




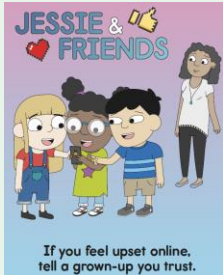
# Computing








# Year 1






# Year 1 Autumn 1: Programming A – Moving a Robot

Key Vocabulary		I will be using:	Key Knowledge
<b>command</b>	Commands cause a computer to perform a certain operation when typed or spoken (forwards, backwards, left, right).	<p><b>Bee-Bot</b></p>  <p><b>buttons</b></p>  <p><b>commands</b></p> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> I know that I can give a robot commands to make it move.</li> <li><input type="checkbox"/> I know that a series of commands can be joined together</li> <li><input type="checkbox"/> I know how to make a robot follow a simple route.</li> <li><input type="checkbox"/> I can explain what a given command will do.</li> <li><input type="checkbox"/> I can combine forwards and backwards commands to make a sequence</li> <li><input type="checkbox"/> I can combine four directions to make a sequence.</li> <li><input type="checkbox"/> I can plan a simple program.</li> </ul>
<b>instruction</b>	A set of commands that makes the computer complete a sequence.		
<b>digital device</b>	A piece of hardware that contains a computer or microcontroller. Computers, smartphones, tablets and smartwatches are just a few examples of digital devices.		
<b>direction</b>	forwards, backwards, left, right		
<b>sequence</b>	More than one instruction to be followed in order.		
<b>program</b>	A list of instructions that tells a computer exactly what to do.	<p><b>Online Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I know what might happen if a picture is shared online.</li> <li><input type="checkbox"/> I know some ways of keeping myself and others safe online.</li> <li><input type="checkbox"/> I know who my trusted adult is.</li> <li><input type="checkbox"/> I can ask a trusted adult for help if I feel sad, worried, uncomfortable or frightened about something online.</li> </ul>	
<b>debug</b>	Find and fix mistakes in a computer program.		

# Year 1 Autumn 2: Technology around us

Key Vocabulary		I will be using:	Key Knowledge
<b>technology</b>	Anything made by people that help us.	 <p>computer</p>  <p>keyboard</p>  <p>mouse</p>  <p>CURSOR</p>	<input type="checkbox"/> I know how to identify technology and know how it helps us. <input type="checkbox"/> I know how to identify a computer and its main parts. <input type="checkbox"/> I can create rules for using technology safely. <input type="checkbox"/> I can use a mouse in different ways. <input type="checkbox"/> I can use a keyboard to type. <input type="checkbox"/> I can use a keyboard to edit text.
<b>computer</b>	A computer is a device for working with information. The information can be numbers, words, pictures, videos, or sounds.		
<b>mouse</b>	An input device used by clicking buttons.		
<b>keyboard</b>	An input device used for typing.		
<b>right-click</b>	Pressing the right mouse button.		
<b>left-click</b>	Pressing the left mouse button.		
<b>click and drag</b>	Clicking and holding the left mouse button with the cursor over certain objects to move them on screen		
<b>type</b>	Pressing the keys on a computer keyboard.		
<b>edit</b>	Changing what has been written on the computer.		
<b>cursor</b>	A movable point on the screen that shows where the mouse is pointing.		
			<h2>Online Safety</h2> <input type="checkbox"/> I know some rules for staying safe online.
			

# Year 1 Spring 1: Introduction to Animation

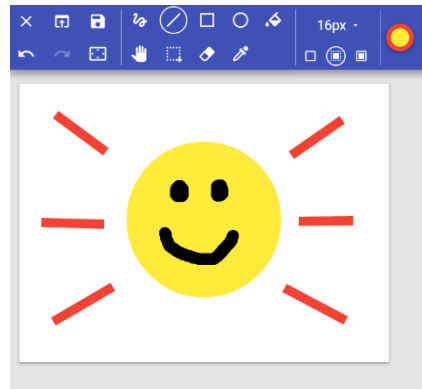
Key Vocabulary		I will be using:	Key Knowledge
<b>sprite</b>	Sprites are objects in Scratch that can be programmed to move around and do other things.	 <p>sprite</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I know that a series of commands can be joined together.</li> <li><input type="checkbox"/> I know the effect of changing a value.</li> <li><input type="checkbox"/> I know that each sprite (in Scratch Jr) has its own instructions.</li> <li><input type="checkbox"/> I can choose a command for a given purpose.</li> <li><input type="checkbox"/> I can design an algorithm for each sprite (in Scratch Jr).</li> <li><input type="checkbox"/> I can use an algorithm to create a program.</li> </ul>
<b>command</b>	An instruction that tells the sprite what to do.		
<b>program</b>	A list of commands that tells the computer exactly what to do.		
<b>value</b>	A value is part of a program that can change (e.g. how far the sprite moves)		
<b>algorithm</b>	Step by step instructions to solve a problem.		
<b>debug</b>	find and fix mistakes in a computer program.		
<b>personal information</b>	Personal information identifies who we are and where we live. We need to be careful about who we share our personal information with.	<p>commands</p> 	
<p>program</p> 		<h2>Online Safety</h2> <ul style="list-style-type: none"> <li><input type="checkbox"/> I know some examples of information that is personal to me.</li> </ul> <div style="background-color: #e0f2f1; padding: 10px; border-radius: 15px;"> <ul style="list-style-type: none"> <li><input type="checkbox"/> My name.</li> <li><input type="checkbox"/> My age.</li> <li><input type="checkbox"/> Where I live.</li> <li><input type="checkbox"/> Where I go to school.</li> </ul> </div>	

# Year 1 Spring 2: Digital Painting

## Key Vocabulary

<b>digital picture</b>	A picture that is made on the computer.
<b>airbrush</b>	A tool that gives a spray paint effect.
<b>fill</b>	A tool that fills a shape or area with a selected colour.
<b>eraser</b>	A tool for rubbing out.
<b>undo</b>	A tool for undoing your last action.
<b>line</b>	A tool for drawing straight lines.
<b>shape</b>	A tool for drawing rectangles or ovals.

## I will be using:

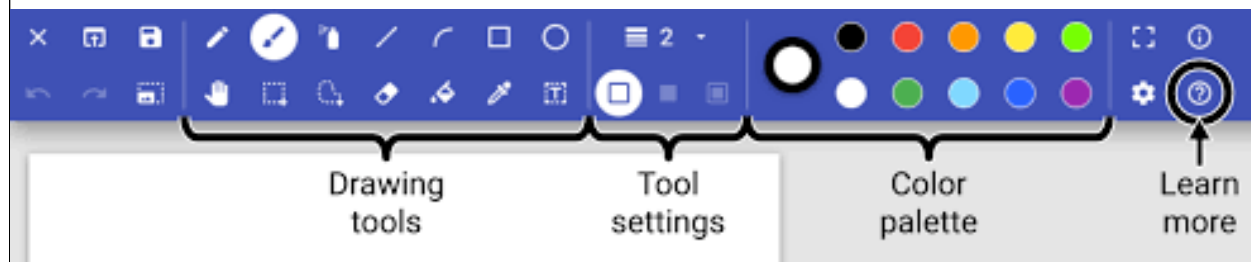


## Key Knowledge

- I know that paintings and drawings can be created in different ways.
- I can use freehand paint tools to draw a picture.
- I can use shape and line tools in drawing software.
- I can make careful choices when painting a digital picture.
- I can explain choices about tools being used.
- I can use a computer to create a picture using a range of tools.
- I can compare painting a picture on the computer and on paper.

## Online Safety

- I know why I should always ask a trusted adult before I share any information about myself online.



**Who is your trusted adult?**

# Year 1 Summer 1: Grouping Data

## Key Vocabulary

<b>label</b>	A word or name used to describe or classify an object.
<b>object</b>	Something that can be labelled with properties.
<b>group</b>	Objects that are put together because they have similar properties.
<b>property</b>	Features or attributes of an object that can be used to label or group it.

## I will be using:



## Key Knowledge

- I know that data can be sorted into different groups.
- I can describe objects using labels.
- I can count objects and groups of objects.
- I can describe objects in different ways.
- I can group objects in more than one way.
- I can compare groups of objects.
- I can answer questions about groups of objects.

## Online Safety

- I know how passwords can be used to protect information and devices.
- I know that passwords should not be shared with others.



Are there **more** lemons or oranges?

# Year 1 Summer 2: Digital Writing

## Key Vocabulary

## I will be using:

## Key Knowledge

**word processor**

A computer program that allows you to create and edit text.

**keys**

The 'buttons' on the computer keyboard.

**text**

Words on the screen

**font**

The design of the text.

**double-click**

Quickly click the mouse button twice.

