

Algorithms unplugged

Algorithm	A clear set of instructions to carry out a task.
Bug	An error or mistake in computer code.
Computer	Electronic machine that accepts and processes information to produce an output, and then stores the results.
Debug	To fix the error in code.
Decompose	To break something down into smaller chunks.
Device	Equipment created for a certain purpose or job.
Input	A way of telling the computer what you want it to do.
Instructions	A list of commands and directions on how to do something.
Output	Information or data that is sent by the computer to an output device such as a printer or speakers.
Solution	The method to solve a problem.

Full picture:



Decomposition:

Shape:	How many?	Body part
	One	Eye
	One	Head
	One	Beak
	One	Wing
	One	Body
	Two	Legs
	Two	Feet

Key facts

An algorithm for brushing your teeth:



1. Brush your front teeth



2. Add some toothpaste



3. Get your toothbrush



4. Brush your back teeth



5. Rinse your mouth



6. Smile!



There is a bug in the algorithm!

1. Get your toothbrush



2. Add some toothpaste



3. Brush your front teeth



Digital imagery

Camera	A device used to take, or record, pictures of people and objects.
Crop	When you change the height and/or width of an image.
Delete	To remove from a computer, text or files such as images.
Download	To save a file from the internet or another computer.
Drag and drop	When you move and place text or a file on a computer.
Editing software	Any software program that lets you change an image or video in any way.
Image	A picture.
Import (software)	To place another file into a document, such as an image.
Photograph	Still images that are taken by a camera.
Resize	To change the height and width of an object.
Save as	Lets you name and store a file on a computer.
Search engine	A website that lets you search for information on the internet.
Sequence	A set order or pattern for something to follow.
Smart device	An electronic device, connected to other devices or the internet.
Storage space	A place for keeping information for future use.
Visual effects	The process where images are created or changed.

 Tell an adult if you see something online that makes you feel unhappy.

Check that there is enough light



Low light



Lights on

Check the camera frame, to position your photograph



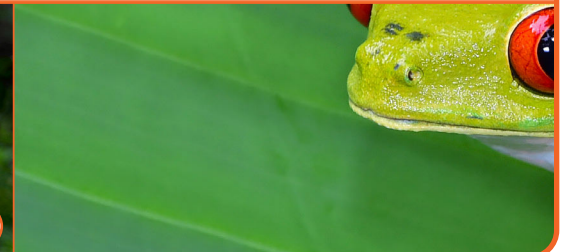
Frame

Hold the camera still, because movement can blur the photo



Motion blur

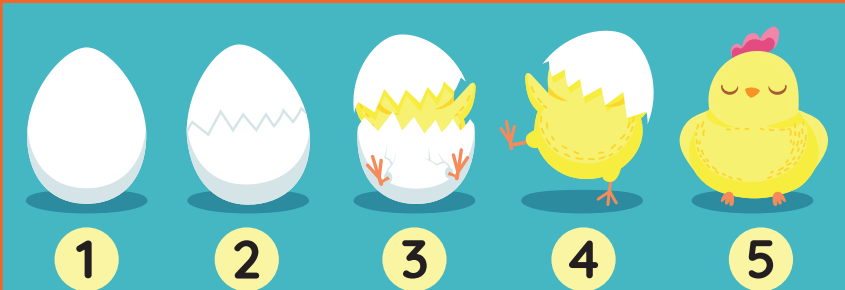
Make sure you get all of the subject in the photo



Still

Key facts

An example of a sequence: egg-hatching



Different types of camera:



D-SLR camera

Security camera

Webcam

Mobile phone camera

When taking photographs, remember to:

Getting started

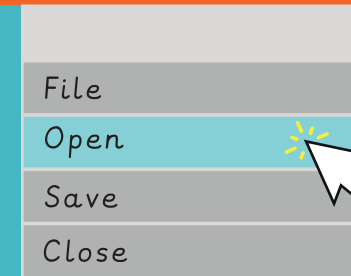
Account	Somewhere our information can be stored and seen safely using a username and password.
Clipart	A collection of images that can be used on the computer.
Computer	Electronic machine that accepts and processes information to produce an output, and then stores the results.
Log on	To put in a username and password unique to you, to access your personal account.
Log off	To lock your account.
Mouse	A handheld device that is used to move things around on the computer screen.
Password	A secret word made up of letters, numbers and symbols.
Resize	To change the height and width of an object.
Screen (monitor)	A device that shows what is happening on the computer, such as videos, pictures and words.
Software	A series of instructions written for a computer to follow. Also known as apps.
Tool	An object that helps us with a particular task. For example, a ruler helps us measure.
Username	A unique name or email address for your account.

Can you find all the letters of your name on the keyboard?

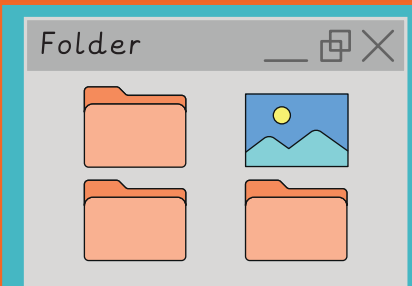


Key facts

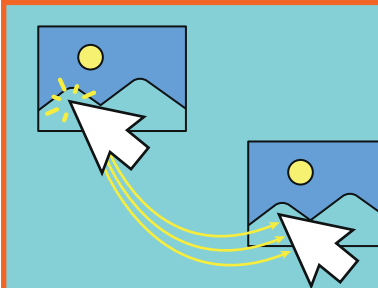
Computer menu:



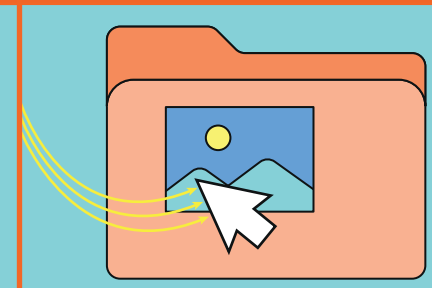
Computer window:



Computer mouse skills:



Click and drag



Drag and drop

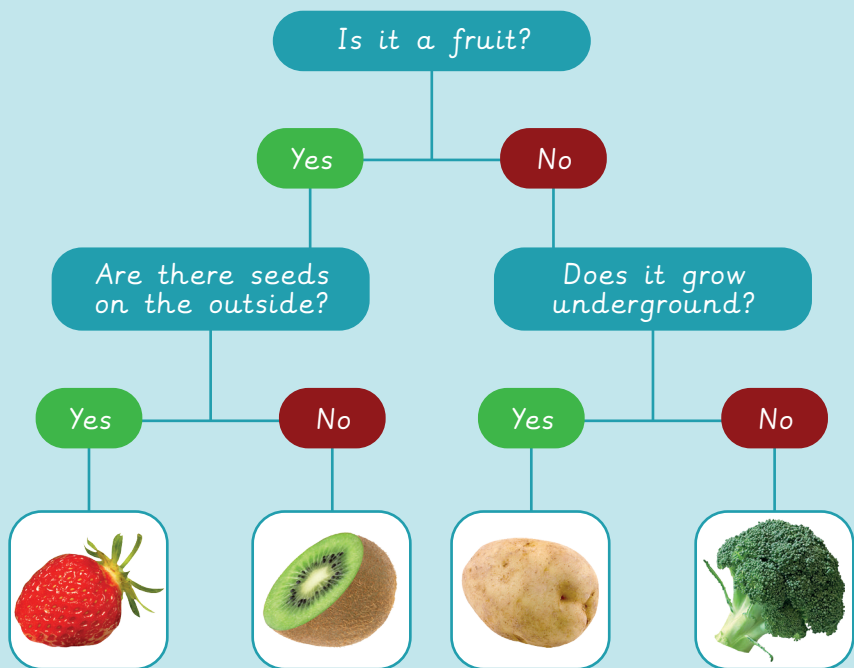


Introduction to data

Branching database	Using a series of yes or no questions to categorise data or objects.
Categorise	Put into groups that have similar or the same properties.
Chart	Information displayed in a graph, table, tally or diagram.
Computer	Electronic machine that accepts and processes information to produce an output, and then stores the results.
Data	Information used for a specific purpose or investigation.
Information	Facts about a specific thing, person, place or other.
Label	Information attached to something to tell you about it.
Pictogram	A chart which uses pictures to represent items.
Record	To store information about something.
Sort	To arrange items by an order or into a category.
Table	A chart which stores data in columns and rows.
Text	Written or typed letters and words.

