refining ideas and developing their ability to represent them.Create collaboratively, sharing ideas, resources and skills.					
Progression of knowledge throughout the Computing curriculum – Digital Literacy					
Year 2	Year 3	Year 4	Year 5	Year 6	
<ul style="list-style-type: none">Know what devices can be used to take photographsKnow how to take a photographKnow and explain what I did to capture a digital photoKnow the process of taking a good photographKnow how to take photos in both landscape and portrait formatKnow and explain why a photo looks better in portrait or landscape formatKnow what is wrong with a photographKnow how to take a good photograph	<ul style="list-style-type: none">Know how to draw a sequence of picturesKnow how to create flip book— style animation.Know how an animation and flip book works.Know what an animation will look like.Know why little changes are needed for each frame.Know how to create and effective stop frame animation.Know how to break down a story into settings, characters and events.Know how to describe an	<ul style="list-style-type: none">Know digital devices that can record sound and play it backKnow the inputs and outputs required to play audio or record soundKnow the range of sounds that can be recordedKnow how to use a device to record audio and play back soundKnow how to improve my recordingKnow what other people include when recording sound for a podcastKnow how to plan and write	<ul style="list-style-type: none">Know that video is a visual media formatKnow features of videosKnow how to compare features in different videosKnow and find features on a digital video recording deviceKnow how to experiment with different camera anglesKnow how to make use of a microphoneKnow and suggest filming techniques for a given purposeKnow how to capture video using a range of filming techniques	<ul style="list-style-type: none">Know how to explore a websiteKnow the different types of media used on websitesKnow that websites are written in HTMLKnow the common features of a web pageKnow which media to include on my pageKnow how to draw a web page layout that suits my purposeKnow why I should use copyright-free images	

<ul style="list-style-type: none"> • Know that I can improve a photograph by retaking it • Know the effect that light has on a photo • Know to experiment with different light sources • Know and explain why a picture may be unclear • Know that images can be changed • Know how to use a tool to achieve a desired effect • Know how to apply a range of photography skills to capture a photo • Know which photos have been changed • Know which photos are real and which have been changed 	<ul style="list-style-type: none"> • animation that is achievable on screen. • Know how to create a storyboard. • Know how to use onion skinning to help me make small changes between frames. • Know how to review a sequence of frames to check my work. • Know how evaluate the quality of my animation. 	<ul style="list-style-type: none"> • the content for a podcast • Know why it is useful to be able to save digital recordings • Know how to save a digital recording as a file • Know how to open a digital recording from a file • Know ways in which audio recordings can be altered • Know how to edit sections of an audio recording • Know sounds that other people combine • Know suitable sounds to include in a podcast • Know how to use editing tools to arrange sections of audio • Know that digital recordings need to be exported to share them • Know the features of a digital recording I like • Know and suggest improvements to a digital recording 	<ul style="list-style-type: none"> • Know how to review how effective my video is • Know how to outline the scenes of my video • Know how to decide which filming techniques I will use • Know how to create and save video content • Know how to store, retrieve, and export my recording to a computer • Know how to improve a video by reshooting and editing • Know how to select the correct tools to make edits to my video • Know how to make edits to my video and improve the final outcome • Know that my choices when making a video will impact the quality of the final outcome • Know how to evaluate my video and share my opinions 	<ul style="list-style-type: none"> • Know how to find copyright-free images • Know what is meant by the term 'fair use' • Know how to add content to my own web page • Know how to preview what my web page looks like • Know to evaluate what my web page looks like on different devices and suggest/make edits. • Know what a navigation path is • Know why navigation paths are useful • Know how to make multiple web pages and link them using hyperlinks • Know the implication of linking to content owned by others • Know how to create hyperlinks to link to other people's work • Know to evaluate the user experience of a website
Key knowledge acquired throughout this unit				
<ul style="list-style-type: none"> • Know how to make marks on a screen and explain which tools were used • Know how to draw lines on a screen and explain which tools were used. • Know how to use paint tools to draw a picture. • Know how to make marks with the square and line tools • Know how to use shape and line tools effectively to recreate the work of an artist • Choose appropriate shapes • Know how to make appropriate colour choices • Know how to create a picture in the style of an artist • Know how to choose appropriate paint tools and colours to create the work of an artist • Know which tools were helpful and why • Know how to make dots of colour on the page • Know how to change the colour and brush size • Know how to use dots of colour to create a picture in the style of an artist on my own. 				
Subject knowledge and teacher guidance:				

Before teaching this unit, you should ensure you are familiar with the following:








- Lesson 1: The freehand painting tools in Microsoft Paint or the online app Paintz ([paintz.app](https://www.paintz.app/)), or another appropriate digital painting program
- Lesson 2: The style of Piet Mondrian (or another appropriate artist); primary colours; and the line, shape, fill, and undo tools in the digital painting program you've chosen
- Lesson 3: The style of Henri Matisse (or another appropriate artist); the shape, fill, and undo tools in the digital painting program you've chosen
- Lesson 4: The following painting tools in the digital painting program: paintbrush, pencil, fill, erase, undo, shape, and brush styles (e.g. spray can) if available
- Lesson 5: The following painting tools in the digital painting program: paintbrush, undo, brush sizes, and brush styles if available
- Lesson 6: The following painting tools in the digital painting program: paintbrush, pencil, fill tool, eraser, undo, shape tool, and brush styles if available