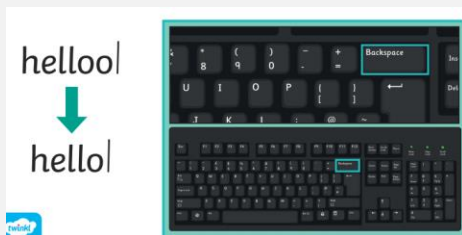
**undo**

Click undo to change your last action back.



- I know how the look of text can be changed on a computer.
- I know that music can make people feel different emotions.
- I know that there are patterns in music and create a rhythm pattern.
- I can use a computer to write.
- I can identify and find keys on a keyboard.
- I can add and remove text on a computer.
- I can make careful choices when changing text.
- I can explain why I used the tools that I chose.
- I can compare writing on a computer with using pencil and paper.

**Press the Backspace key to delete the text you just typed.**



**Press the Space Bar to put a space between the words.**



## Online Safety

- I know that there may be people online who could make me feel sad, embarrassed or upset.

# Year 2



# Year 2 Autumn 1: Technology Around Us

## Key Vocabulary

### Revisit Year 1 technology vocabulary

#### information technology

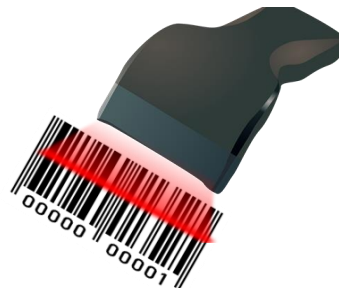
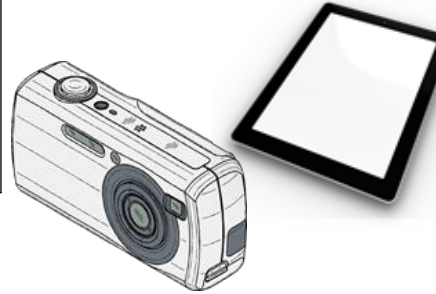
Anything that is a computer, has a computer inside or works with computers.

#### digital device

A piece of hardware that contains a computer or microcontroller. Computers, smartphones, tablets and smartwatches are just a few examples of digital devices.

## I will know about:

different types of information technology




## Key Knowledge

- I know the uses and features of information technology.
- I know and can explain how information technology benefits us.
- I know that choices are made when using information technology.
- I can identify information technology in the home.
- I can identify information technology beyond school.
- I can use information technology safely.

## Online Safety

- I know what personal information is and the importance of not sharing it.
- I know adults in my life who I trust and know how to ask them for help if I have a problem online.

# Year 2 Autumn 2: Programming A – Robot Algorithms

Key Vocabulary		I will be using:	Key Knowledge
<b>floor robot</b>	A robot that can be programmed to move on the floor (e.g. Bee-Bot)	<p><b>Bee-Bot</b></p> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> I know how to describe a series of instructions as a sequence.</li> <li><input type="checkbox"/> I know what happens when we change the order of instructions.</li> <li><input type="checkbox"/> I can use an algorithm to program a sequence on a floor robot.</li> <li><input type="checkbox"/> I can use logical reasoning to predict the outcome of a program.</li> <li><input type="checkbox"/> I can design an algorithm and use it to create a program that achieves a goal.</li> <li><input type="checkbox"/> I can create and debug a program I have written.</li> </ul>
<b>algorithm</b>	Step by step instructions to solve a problem.		
<b>program</b>	A list of instructions that tells a computer exactly what to do.		
<b>debug</b>	Find and fix mistakes in a computer program.		
<b>sequence</b>	More than one instruction to be followed in order.		

buttons



commands



## Online Safety

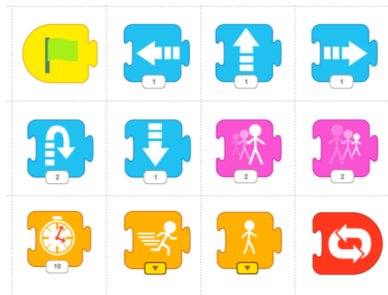
- I can explain some rules about staying safe online.

# Year 2 Spring 1: Programming B – An introduction to Quizzes

## Key Vocabulary

<b>command</b>	An instruction that tells the sprite what to do.
<b>sequence</b>	More than one instruction to be followed in order.
<b>program</b>	A list of instructions that tells a computer exactly what to do.
<b>outcome</b>	What happens when the sprite follows your commands.
<b>debug</b>	Find and fix mistakes in a computer program.

### command



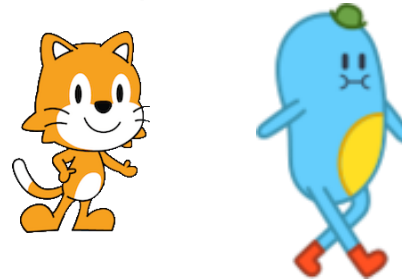
### Sequence



## I will be using:



sprite



background



## Key Knowledge

- I know that a sequence of commands has a start.
- I know that a sequence of commands has an outcome.
- I know different ways a project can be improved.
- I know how to create a program using a given design.
- I know how to make changes to backdrops and characters in a design.
- I know how to create a program using my own design.

## Online Safety

- I know some rules for keeping my information private.
- I can explain some rules for keeping my information private.

# Year 2 Spring 2: Digital Photography

## Key Vocabulary

**photograph**

A picture or likeness obtained by photography. Photographs can be taken with cameras and some other digital devices.

**effects**

Different ways to change what a photograph looks like.

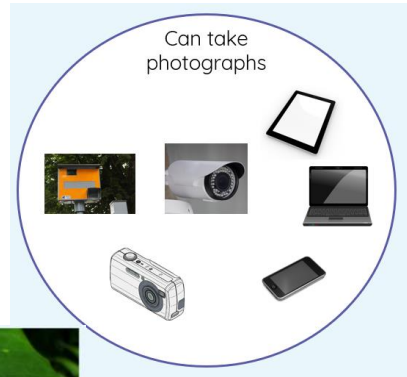
**digital device**

A piece of hardware that contains a computer or microcontroller. Computers, smartphones, tablets and smartwatches are just a few examples of digital devices.

**password**

A secret word, phrase, or group of numbers, letters and symbols that a person must know to be allowed to enter a place or use a computer system

## I will be using:



## Key Knowledge

- I know what devices can be used to take photographs.
- I know what makes a good photograph.
- I know that images can be changed and how to use tools to change an image.
- I can use a digital device to take a photograph.

## Online Safety

- I know what passwords are and can use passwords for my accounts and devices.
- I can explain what passwords are and can use passwords for my accounts and devices.



**Positioning:** Is it obvious what the main subject of the photograph is?



**Framing:** Have you included everything you wanted to?



**Subject:** Are you close enough that you can see the detail?



editing photos

\*\*\*\*\*



# Year 2 Summer 1: Making Music

## Key Vocabulary

**rhythm**

A pattern of long and short sounds.

**pitch**

How high or low a sound is.

**duration**

The length of time each note is played for.

**tempo**

The speed of the music.

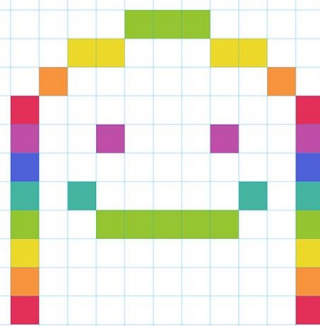
## I will be using:



**Rhythm**



**Kandinsky**



**Song Maker**

## Key Knowledge

- I know that music can make people feel different emotions.
- I know that there are patterns in music and create a rhythm pattern.
- I can connect images with sounds.
- I can use a computer to experiment with pitch and duration.
- I can use a computer to create and refine a musical pattern.
- I can save and reopen work.

## Online Safety

- I know that other people may look and act differently online and offline.



# Year 2 Summer 2: Pictograms

## Key Vocabulary

**data**

Information gathered by observing, questioning or measuring.

**compare**

Look for similarities and differences between data. Solve data problems.

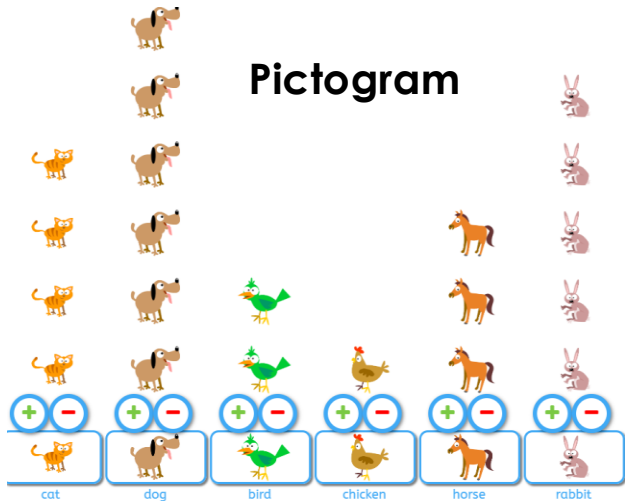
## I will be using:



## Key Knowledge

- I know that we can count and compare objects using tally charts.
- I know that objects can be represented in pictures.
- I can enter data onto a computer.
- I can create a pictogram on the computer.
- I can compare simple data.
- I can present information using a computer in different ways.