Key facts

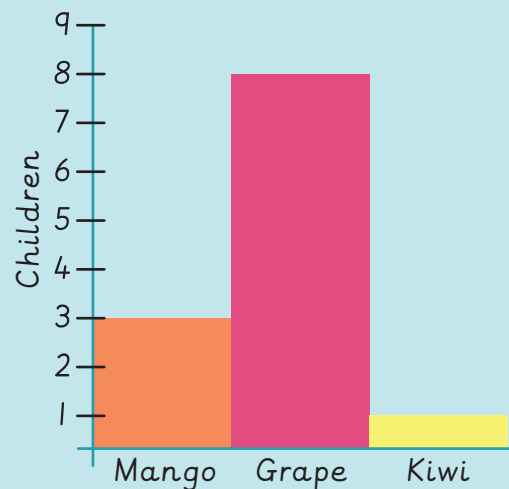
Branching database



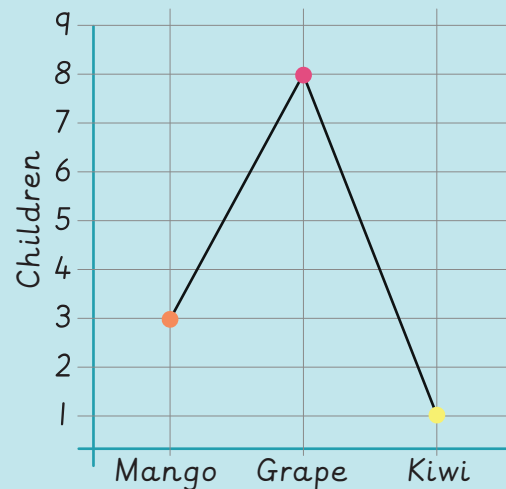
Tally chart



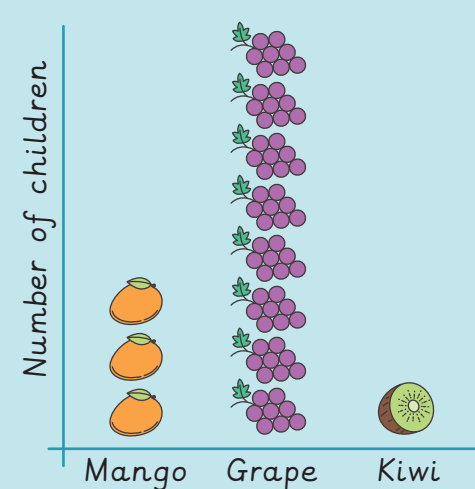
Bar graph



Line graph



Pictogram

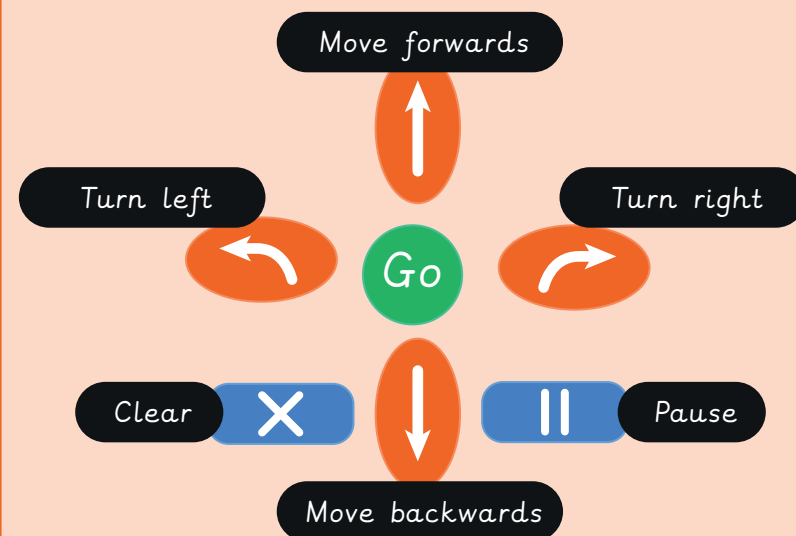


Programming - Bee Bot

Algorithm	A clear set of instructions to carry out a task.
Bee-Bot	A small programmable floor robot, with seven buttons (forwards, backwards, turn right, turn left, go, pause and clear).
Computing code	Words, numbers and symbols that make a computer language.