Piet Mondrian



Henry Matisse

	Shape
	Fill
	Line
	Eraser
	Undo
	Spray Can
	Paint Brush
	Pencil

<https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-painting>

Subject specific vocabulary and definitions (Tier 3 vocabulary)

Undo	Change back what you have just done to how it was before
Eraser	Rubber
Fill	Fills the whole space with paint
Line	A long thin mark
Tools	Different pieces of equipment that you use to paint with

Medium Term Planning					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Describe what different freehand tools do	Use the shape and the line tools	Make careful choices when painting a digital picture	Explain why I chose the tools I used	Use a computer independently to paint a picture	To compare painting a picture on a computer and on paper

Year 1 – Spring 1		Unit 3 – Grouping Data		
National Curriculum Objectives:				
<ul style="list-style-type: none">• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content• Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies				
Unit Overview				
<ul style="list-style-type: none">▪ 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.▪ Note: Throughout this unit, pupils will be logging on to the computers, opening their documents, and saving their documents. Depending on how your school’s system is set up, additional support and time may be required to facilitate these steps, and consideration should be given as to how this will impact the timings of activities in each lesson.				
Previous Knowledge acquired - EYFS				
<ul style="list-style-type: none">• Count objects, actions and sounds.• Subitise.• Link the number symbol (numeral) with its cardinal number value.• Compare numbers.• Understand the ‘one more than/one less than’ relationship between consecutive numbers.• Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.				
Progression of knowledge throughout the Computing curriculum – Data Handling				
Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">• Know how to record data in a tally chart• Know how to represent a tally count as a total• Know how to compare totals in a tally chart• Know how to enter data onto a computer• Know how to use a computer to view data in a different format• Know how to use pictograms to answer simple questions about	<ul style="list-style-type: none">• Know how to investigate questions with yes/no answers.• Know how to make up a yes/no question about a collection of objects.• Know how to create two groups of objects separated by one attribute.• Know select an attribute to separate objects into groups.• Know how to create a group of objects within an existing group.	<ul style="list-style-type: none">• Know how to choose a data set to answer a given question• Know how to suggest questions that can be answered using a given data set• Know that data gathered over time can be used to answer questions• Know data that can be gathered over time• Know that sensors are input	<ul style="list-style-type: none">• Know how to create multiple questions about the same field• Know how information can be recorded• Know how to order, sort, and group my data cards• Know how to navigate a flat-file database to compare different views of information• Know what a ‘field’ and a ‘record’ is in a database• Know which field to sort data by	<ul style="list-style-type: none">• Know and explain the relevance of data headings• Know how to answer questions from an existing data set• Know to ask simple relevant questions which can be answered using data• Know what an item of data is• Know how to apply an appropriate number format to a cell• Know how to build a data set in

<ul style="list-style-type: none"> objects Know how to organise data in a tally chart Know how to use a tally chart to create a pictogram Know what the pictogram shows Know how to tally objects using a common attribute Know how to create a pictogram to arrange objects by an attribute Know how to answer 'more than'/'less than' and 'most/least' questions about an attribute Know how to choose a suitable attribute to compare people Know how to collect the data I need Know how to create a pictogram and draw conclusions from it Know how to use a computer program to present information in different ways Know to share what I have found out using a computer Know to give simple examples of why information should not be shared 	<ul style="list-style-type: none"> Know how to arrange objects into a tree structure. Know how to select objects to arrange in a branching database. Know how to group objects using my own yes/no questions. Know how my branching database works. Know how to create yes/no questions using given attributes. Know how to explain that questions need to be ordered carefully to split objects into similarly sized groups. Know how to compare two branching database structures. Know how to select a theme and choose a variety of objects. Know how to create questions and apply them to a tree structure. Know how to use my branching database to answer questions. Know how to explain what a pictogram tells me. Know how to explain what a branching database tells me. Know how to compare two ways of presenting information. 	<ul style="list-style-type: none"> devices Know how to use data from a sensor to answer a given question Know that data from sensors can be recorded Know a suitable place to collect data Know the intervals used to collect data Know about the data that I have captured Know how to import a data set Know how to use a computer to view data in different ways Know how to use a computer program to sort data Know to propose a question that can be answered using logged data Know how to collect data using a data logger Know how to interpret data that has been collected using a data logger Know how to draw conclusions from the data that I have collected Know the benefits of using a data logger 	<ul style="list-style-type: none"> to answer a given question Know how information can be grouped Know how to group information to answer questions Know how to combine grouping and sorting to answer more specific questions Know which field and value are required to answer a given question Know how 'AND' and 'OR' can be used to refine data selection Know to choose multiple criteria to answer a given question Know to an appropriate chart to visually compare data Know to refine a chart by selecting a particular filter Know the benefits of using a computer to create graphs Know to ask questions that will need more than one field to answer Know how to refine a search in a real-world context 	<ul style="list-style-type: none"> a spreadsheet application Know and explain the relevance of a cell's data type Know how to construct a formula in a spreadsheet Know that changing inputs changes outputs Know that data can be calculated using different operations Know how to create a formula which includes a range of cells Know how to apply a formula to multiple cells by duplicating it Know how to use a spreadsheet to answer questions Know and explain why data should be organised Know and apply a formula to calculate the data I need to answer questions Know how to produce a graph Know how to use a graph to show the answer to questions Know when to use a table or graph
Key knowledge acquired throughout this unit				
<ul style="list-style-type: none"> Know how to describe objects using labels Know how to match objects to groups Know how to identify the label for a group of objects Know how to count objects Know how to group objects Know how to count a group of objects Know how to describe an object 				