### Pictogram



### Tally Chart

	TALLY	NUMBER
spider		11
ant		22
snail		3
butterfly		6
bee		8






## Online Safety

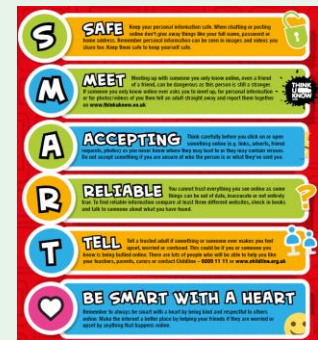
- I know examples of issues online that might make me feel sad, worried, uncomfortable or frightened.
- I can give examples of how I might get help.

# Year 3



# Year 3 Autumn 1: Connecting Computers

Key Vocabulary		I will know about:	Key Knowledge
<b>digital device</b>	A piece of hardware that contains a computer or microcontroller. Computers, smartphones, tablets and smartwatches are just a few examples of digital devices.	<p>input</p>  <p>output</p> 	<ul style="list-style-type: none"> <li>I know how digital devices function.</li> <li>I know how digital devices can change the way we work.</li> <li>I know and can explain how a computer network can be used to share information.</li> </ul>
<b>input</b>	Data that goes into a computer.	<p>computer network</p> 	<ul style="list-style-type: none"> <li>I know the physical components of a network.</li> </ul>
<b>output</b>	Information that comes out of a computer.		<p>network switch</p> 
<b>non-digital</b>	Not relating to or using computers.	<p>wireless access point</p> 	<h2>Online Safety</h2> <ul style="list-style-type: none"> <li>I know reasons why I should only share information with people I choose to and can trust.</li> <li>I know SMART rules for staying on safe online.</li> </ul>
<b>network</b>	A collection of computers connected to each other.		
<b>server</b>	A server is a computer equipped with specific programs and/or hardware that enables it to offer services to other computers on its network.		
<b>wireless access point</b>	A device that allows people to connect Wi-Fi devices such as laptop computers on a wireless LAN, to a wired network.		
<b>network switch</b>	A network switch connects multiple devices, such as computers, wireless access points, printers, and servers; on the same network		



**S SAFE** Keep your personal information safe. When chatting or posting online, don't give away things like your full name, password or home address. Remember personal information can be used to track you and where you live. Be safe when you're online!

**M MEET** Don't meet up with someone you only know online, even a friend of a friend, until you have met them in person and you're safe. If someone asks you to meet up, you should go to a public place, like a cafe or library, and tell a trusted adult. Remember personal information can be used to track you and where you live. Be safe when you're online!

**A ACCEPTING** Think carefully before you click on or open something you don't know. It could be a virus, malware or spyware. Don't accept cookies if you are unsure of what they are for or what they can do. Remember personal information can be used to track you and where you live. Be safe when you're online!

**R RELIABLE** We cannot trust everything you see online. It could be a hoax or a lie. Remember personal information can be used to track you and where you live. Be safe when you're online!

**T TELL** Tell a trusted adult if something or someone ever makes you feel uncomfortable or confused. This could be if you see someone you know in a chat room, or if you see someone you know in a chat room. Remember personal information can be used to track you and where you live. Be safe when you're online!

**BE SMART WITH A HEART** Remember to always be smart with a healthy, happy heart and respect for others. Remember personal information can be used to track you and where you live. Be safe when you're online!

# Year 3 Autumn 2: Programming A – Sequencing Sounds

## Key Vocabulary

## I will be using:

## Key Knowledge

**sprite**

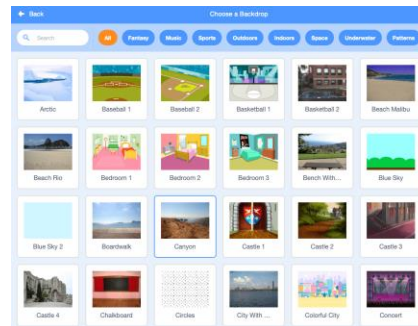
Sprites are objects in Scratch that can be programmed to move around and do other things.



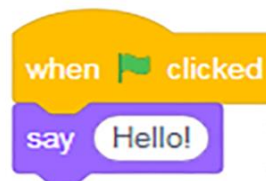
sprite



background



command block



**backdrop**

A backdrop is a picture that forms the background to your Scratch creation.

**command block**

Command blocks are used to build your program in Scratch. They fit together to form your script.

**script**

A set of command block that tell sprites and other objects what to do in your program.

**code**

Instructions for computers using programming languages. In Scratch, the script is the code.

**algorithm**

Step by step instructions to solve a problem.

**debug**

Find and fix mistakes in a computer program.

**sequence**

More than one instruction to be followed in order.

- I know that commands have an outcome.
- I know that objects in a project will respond exactly to the code.
- I know that a sequence of commands can have an order.
- I can identify objects in a new programming environment (Scratch).
- I can create a sequence of connected commands.
- I can create a project from a task description.
- I can choose an appropriate command for a desired outcome.

## Online Safety

- I know reasons why I should only share information with people I choose to and can trust.
- I know that if I am not sure or feel pressured, I should ask a trusted adult.

# Year 3 Spring 1: Programming B – Events and Actions

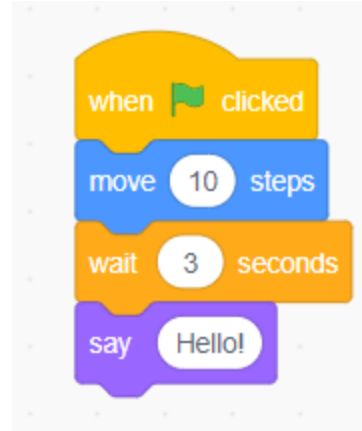
## Key Vocabulary

<b>event</b>	Events blocks tell Scratch when to start running the program by setting a triggering moment, such as clicking the green flag.
<b>action</b>	In Scratch, an action is what the sprite does. You control the sprite's actions using command blocks.
<b>program</b>	A list of instructions that tells a computer exactly what to do.
<b>command blocks</b>	Command blocks are used to build your program in Scratch. They fit together to form your script.
<b>debug</b>	Find and fix mistakes in a computer program.
<b>sequence</b>	More than one instruction to be followed in order.

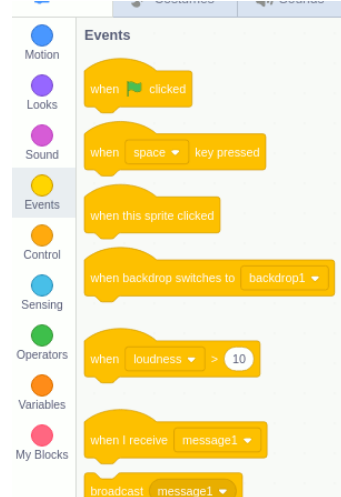


## I will be using:

### sequence



### event command blocks



## Key Knowledge

- I know and can explain the relationship between an event and an action.
- I know which command blocks to choose to set up a program.
- I can create a program (in Scratch) to move a sprite in four directions.
- I can develop a program by adding features (from a given set of blocks).
- I can identify and fix bugs in a program.
- I can design and create a maze-based challenge.

## Online Safety

- I know simple strategies for creating and keeping passwords private.
- I can explain why it is important to keep passwords private

Password123|

Your password is weak!

# Year 3 Spring 2: Digital Animation

## Key Vocabulary

## I will be using:

## Key Knowledge

**animation**

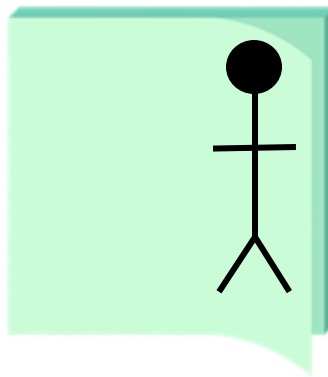
An animation is where a number of pictures are drawn or taken of an object or picture, and the pictures are shown quickly, which makes it look like the object or picture is moving.

**frame**

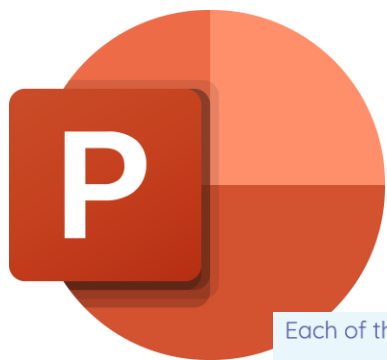
Each of the pictures that you take or draw to make an animation is called a frame.

**stop frame animation**

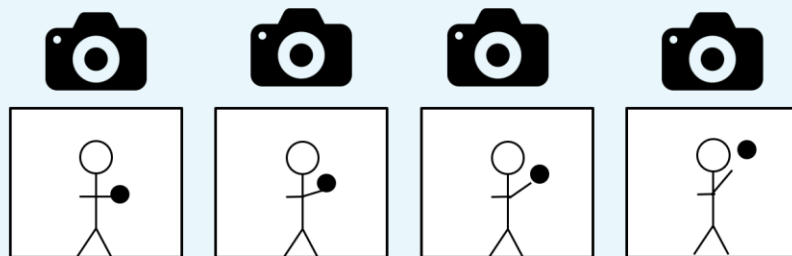
Stop frame animation (also called stop motion) is animation that is captured one frame at a time, with objects that are moved between frames.



- I know that animation is a sequence of drawings or photographs.
- I can relate animated movement with a sequence of images.
- I can take a series of photographs to create an animation.
- I can add other media in an animation.
- I can use video software to compile an animation.



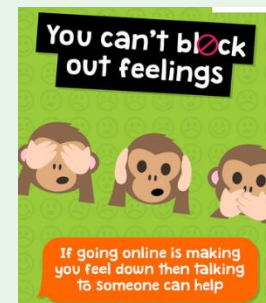
Each of the pictures that you take to make your animation is called a frame.



How many frames are in this animation?

## Online Safety

- I know that that someone's feelings can be hurt by what is said or written online.



# Year 3 Summer 1: Desktop Publishing

## Key Vocabulary

<b>text</b>	words
<b>image</b>	a picture
<b>layout</b>	How text and images are organised on a page/screen.
<b>font</b>	How text appears on the screen or in printed text. You can change the size and style of the font.
<b>content</b>	The information included in a magazine or newspaper.

## I will be using:



## Key Knowledge

- I know that text and images convey information.
- I know that different layouts suit different purposes.
- I know when desktop publishing may be helpful in the real world.
- I can edit text and layout to communicate more clearly.
- I can alter page settings in a desktop publishing application.
- I can add content to a desktop publishing publication.

## Online Safety

- I know what it means to 'know someone' online and why this might be different from knowing someone in real life.



# Year 3 Summer 2: Branching Databases

## Key Vocabulary

## I will be using:

## Key Knowledge

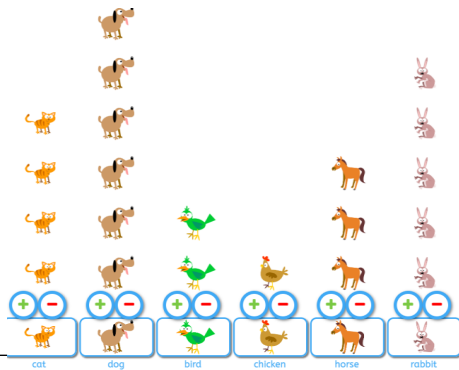
**data**

Information gathered by observing, questioning or measuring.

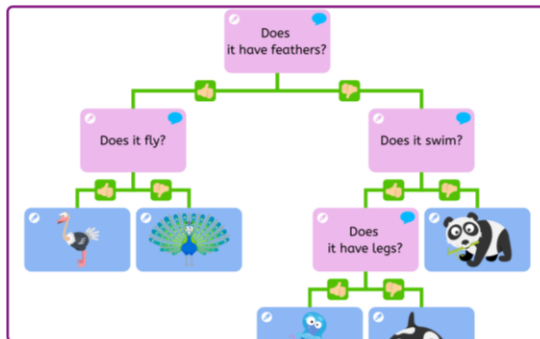
**database**

A way to store data in an organised way, making it easier to search for the information you need.

**pictogram**



**branching database**



- I know why it is helpful for a database to be well structured.
- I can create questions with yes/no answers.
- I can identify the object attributes needed to collect relevant data.
- I can create a branching database.
- I can use a branching database to identify objects.
- I can compare information shown in a pictogram with a branching database.



## Online Safety

- I know that it is important to be careful about who I trust online.



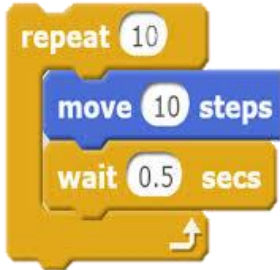
# Year 4




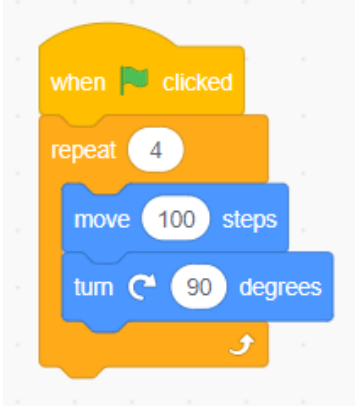

# Year 4 Autumn 1: The Internet

Key Vocabulary		I will know about:	Key Knowledge
<b>network</b>	A collection of computers connected to each other.	<p>the World Wide Web (WWW)</p>  <p>the internet</p> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> I know and can describe how networks physically connect to other networks.</li> <li><input type="checkbox"/> I know how network devices make up the internet.</li> <li><input type="checkbox"/> I have a basic knowledge of how websites can be shared via the World Wide Web (WWW).</li> <li><input type="checkbox"/> I know how content can be added and accessed on the WWW.</li> <li><input type="checkbox"/> I know how the content of the WWW is created by people.</li> <li><input type="checkbox"/> I can evaluate the consequences of unreliable content.</li> </ul>
<b>internet</b>	A global computer network that provides information and communication opportunities.		
<b>World Wide Web</b>	The World Wide Web is part of the internet where we can visit web pages and websites.		
<b>digital device</b>	A piece of hardware that contains a computer or microcontroller. Computers, smartphones, tablets and smartwatches are just a few examples of digital devices.		
<b>consequences</b>	Something that happens as a result of someone's actions.		
<b>evaluate</b>	To judge the quality or value of something.		
			<h2>Online Safety</h2>
			<ul style="list-style-type: none"> <li><input type="checkbox"/> I know examples of content which may be appropriate or inappropriate to share online.</li> <li><input type="checkbox"/> I know appropriate people to turn to for help.</li> <li><input type="checkbox"/> I can identify appropriate people to turn to for help.</li> </ul>




# Year 4 Autumn 2: Programming A - Repetition in Shapes

Key Vocabulary		I will be using:	Key Knowledge
<b>accurate</b>	Without mistakes.	<p>Logo software</p>   <p>count-controlled loops</p>  <p>repeat 4 [fd 100 rt 90]</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I know how technology can be used positively.</li> <li><input type="checkbox"/> I know that accuracy in programming is important.</li> <li><input type="checkbox"/> I can write and test an algorithm to produce a given outcome using Logo commands.</li> <li><input type="checkbox"/> I can identify repetition in everyday tasks and in a sequence.</li> <li><input type="checkbox"/> I can use and modify a count-controlled loop to produce a given outcome.</li> <li><input type="checkbox"/> I can decompose a task into small steps.</li> <li><input type="checkbox"/> I can create a program that uses count-controlled loops to produce a given outcome.</li> <li><input type="checkbox"/> I can develop a program by debugging it.</li> </ul>
<b>algorithm</b>	Step by step instructions to solve a problem.		
<b>outcome</b>	The result of following the instructions in an algorithm or program.		
<b>command</b>	Commands cause a computer to perform a certain operation when typed or spoken ( e.g. forwards, backwards, left, right).		
<b>repetition</b>	Doing the same instruction more than once.		
<b>count-controlled loop</b>	Count-controlled loops are used to make a computer do the same thing a specific number of times.		
<b>decompose</b>	Breaking down into small steps.		<p>Online Safety</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I know that some people may try to pressure and manipulate others online.</li> </ul>
<b>debugging</b>	Finding and fixing mistakes in a computer program.		