- Know how to describe a property of an object
- Know how to find objects with similar properties
- Know how to group similar objects
- Know how to group objects in more than one way
- Know how to count how many objects share a property
- Know how to choose how to group objects
- Know how to describe groups of objects
- Know how to record how many objects are in a group
- Know how to decide how to group objects to answer a question
- Know how to compare groups of objects
- Know how to record and share what I have found

Subject knowledge and teacher guidance:

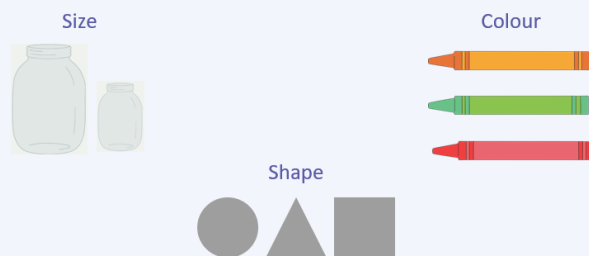
You will need to be aware that labelling, grouping, and searching are important aspects of data and information. Searching is a common operation in many applications, and requires an understanding that to search data, it must have labels. This unit of work focuses on assigning data (images) with different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

You will also need to be familiar with the term 'property'. A property is used to describe an object. For example, a ball will have a colour, which might be red; 'colour' is the property name, and 'red' is a specific property of the ball. Pupils will be introduced to the term 'attribute' in Year 2 – 'Pictograms'. The terms 'property' and 'attribute' are interchangeable, however, 'property' has been used with younger pupils to make it more accessible.

Throughout the unit, the term 'object' is used to describe anything that can be labelled with properties, eg animals, pencils, or trees. When talking about objects, they are named to make it easier for humans to know what other humans are talking about, eg 'tree'. The name may change depending on context (sometimes 'tree' is enough, but sometimes 'oak tree' may be required), but it is always a property that an object can be labelled with. A label is a property used to describe an object, eg 'green'. This is the data that is collected about the object.

You will also need to be aware that a collection of data is called a 'data set'.

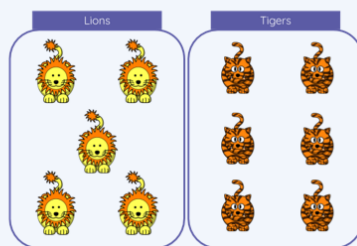
How to describe an object



Comparing groups

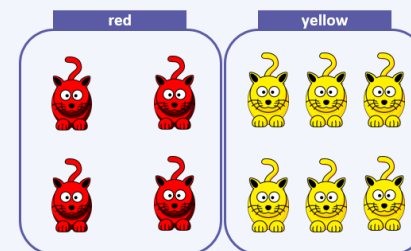
Comparing is when you look at what is similar and what is different.

You can compare objects or groups of objects.

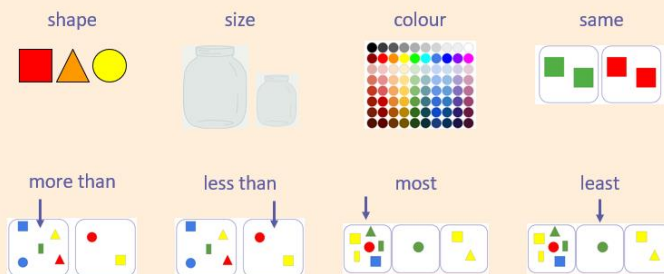


Examples of comparing words

more than
less than
same as
most
least



Vocabulary for describing



Subject specific vocabulary and definitions (Tier 3 vocabulary)

Property	Different ways of describing an object e.g blue, big, round etc
Object	Anything that can be labelled with properties e.g animals, shapes, trees etc
Data set	A collection of shapes, pictures, numbers that are all related
Group	Set of objects that all have something the same
Describe	Say what something looks like
Compare	Say what is the same and what is different

Medium Term Planning

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
To label objects	To identify that objects can be counted	To describe objects in different ways	To count objects with the same properties	To compare groups of objects	To answer questions about groups of objects

Year 1 – Spring 2		Unit 4 – Digital Writing			
National Curriculum Objectives:					
<ul style="list-style-type: none">• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content• Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies					
Unit Overview					
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.					
Note: Throughout this unit, learners will be logging in to the computers, opening their documents, and saving their documents. Additional support/time may be required to facilitate these steps and consideration should be given as to how this will impact the time spent in each lesson.					
In addition, in order to ensure that learners can learn key computing skills, it is recommended that auto-capitalisation and spelling and grammar suggestions are turned off before the learners begin this unit. These settings can be found under ‘Tools’ > ‘Spelling and grammar’.					
Previous Knowledge acquired - EYFS					
<ul style="list-style-type: none">• Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.• Read a few common exception words matched to the school’s phonic programme.• Read simple phrases and sentences made up of words with known letter–sound correspondences and, where necessary, a few exception words.• Form lower-case and capital letters correctly.• Spell words by identifying the sounds and then writing the sound with letter/s.• Write short sentences with words with known sound-letter correspondences using a capital letter and full stop.• Re-read what they have written to check that it makes sense.					
Progression of knowledge throughout the Computing curriculum – Digital Literacy					
Year 2	Year 3	Year 4	Year 5	Year 6	
<ul style="list-style-type: none">• Know and identify simple differences in pieces of music• Know to listen with concentration to a range of music (links to the Music curriculum)• Know how music makes me feel, e.g. happy or sad• Know how to create a rhythm pattern	<ul style="list-style-type: none">• Know the difference between text and images.• Know that text and images can communicate messages clearly.• Know I can identify the advantages and disadvantages of using text and images.• Know how to change font style, size, and colours for a given purpose.• Know how to edit text.	<ul style="list-style-type: none">• Know the changes that we can make to an image• Know how images can be changed in real life• Know the effect that editing can have on an image• Know what has changed in an edited image• Know how to change the composition of an image by selecting parts of it	<ul style="list-style-type: none">• Know that vector drawings are made using shapes• Know how to experiment with the shape and line tools• Know how vector drawings are different from paper-based drawings• Know the shapes used to make a vector drawing• Know that each element added to a vector drawing is an object	<ul style="list-style-type: none">• Know the similarities and differences between 2D and 3D shapes• Know why we might represent 3D objects on a computer• Know how to select, move, and delete a digital 3D shape• Know how graphical objects can be modified	

<ul style="list-style-type: none"> • Know how to play an instrument following a rhythm pattern • Know how to explain that music is created and played by humans • Know how to connect images with sounds • Know how to use a computer to experiment with pitch and duration • Know to relate an idea to a piece of music • Know that music is a sequence of notes • Know how to use a computer to create a musical pattern using three notes • Know how to describe an animal using sounds • Know to explain my choices • Know how to save my work • Know to refine my musical pattern on a computer • Know how to reopen my work • Know to explain how I made my work better • Know to listen to music and describe how it makes me feel 	<ul style="list-style-type: none"> • Know how to explain that text can be changed to communicate more clearly. • Know and can explain what 'page orientation' means. • Know how to recognise placeholders and say why they are important. • Know how to create a template for a particular purpose. • Know how to add content to a desktop publishing publication. • Know how to choose the best locations for my content. • Know how to paste text and images to create a magazine cover. • Know how to make changes to content after I've added it. • Know how different layouts can suit different purposes • Know how to identify different layouts. • Know how to match a layout to a purpose. • Know how to choose a suitable layout for a given purpose. • Know the benefits of desktop publishing • Know how to identify the uses of desktop publishing in the real world. • Know how to say why desktop publishing might be helpful. • Know how to compare work made on desktop publishing to work created by hand. 	<ul style="list-style-type: none"> • Know why someone might want to change the composition of an image • Know and talk about changes made to images • Know how to use effects to make my image fit a scenario • Know why my choices fit a scenario • Know how an image has been retouched • Know examples of positive and negative effects that retouching can have on an image • Know appropriate tools to retouch an image • Know how to sort images into 'fake' or 'real' and explain my choices • Know how to combine parts of images to create new images • Know the effect of adding other elements to my work • Know to compare the original image with my completed publication • Know to evaluate the impact of my publication on others through feedback 	<ul style="list-style-type: none"> • Know how to move, resize, and rotate objects I have duplicated • Know how to use the zoom tool to help me add detail to my drawings • Know how alignment grids and resize handles can be used to improve consistency • Know how to modify objects to create a new image • Know that each added object creates a new layer in the drawing • Know how to change the order of layers in a vector drawing • Know how to use layering to create an image • Know how to copy part of a drawing by duplicating several objects • Know how to recognise when I need to group and ungroup objects • Know how to reuse a group of objects to further develop my vector drawing • Know how to create a vector drawing for a specific purpose • Know to reflect on the skills I have used and why I have used them • Know how to compare vector drawings to freehand paint drawings 	<ul style="list-style-type: none"> • Know how to resize a 3D object • Know how to change the colour of a 3D object • Know how to rotate a 3D object • Know how to position 3D objects in relation to each other • Know how to select and duplicate multiple 3D objects • Know how to identify the 3D shapes needed to create a model of a real-world object • Know how to create digital 3D objects of an appropriate size • Know how to group a digital 3D shape and a placeholder to create a hole in an object • Know to plan my 3D model • Know which 3D objects I need to construct my model • Know how to modify multiple 3D objects • Know how my model can be improved • Know to modify my model to improve it • Know to evaluate my model against a given criterion
Key knowledge acquired throughout this unit				