# Year 4 Spring 1: Programming B - Repetition in games

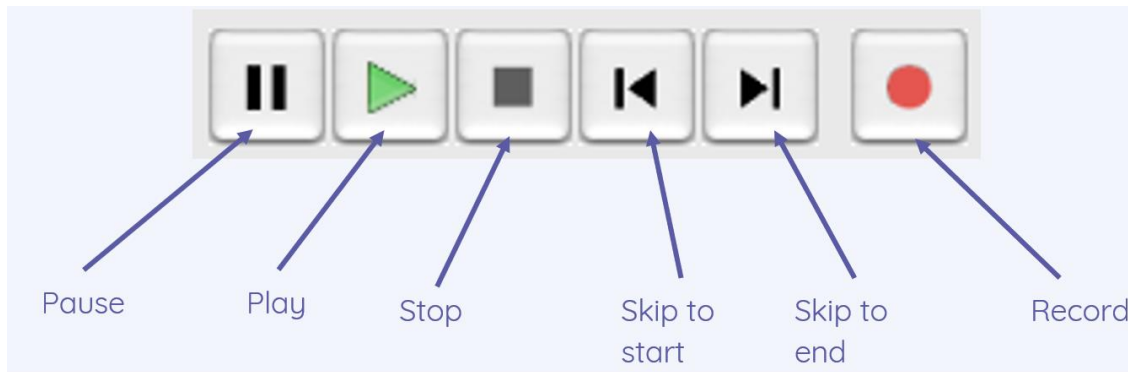
Key Vocabulary		I will be using:	Key Knowledge
<b>program</b>	A list of instructions that tells a computer exactly what to do.	 <p>count-controlled loop</p>  <p>infinite loop</p> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> I know what the outcome of a repeated action should be.</li> <li><input type="checkbox"/> I can develop the use of count-controlled loops in a different programming environment.</li> <li><input type="checkbox"/> I can use infinite and count-controlled loops in a program.</li> <li><input type="checkbox"/> I can modify loops to produce a given outcome.</li> <li><input type="checkbox"/> I can develop a design that includes two or more loops which run at the same time.</li> <li><input type="checkbox"/> I can modify an infinite loop in a given program.</li> <li><input type="checkbox"/> I can design and create a project that included repetition.</li> </ul>
<b>algorithm</b>	Step by step instructions to solve a problem.		
<b>outcome</b>	The result of following the commands in a program.		
<b>command</b>	Commands cause a computer to perform a certain operation when typed or spoken ( e.g. forwards, backwards, left, right).		
<b>repetition</b>	Doing the same instruction more than once.		
<b>count-controlled loop</b>	Count-controlled loops are used to make a computer do the same thing a specific number of times.		
<b>infinite loop</b>	Like a count-controlled loop but uses a 'forever' block.		
<b>debug</b>	Find and fix mistakes in a computer program.		
			<b>Online Safety</b>
			<ul style="list-style-type: none"> <li><input type="checkbox"/> I know strategies for keeping personal information private, depending on context.</li> <li><input type="checkbox"/> I can describe strategies for keeping personal information private, depending on context.</li> </ul>

# Year 4 Spring 2: Audio Editing

Key Vocabulary		I will be using:	Key Knowledge
<b>input</b>	Data that goes into a computer.	 <p><b>Audacity</b></p>  <p><b>microphone</b></p>  <p><b>speaker</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I know some ways that sound can be recorded digitally.</li> <li><input type="checkbox"/> I know that different types of audio can be combined and played together.</li> <li><input type="checkbox"/> I can use a digital device to record and play back sound.</li> <li><input type="checkbox"/> I can plan and record a podcast.</li> <li><input type="checkbox"/> I can edit and improve a digital recording.</li> <li><input type="checkbox"/> I can evaluate a digital recording.</li> </ul>
<b>output</b>	Information that comes out of a computer.		
<b>microphone</b>	A device used to input sound into the computer.		
<b>speaker</b>	An output device that transmits sound out of a computer.		
<b>headphones</b>	Like a speaker, but the sound can only be heard by the person wearing the headphones.		
<b>podcast</b>	A podcast is a collection or series of digital audio files that are made available for downloading or listening via the Internet.		

## Online Safety

- I know that others online can pretend to be someone else, including my friends.
- I know examples of how to be respectful to others online.
- I can give examples of how to be respectful to others online.



# Year 4 Summer 1: Photo Editing

## Key Vocabulary

**digital image**

A digital image is a picture that is stored on a computer.

**composition**

How the elements of a photograph are arranged.

**editing**

To make changes to how something was originally.

## I will be using:

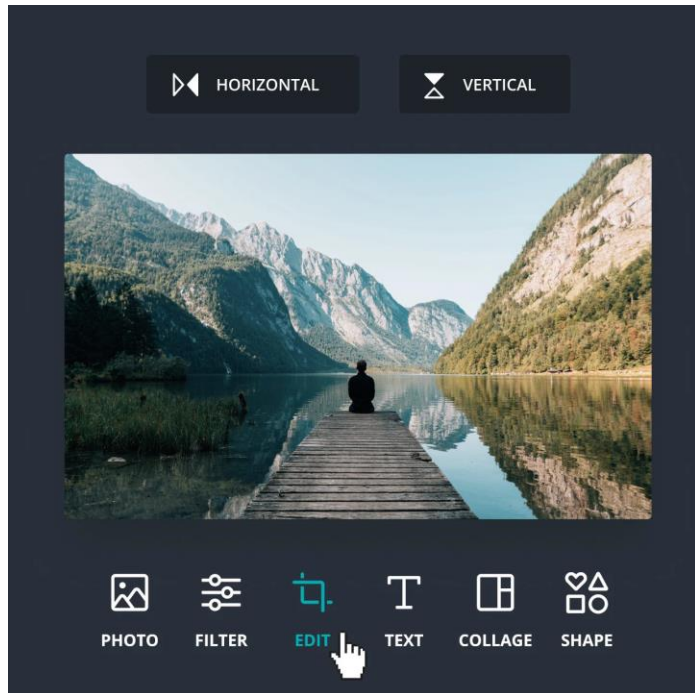


## Key Knowledge

- I know some of the ways that digital images can be changed.
- I know why someone might want to change an image.
- I know how images can be changed for different uses.
- I know that not all images are real.
- I know some ways to identify edited images.
- I can change the composition of an image.
- I can make good choices when selecting different editing tools.
- I can evaluate how changes can improve an image.

## Online Safety

- I know examples of how to be respectful to others online.
- I know how to recognise healthy and unhealthy online behaviours.
- I can give examples of how to be respectful to others online.



# Year 4 Summer 2: Data Logging

## Key Vocabulary

<b>input</b>	Data that goes into a computer.
<b>output</b>	Information that comes out of a computer.
<b>sensor</b>	A device that detects and responds to some type of input from the physical environment (e.g. light, sound, temperature).
<b>data</b>	Information gathered by observing, questioning or measuring.
<b>data logger</b>	An electronic devices which automatically monitors and records environmental factors over time.

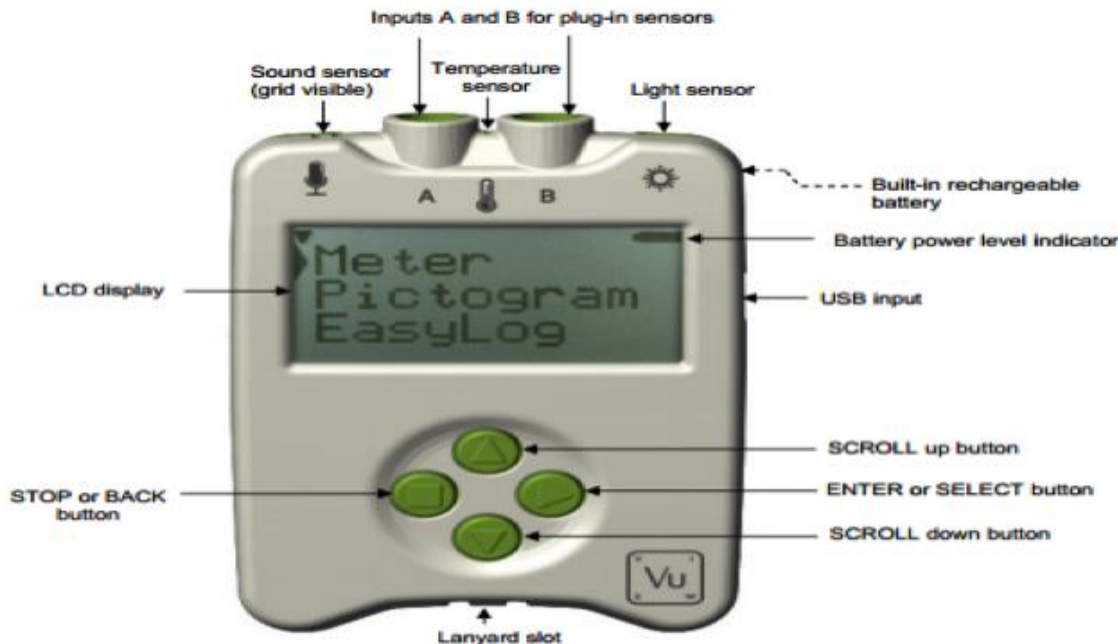
## I will be using:

### datalogger



## Key Knowledge

- I know that data collected over time can be used to answer questions.
- I know that sensors are input devices.
- I know that a data logger collects 'data points' from sensors over time.
- I can use a digital device to collect data automatically.
- I can propose a question that can be answered using logged data.
- I can use a data logger to collect data.
- I can use data collected over a long duration to find information.
- I can use collected data to answer questions.