- Know how to open a word processor
- Know keys on a keyboard
- Know how to enter text into a computer
- Know how to use letter, number, and space keys
- Know how to use backspace to remove text
- Know how to type capital letters
- Know where the toolbar is and use bold, italic, and underline
- Know how to select a word by double-clicking
- Know how to select all of the text by clicking and dragging
- Know how to change the font
- Know and say what tool I used to change the text
- Know if my changes have improved my writing
- Know how to use 'undo' to remove changes
- Know how to write a message on a computer and on paper
- Compare using a computer with using a pencil and paper
- Know which method I like best

Subject knowledge and teacher guidance:

All lessons: You will need to be familiar with the word processing software used in your school (Google Docs, Microsoft Word, or other) and the layout of the computer keyboard.

Lesson 2: You will also need to be familiar with the vocabulary used when talking about adding and removing text, including discussing the text cursor.

Lesson 3: You will also need to be familiar with what a number of the keys on a computer keyboard do. You will also need to be familiar with using the bold, italic, and underline toolbar buttons to format text on a computer.

Lesson 4: You will also need to be familiar with how to use the 'click and drag' method to select text. You will also need to be familiar with changing the font.

Lesson 5: You will also need to be familiar with what each toolbar button changes in the text.

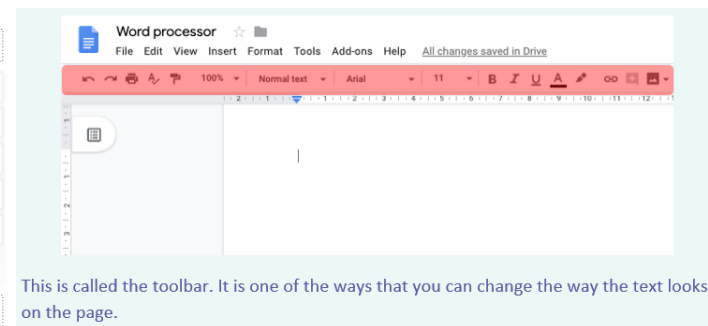
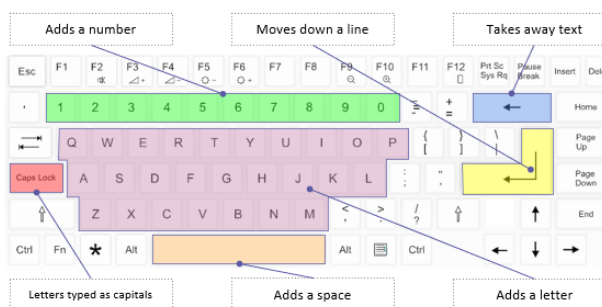
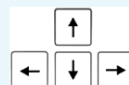
Text cursor

This tells you where your writing will appear.

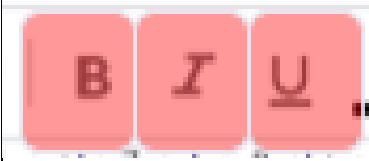
To move it, you can:

- Use the arrow keys or
- Move the mouse and click where you want it

h|i



This is called the toolbar. It is one of the ways that you can change the way the text looks on the page.



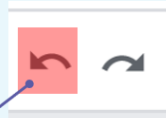
Bold, Italic, Underlined

Undo button

Think, pair, share

What happens when you undo something?

The 'Undo' arrow faces the same way as the Backspace key!



Redo button

If you undo something, the 'Redo' button will change it back.

The 'Redo' arrow faces the other way to the 'Undo' button!



Subject specific vocabulary and definitions (Tier 3 vocabulary)

Keys	The buttons on a keyboard
Undo	Change back what you have just done to how it was before
Redo	If you undo something, redo will change it back
Toolbar	Strip at the top where you can find tools
Text	Writing on a computer
Backspace	Delete

Medium Term Planning

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
To use a computer to write	To add and remove text on a computer	To identify that the look of text can be changed on a computer	To make careful choices when changing text	To explain why I used the tools that I chose	To compare writing on a computer with writing on paper

Year 1 – Summer 1		Unit 5 – Moving a Robot		
National Curriculum Objectives:				
<ul style="list-style-type: none">Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructionsCreate and debug simple programsUse logical reasoning to predict the behaviour of simple programsRecognise common uses of information technology beyond school				
Unit Overview				
<ul style="list-style-type: none">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.There are two year 1 programming units:<ul style="list-style-type: none">Programming A - Moving a robotProgramming B - Programming animations <p>This is unit A which should be delivered before unit B.</p>				
Previous Knowledge acquired - EYFS				
<ul style="list-style-type: none">Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.Select, rotate and manipulate shapes to develop spatial reasoning skills.				
Progression of knowledge throughout the Computing curriculum -				
Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">I can predict the outcome of a command on a deviceKnow how to match a command to an outcomeKnow how to run a command on a deviceKnow how to follow an instructionKnow how to recall words that can be acted outKnow how to give directionsKnow how to compare forwards and backwards movements	<ul style="list-style-type: none">Know all the objects in a Scratch project (sprites, backdrops)Know that objects in Scratch have attributes (linked to)Know that commands in Scratch are represented as blocksKnow that each sprite is controlled by the commands I chooseKnow a word which describes an on-screen action for my designKnow how to create a program following a design	<ul style="list-style-type: none">Know how to program a computer by typing commandsKnow the effect of changing a value of a commandKnow how to create a code snippet for a given purposeKnow how to use a template to draw what I want my program to doKnow how to write an algorithm to produce a given outcomeKnow how to test my	<ul style="list-style-type: none">Know how to build a simple circuit to connect a microcontroller to a computerKnow how to program a microcontroller to light an LEDKnow and explain why I used an infinite loopKnow how to connect more than one output device to a microcontrollerKnow how to design sequences for given output devicesKnow which output devices I control with a count-controlled loop	<ul style="list-style-type: none">Know examples of information that is variableKnow that the way that a variable changes can be definedKnow that variables can hold numbers or lettersKnow to identify a program variable as a placeholder in memory for a single valueKnow that a variable has a name and a valueKnow that the value of a variable can be changedKnow where in a program to change a variable

<ul style="list-style-type: none"> • Know to start a sequence from the same place • I can predict the outcome of a sequence involving forwards and backwards commands • Know to compare left and right turns • Know how to experiment with turn and move commands to move a robot • I can predict the outcome of a sequence involving up to four commands • Know how to what my program should do • Know how to choose the order of commands in a sequence • Know how to debug my program • Know to identify several possible solutions • Know how to plan two programs • Know how to use two different programs to get to the same place 	<ul style="list-style-type: none"> • Know how to start a program in different ways • Know how to create a sequence of connected commands • Know how to explain that the objects in my project will respond exactly to the code • Know how to explain what a sequence is • Know how to combine sound commands • Know how to order notes into a sequence • Know how to build a sequence of commands • Know how to decide the actions for each sprite in a program • Know how to make design choices for my artwork • Know the names of the objects I will need for a project • Know how to relate a task description to a design • Know how to implement my algorithm as code 	<p>algorithm in a text-based language</p> <ul style="list-style-type: none"> • Know examples of repetition in everyday tasks • Know how to identify patterns in a sequence • Know how to use a count-controlled loop to produce a given outcome • Know the effect of changing the number of times a task is repeated • Know to predict the outcome of a program containing a count-controlled loop • Know how to choose which values to change in a loop • Know where there are 'chunks' of actions in the real world • Know how to use a procedure in a program • Know that a computer can repeatedly call a procedure • Know how to design a program that includes count-controlled loops • Know how to make use of my design to write a program • Know how to develop my program by debugging it 	<ul style="list-style-type: none"> • Know that a condition is something that can be either true or false (eg whether a value is more than 10, or whether a button has been pressed) • Know to experiment with a 'do until' loop • Know how to program a microcontroller to respond to an input • Know that a condition being met can start an action • Know how to identify a condition and an action in my project • Know how to use selection (an 'if... then...' statement) to direct the flow of a program • Know how to identify a condition to start an action (real world) • Know and describe what my project will do (the task) • Know how to create a detailed drawing of my project • Know how to write an algorithm to control lights and a motor • Know to use selection to produce an intended outcome • Know how to test and debug my project 	<ul style="list-style-type: none"> • Know to make use of an event in a program to set a variable • Know that the value of a variable can be used by a program • Know how to choose the artwork for my project • Know to explain my design choices • Know how to create algorithms for my project • Know how to create the artwork for my project • Know to choose a name that identifies the role of a variable • Know how to test the code that I have written • Know ways that my game could be improved • Know how to extend my game further using more variables • Know how to share my game with others
Key knowledge acquired throughout this unit				

- I can predict the outcome of a command on a device
- Know how to match a command to an outcome
- Know how to run a command on a device
- Know how to follow an instruction
- Know how to recall words that can be acted out
- Know how to give directions
- Know how to compare forwards and backwards movements
- Know to start a sequence from the same place
- I can predict the outcome of a sequence involving forwards and backwards commands
- Know to compare left and right turns
- Know how to experiment with turn and move commands to move a robot
- I can predict the outcome of a sequence involving up to four commands
- Know how to what my program should do
- Know how to choose the order of commands in a sequence
- Know how to debug my program
- Know to identify several possible solutions
- Know how to plan two programs
- Know how to use two different programs to get to the same place

Subject knowledge and teacher guidance:

This unit focuses on developing learners' understanding of computer programming. It highlights that algorithms are a set of clear, precise and ordered instructions and that a computer program is the implementation of an algorithm on a digital device. The unit also introduces reading 'code' to predict what a program will do. Learners will engage in aspects of program design, including outlining the project task and creating algorithms.