## Online Safety

- I know that my online identity can be different to the identity I present in 'real life'.
- I can explain how my online identity can be different to the identity I present in 'real life'.

# Year 5



# Year 5 Autumn 1: Sharing Information

## Key Vocabulary

**system**

Parts that work together to complete a function (e.g. the digestive system, parts of a bike).

**computer system**

A set of integrated digital devices that input, output, process, and store data and information.

**collaboration**

People working together to achieve a goal or complete a project.

**network**

A collection of computers connected to each other.

## I will know about:

different types of computer system



how information is transferred over the internet



## Key Knowledge

- I know that computers can be connected together to form systems.
- I know the role of computer systems in our lives.
- I know how information is transferred over the internet.
- I know how sharing information online allows people in different places work together.
- I can contribute to a shared online project.
- I can evaluate different ways people work together online.

collaborative working



## Online Safety

- I know that many free apps or services may read and share their private information with others.

# Year 5 Autumn 2: Programming A – Selection in Physical Computing

## Key Vocabulary

### count-controlled loop

Count-controlled loops are used to make a computer do the same thing a specific number of times.

### condition

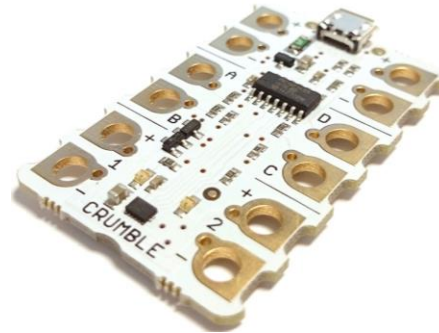
A condition is a statement that needs to be met to allow something else to happen.

### selection

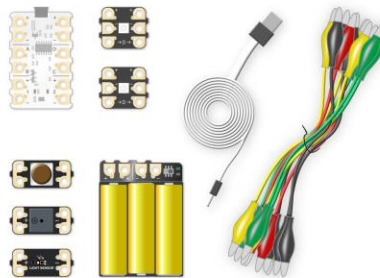
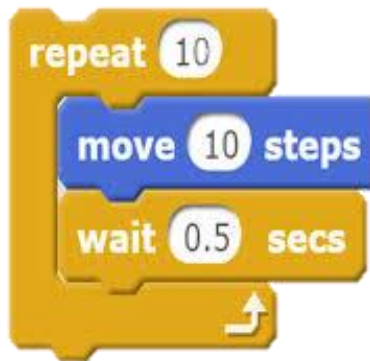
When your program has to make a choice.

## I will be using:

### Crumble Controller



### count-controlled loop



## Key Knowledge

- I know that a loop can stop once a condition is met (e.g. number of times).
- I know that a condition being met can start an action.
- I can build and control a simple circuit connected to a computer.
- I can write a program that includes count-controlled loops.
- I can use selection (an 'if... then...' statement) to direct the flow of a program.
- I can design and create a physical program that includes selection.
- I can test, debug and evaluate a project.

## Online Safety

- I know what app permissions are and can give some examples.
- I know some ways to increase privacy on apps and services that provide privacy settings.
- I can explain some ways to increase privacy on apps and services that provide privacy settings.

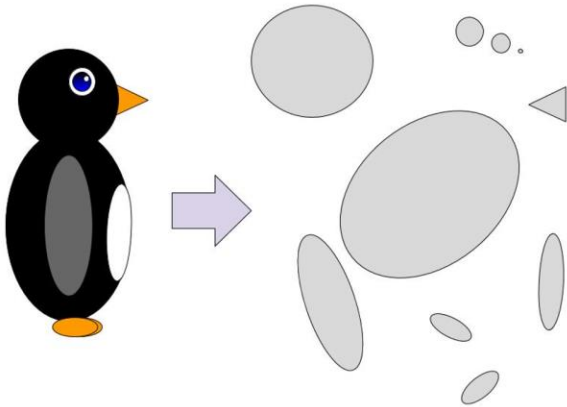
# Year 5 Spring 1: Vector Drawing

## Key Vocabulary

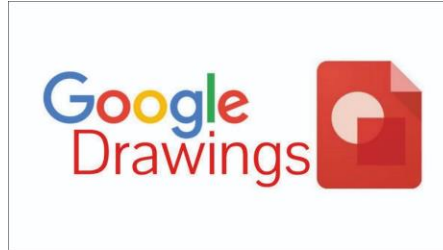
### vector drawing

Vector drawings are made on a computer. They are made with lines and shapes. Lines and shapes are put together to make a complete picture.

vector drawings are made up from different shapes.



## I will be using:



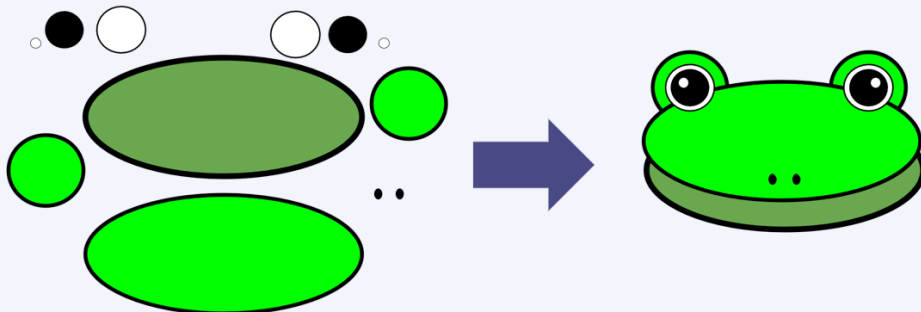
We can create vector drawings using drawing software.

## Key Knowledge



- I know that drawing tools can be used to produce different outcomes.
- I know how vector drawing is different from paper-based drawing.
- I know that vector drawings consist of layers.
- I can create a vector drawing by combining shapes.
- I can use drawing tools to create a desired effect.
- I can group objects to make them easier to work with.
- I can evaluate a vector drawing.

## Online Safety

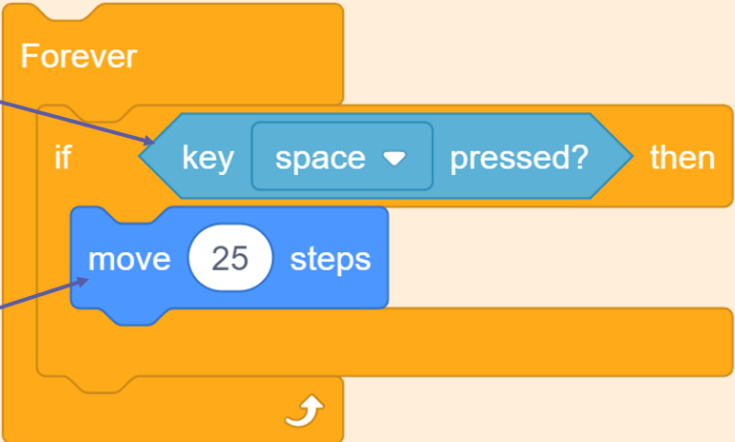
- I know that there are some people I communicate with online who may want to do me or my friends harm and know that that this is not mine or my friends' fault.



# Year 5 Spring 2: Selection in Quizzes

Key Vocabulary		I will be using:	Key Knowledge
<b>selection</b>	When your program has to make a choice.	  <b>infinite loop</b>	<input type="checkbox"/> I know how selection is used in computer programs. <input type="checkbox"/> I know that a conditional statement connects a condition to an outcome. <input type="checkbox"/> I know that selection directs the flow of a program in one of two ways. <input type="checkbox"/> I can identify and modify conditions in a program. <input type="checkbox"/> I can design the flow of a program, which contains 'if... then... else'. <input type="checkbox"/> I can design, create and evaluate a program which uses selection.
<b>condition</b>	Conditions are used to control the flow of actions in a program.		
<b>action</b>	The action is carried out if the condition is true.		
<b>outcome</b>	The result of following the commands in a program.		
<b>infinite loop</b>	Infinite loops are used to make a computer do the same thing an infinite number of times. In scratch, they are made using forever blocks.		

Condition: if space bar is pressed



Action: to be carried out when the condition is true

## Online Safety

- I know how to make responsible choices about my online identity.

# Year 5 Summer1: Flat-file Databases

## Key Vocabulary

<b>database</b>	A data store designed in an organised way, making it easier to search for the information you need.
<b>field</b>	An element of a database record in which one piece of information is stored. For example 'name' in an electronic address book.
<b>record</b>	All of the data relating to one entity in a database.
<b>flat-file database</b>	A database consisting of only one table.