When programming, there are four levels that can help describe a project, known as levels of abstraction. Research suggests that this structure can support learners in understanding how to create a program and how it works:

Task – what is needed

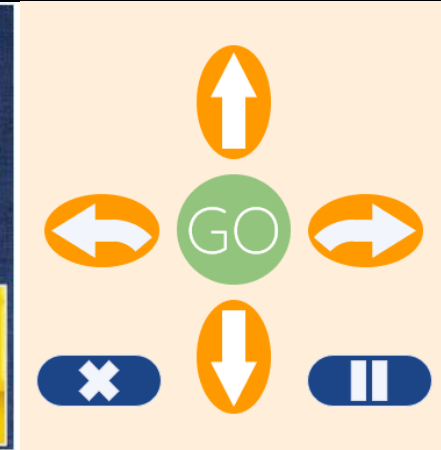
Design – what it should do

Code – how it is done

Running the code – what it does

Spending time at the task and design levels before engaging in code writing aids learners in assessing the achievability of their programs and reduces a learner's cognitive load during programming.

These are all robots



Subject specific vocabulary and definitions (Tier 3 vocabulary)

Program	A set of ordered commands that can be run by a computer
Algorithm	A precise set of ordered steps (that can be followed by a human or a computer to achieve a task)
Code	The commands that a computer can run
Command	A single instruction (that can be used in a program to control a computer)
Debugging	Finding and correcting errors (in a program)

Medium Term Planning

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
To explain what a given command will do	To act out a given word	To combine forwards and backwards commands to make a sequence	To combine four direction commands to make sequences	To plan a simple program	To find more than one solution to a problem

Year 1 – Summer 2		Unit 6 – Programming Animations		
National Curriculum Objectives:				
<ul style="list-style-type: none">Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructionsCreate and debug simple programsUse logical reasoning to predict the behaviour of simple programs				
Unit Overview				
<ul style="list-style-type: none">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.There are two Year 1 programming units:<ul style="list-style-type: none">Programming A – Moving a robotProgramming B – Programming animationsThis is unit B, which should be delivered after unit A. <p>All the lessons in this unit require access to ScratchJr.</p>				
Previous Knowledge acquired - EYFS				
<ul style="list-style-type: none">Recognise some environments that are different from the one in which they live.Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.Return to and build on their previous learning, refining ideas and developing their ability to represent them.Create collaboratively, sharing ideas, resources and skills.				
Progression of knowledge throughout the Computing curriculum – Programming B				
Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">Know where the start of a sequence isKnow that a program needs to be startedKnow how to run my programKnow to predict the outcome of a sequence of commandsKnow how to match two sequences with the same outcomeKnow how to change the outcome of a sequence of commandsKnow how to work out the actions of a sprite in an algorithmKnow which blocks to use to meet the design	<ul style="list-style-type: none">Know the relationship between an event and an actionKnow which keys to use for actions and explain my choicesKnow a way to improve a programKnow a suitable size for a character in a mazeKnow how to program movementKnow how to use a programming extensionKnow to consider the real world when making design choicesKnow which blocks to use to set up my programKnow additional features (from a given set of blocks)Know suitable keys to turn on	<ul style="list-style-type: none">Know an everyday task as a set of instructions including repetitionKnow to predict the outcome of a snippet of codeKnow how to modify a snippet of code to create a given outcomeKnow how to modify loops to produce a given outcomeKnow when to use a count-controlled and an infinite loopKnow that some programming languages enable more than one process to be run at onceKnow which action will be repeated for each objectKnow what the outcome of the repeated action should be	<ul style="list-style-type: none">Know how conditions are used in selectionKnow how to identify conditions in a programKnow how to modify a condition in a programKnow how to use selection in an infinite loop to check a conditionKnow to identify the condition and outcomes in an ‘if... then... else...’ statementKnow how to create a program with different outcomes using selection	<ul style="list-style-type: none">Know how to apply my knowledge of programming to a new environmentKnow how to test my program on an emulatorKnow how to transfer my program to a controllable deviceKnow how to identify examples of conditions in the real worldKnow to use a variable in an if, then, else statement to select the flow of a programKnow how to determine the

<ul style="list-style-type: none"> • Know how to build the sequences of blocks I need • Know how to choose backgrounds for the design • Know how to choose characters for the design • Know how to create a program based on the new design • Know how to choose the images for my own design • Know how to create an algorithm • Know how to build sequences of blocks to match my design • Know how to compare my project to my design • Know how to improve my project by adding features • Know how to debug 	<ul style="list-style-type: none"> • Know how to build more sequences of commands to make my design work • Know how to test a program against a given design • Know how to match a piece of code to an outcome • Know how to modify a program using a design • Know to make design choices and justify them • Know how to implement my design • Know to evaluate my project 	<ul style="list-style-type: none"> • Know to evaluate the effectiveness of the repeated sequences used in my program • Know which parts of a loop can be changed • Know the effect of my changes • Know to re-use existing code snippets on new sprites • Know to evaluate the use of repetition in a project 	<ul style="list-style-type: none"> • Know that program flow can branch according to a condition • Know how to design the flow of a program which contains 'if... then... else...' • Know that a condition can direct program flow in one of two ways • Know how to outline a given task • Know how to use a design format to outline my project • Know how to identify the outcome of user input in an algorithm • Know how to implement my algorithm to create the first section of my program • Know how to test my program • Know how to share my program with others • Know to identify ways the program could be improved • Know how to identify the setup code I need in my program • Know how to extend my program further 	<p>flow of a program using selection</p> <ul style="list-style-type: none"> • Know to use a condition to change a variable • Know how to experiment with different physical inputs • Know that if you read a variable, the value remains • Know the importance of the order of conditions in else, if statements • Know how to use an operand (e.g. <=>) in an if, then statement • Know how to modify a program to achieve a different outcome • Know what variables to include in a project • Know how to design the algorithm for my project • Know how to design the program flow for my project • Know how to create a program based on my design • Know how to test my program against my design <p>Know to use a range of approaches to find and fix bugs</p>
Key knowledge acquired throughout this unit				
<ul style="list-style-type: none"> • I can find the commands to move a sprite • I can use commands to move a sprite • I can compare different programming tools • 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
- I can find blocks that have numbers
- I can change the value
- I can say what happens when I change a value
- 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
- I can choose appropriate artwork for my project
- I can decide how each sprite will move
- I can create an algorithm for each sprite
- 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

Subject knowledge and teacher guidance:

The unit focuses on developing learners' understanding of computer programming. It highlights that algorithms are a set of clear, precise, and ordered instructions, and that a computer program is the implementation of an algorithm on a digital device. The unit also introduces reading 'code' to predict what a program will do. Learners will engage in aspects of program design, including outlining the project task and creating algorithms.

When programming, there are four levels that can help describe a project, known as levels of abstraction. Research suggests that this structure can support learners in understanding how to create a program and how it works:

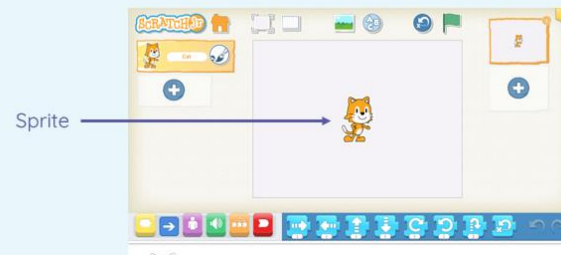
- Task – what is needed
- Design – what it should do
- Code – how it is done
- Running the code – what it does

Spending time at the 'task' and 'design' levels before engaging in code writing aids learners in assessing the achievability of their programs, and reduces a learner's cognitive load during programming.

Programming blocks



Sprites



Start blocks

Start blocks in Scratch Jr are yellow. These are used to start or run your program.



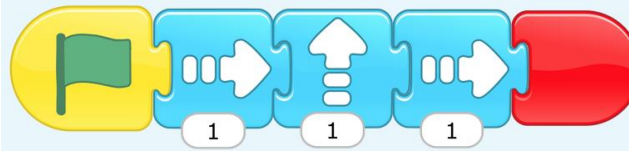
End blocks

End blocks in ScratchJr are red. These are used to show what happens at the end of your program.



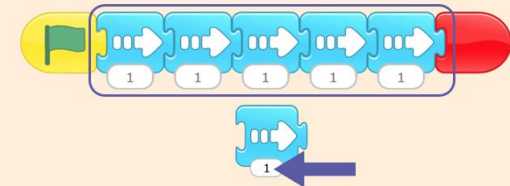
Creating programs

When you create programs in ScratchJr you can link the blocks together like a jigsaw.



Using one block to do the same thing

Instead of using all these blocks:



We can use one block and change the number underneath.

Subject specific vocabulary and definitions (Tier 3 vocabulary)

Algorithm	A precise set of ordered steps (that can be followed by a human or a computer to achieve a task)
Code	The commands that a computer can run
Program	A set of ordered commands (that can be run by a computer to complete a task)
Sprite	A character
Debugging	Finding and correcting errors (in a program)
Blocks	Small pieces of programme that can be stuck together to form a sequence
Value	Number

Medium Term Planning

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
To choose a command for a given purpose	To show that a series of commands can be joined together	To identify the effect of changing a value	To explain that each sprite has its own instructions	To design the parts of a project	To use my algorithm to create a program