## I will be using:



## Key Knowledge

- I know what a 'field' and a 'record' is in a database.
- I know that grouping and then sorting data allows us to answer questions.
- I know that tools can be used to select specific data.
- I know that computer programs can be used to compare data visually.
- I can use a form to record information.
- I can compare paper and computer-based databases.
- I can apply knowledge of a database to ask and answer real-world questions.



Users

search  sort by Country Name

record 2 of 24

Country Name

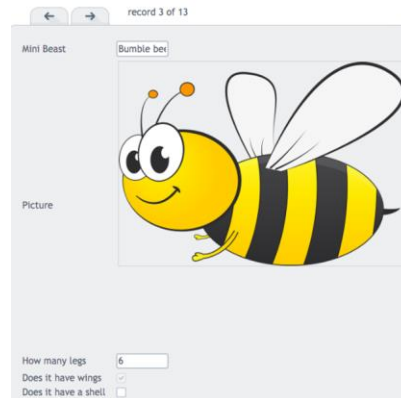
Area  km<sup>2</sup>

Population

Language

Flag 


Currency

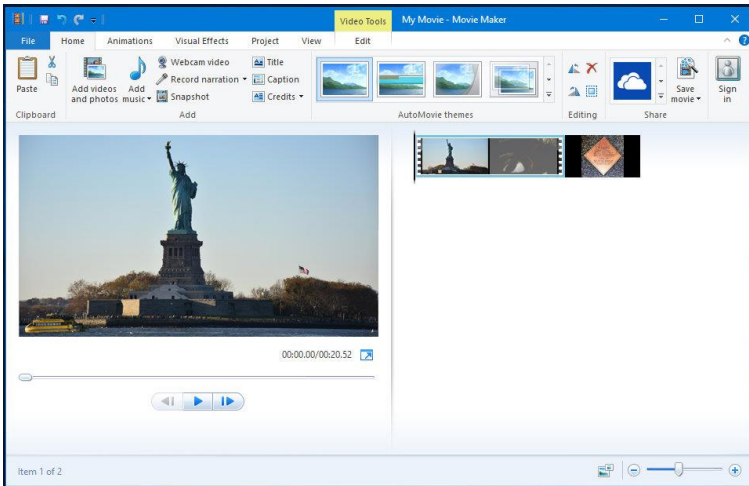


## Online Safety

- I know that identity online can be copied, modified or altered.

# Year 5 Summer 2: Video Editing

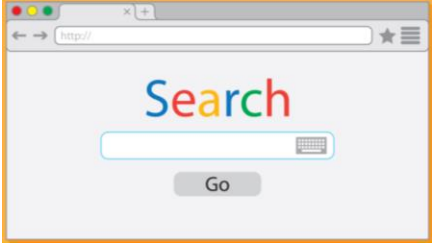

Key Vocabulary		I will be using:	Key Knowledge
<b>video</b>	Video is the recording, reproducing, or broadcasting of moving visual images. It is made up of a sequence of images played in quick succession, which gives the illusion of movement.		<input type="checkbox"/> I recognise video as moving pictures, which can include audio. <input type="checkbox"/> I know some digital devices that can record video. <input type="checkbox"/> I know the features of an effective video. <input type="checkbox"/> I know that a video can be improved through reshooting and editing. <input type="checkbox"/> I can capture video using a digital device.
<b>audio</b>	Sound - especially when recorded, transmitted, or reproduced.		
<b>digital device</b>	A piece of hardware that contains a computer or microcontroller. Computers, smartphones, tablets and smartwatches are just a few examples of digital devices.		
<b>edit</b>	Video editing is the manipulation and arrangement of video shots. Video editing is used to structure and present all video information.		
			<h2>Online Safety</h2> <input type="checkbox"/> I know how someone can get help if I am having problems and can identify when to tell a trusted adult. <input type="checkbox"/> I can explain how someone can get help if I am having problems and identify when to tell a trusted adult. <input type="checkbox"/> I can consider the impact of the choices made when making and sharing video.



# Year 6



# Year 6 Autumn 1: Communication

Key Vocabulary		I will know about:	Key Knowledge
<b>World Wide Web</b>	The World Wide Web is part of the internet where we can visit web pages and websites.	<p>search engines</p> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> I know how search engines select results.</li> <li><input type="checkbox"/> I know how search engine results are ranked.</li> <li><input type="checkbox"/> I know why the order of results is important, and to whom.</li> <li><input type="checkbox"/> I know how we communicate using technology.</li> <li><input type="checkbox"/> I can evaluate different methods of online communication.</li> </ul>
<b>communication</b>	Telling or exchanging of information by speaking, writing, or using some other medium, such as phone lines or computers.	<p>online communication</p> 	
<b>search engine</b>	A program that searches for and identifies items in a database that match keywords or characters specified by the user, used especially for finding particular sites on the World Wide Web.		<h3>Online Safety</h3> <ul style="list-style-type: none"> <li><input type="checkbox"/> I know some effective ways people can manage passwords (e.g. storing them securely or saving them in the browser).</li> <li><input type="checkbox"/> I know what to do if a password is shared, lost or stolen.</li> </ul>
<b>internet</b>	A global computer network that provides information and communication opportunities.		

# Year 6 Autumn 2: Programming A – Variables in Games

## Key Vocabulary

Revisit previous Scratch vocabulary

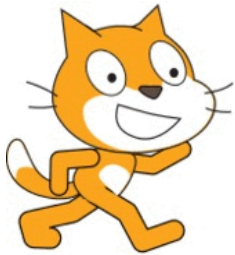
**variable**

Something your program needs to remember that might change.

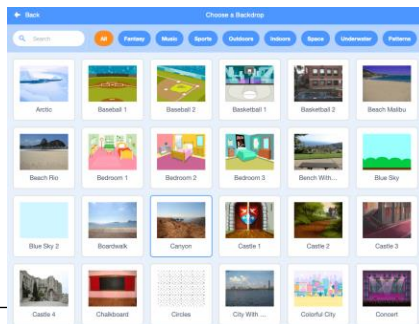
**value**

The value of the variable is the value the variable name represents. It is often, but not always, a number.

sprite



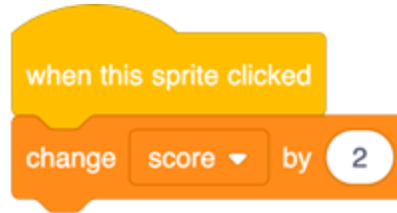
background



## I will be using:



variables



command block



## Key Knowledge

- I know that a variable is something that is changeable.
- I know some examples of information that is variable.
- I know why a variable might be used in a program.
- I know that a variable has a name and a value.
- I know some ways to improve a game by using variables.
- I can identify examples of information that is variable.
- I can design, create and evaluate a project that builds on a given example.

## Online Safety

- I know some strategies to help identify scams online (e.g. phishing).

# Year 6 Spring 1: 3D Modelling

## Key Vocabulary

2D

2D shapes have only width and height; they do not have depth, and so appear flat.

3D

A 3D object has three dimensions, so has width, length, and height (depth).

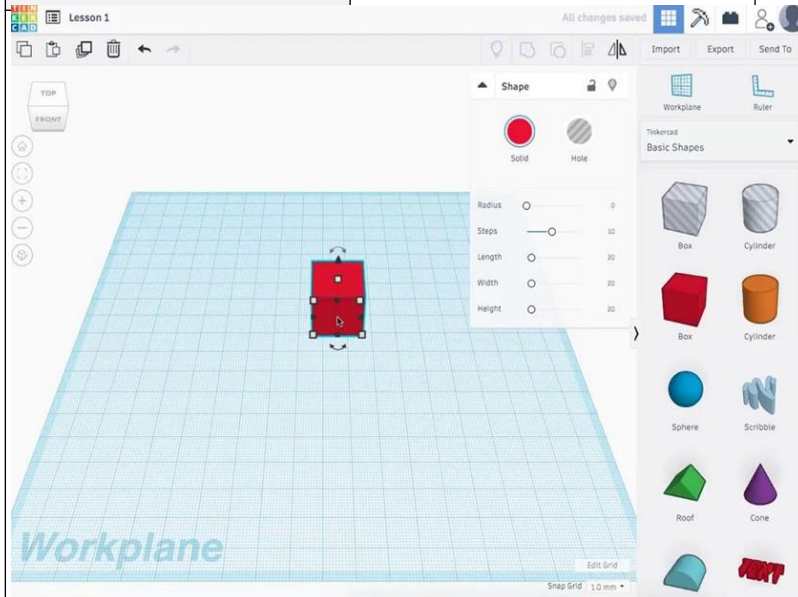
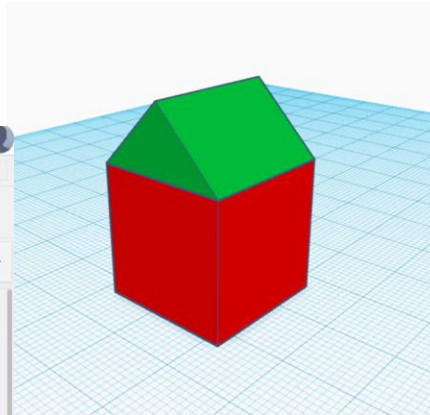
3D modelling

Using 3D shapes on screen to produce models of objects in the real world.

digital modelling

Digital Modelling is creating a computer model of an object that exactly replicates the form of the object.

## I will be using:



## Key Knowledge

- I know that physical objects can be broken down into a collection of 3D shapes.
- I can use a computer to create and manipulate 3D objects.
- I can compare working digitally with 2D and 3D graphics.
- I can construct and manipulate a digital 3D model of a physical object.
- I can design a digital model by combining 3D objects.
- I can develop and improve a digital 3D model.

## Online Safety

- I know how to capture bullying content as evidence (e.g screenshot) to share with others who can help me.

Take A Screenshot



# Year 6 Spring 2: Spreadsheets

## Key Vocabulary

<b>spreadsheet</b>	A spreadsheet is a computer application that allows users to organise, analyse, and store data in a table.
<b>data</b>	Data is a collection of information. gathered by observation, questioning or measurement.
<b>cell</b>	Each box that makes up a table in a spreadsheet is called a cell.
<b>cell reference</b>	Each cell has a unique cell reference. This allows you to say where a particular piece of data is held.

## I will be using:



**Excel**



**Google Sheets**

## Key Knowledge

- I know that objects can be described using data.
- I know that formulas can be used to produce calculated data.
- I know that changing inputs changes outputs.
- I can identify questions which can be answered using data.
- I can apply formulas to data, including duplicating.
- I can create a spreadsheet to answer questions.
- I can choose suitable ways to present data.

## Online Safety

- I know that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others.
- I know who can help if someone is worried about the sharing of inappropriate images.
- I can explain how sharing something online may have an impact either positively or negatively.

	A	B	C	D	E
A1	Attraction				
1	<b>Attraction</b>	<b>Location</b>	<b>Travel duration</b>	<b>Distance in miles</b>	<b>Cost per mile</b>
2	Alton Towers Theme Park	Staffordshire	1:47:00	86.1	£0.12
3	Harry Potter Studio Tour	Watford	3:38:00	207	£0.12
4	National Space Centre	Leicester	2:22:00	130	£0.12
5	Buckingham Palace	Westminster	4:00:00	232	£0.12
6	Science Museum	London	3:56:00	233	£0.12
7	LEGOLAND®	Windsor	3:39:00	218	£0.12
8	Edinburgh Zoo	Edinburgh	4:00:00	228	£0.12
9	Sea Life	Brighton	4:41:00	283	£0.12
10	Splashdown Water Park	Poole	4:34:00	276	£0.12
11	Billy Bob's Parlour	Yorkshire	1:42:00	77.2	£0.12
12					

# Year 6 Summer 1: Sensing

## Key Vocabulary

**variable**

Something your program needs to remember that might change.

**selection**

When your program has to make a choice.

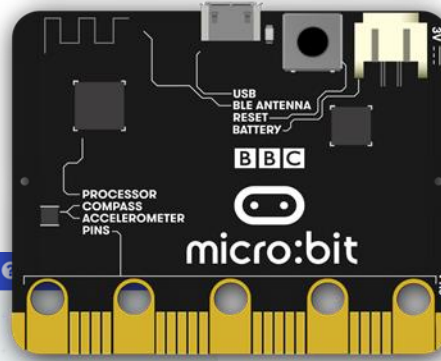
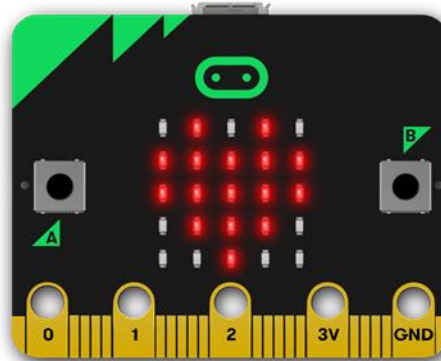
**controllable device**

An external device that can be programmed from the computer.

**conditional statement**

Conditional statements instruct the computer on the decision to make when given some conditions. (e.g. if, then blocks in Scratch)

## I will be using:

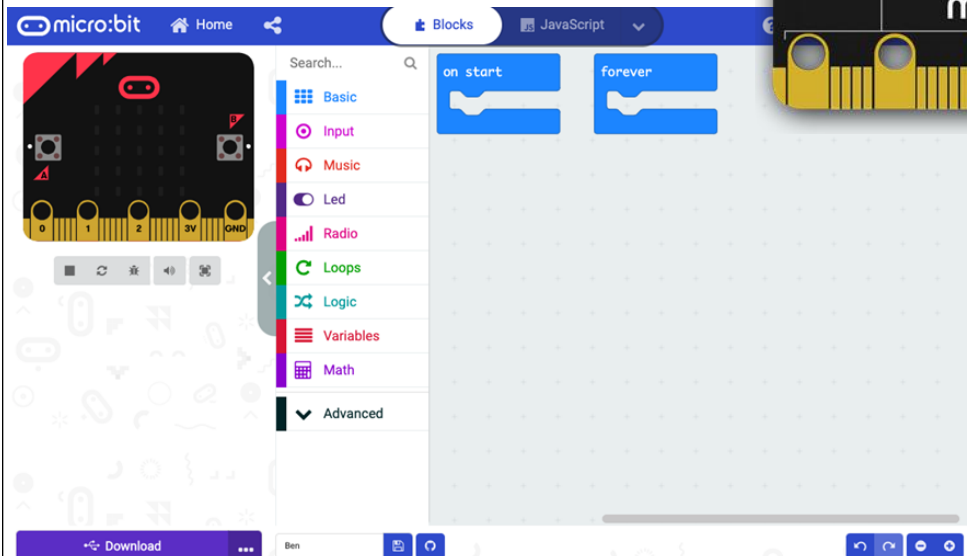


## Key Knowledge

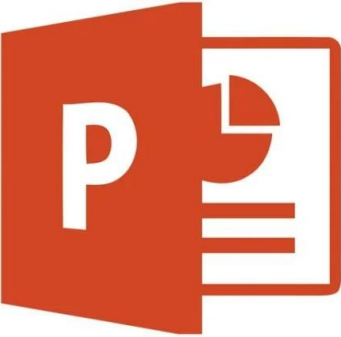

- I know that selection can control the flow of a program.
- I can create a program to run on a controllable device.
- I can apply their knowledge of programming to a new device.
- I can update a variable with user input.
- I can use a conditional statement to compare a variable to a value.
- I can design and develop a project that uses inputs and outputs on a controllable device.

## Online Safety

- I know ways in which anyone can develop a positive online reputation.
- I can explain ways in which anyone can develop a positive online reputation.



# Year 6 Summer 2: Webpage Creation

Key Vocabulary		I will be using:	Key Knowledge
<b>webpage</b>	A webpage is a single digital document. It is stored on a web server connected to the internet and can be viewed on a web browser. It forms a small part of the world wide web.		<input type="checkbox"/> I know the common features of a web page and use this to plan their own. <input type="checkbox"/> I know about the ownership of images and how to find copyright-free images. <input type="checkbox"/> I know what a navigation path is and why it is a useful feature. <input type="checkbox"/> I can evaluate an existing website and consider structure. <input type="checkbox"/> I know how to preview and evaluate a web page I have created. <input type="checkbox"/> I know how to make multiple web pages and link them using hyperlinks.
<b>website</b>	A website is typically a collection of connected webpages and each webpage has its own unique web address.		
<b>hyperlink</b>	A hyperlink is what we use to move around the web from page to page. A hyperlink is often underlined, though not always. Hyperlinks can be text, images, buttons, or moving images.		
<b>copyright</b>	An original piece of work is covered by copyright. It could be a piece of music, a play, a novel, photos or a piece of software. Copyright can be enforced by law. It is against the law to copy and distribute copyrighted material without the copyright owner's permission.		<b>Online Safety</b> <input type="checkbox"/> I know issues online that might make me or others feel sad, worried, uncomfortable or frightened. <input type="checkbox"/> I know how I might get help, both on and offline. <input type="checkbox"/> I know the implications of linking to content owned by other people. <input type="checkbox"/> I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. <input type="checkbox"/> I can give examples of how I might get help, both on and offline.