Computer program	A series of instructions, that are written for a computer to follow. Also known as apps.
Explain	Give clear information about something to someone.
Explore	Look at something new to learn more about it.
Instructions	A list of commands and directions on how to do something.
Predict	To make a guess.
Tinker	To explore and play with something to discover what it can do.
Video	Moving pictures, that make up a film or cartoon.

Key facts

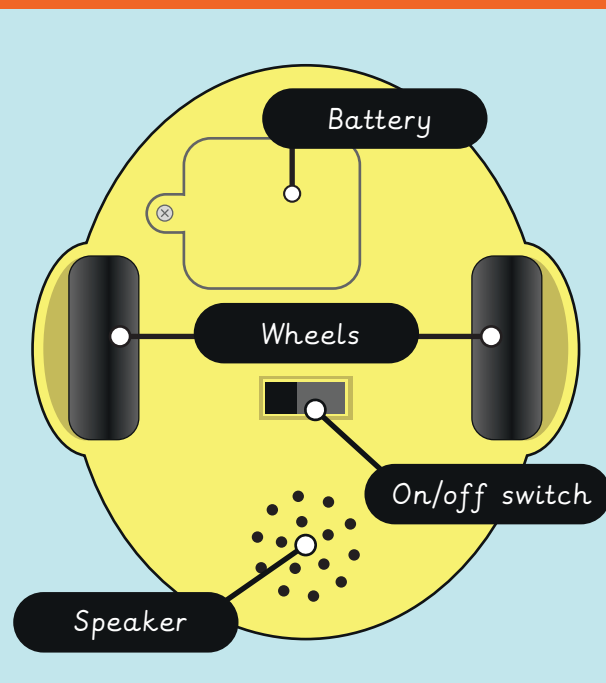
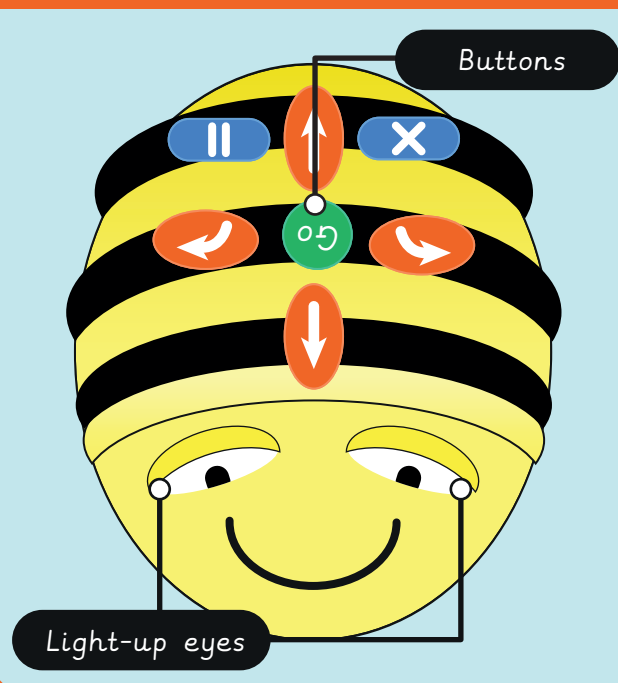
Bee-Bot buttons:



On top of the Bee-Bot

Under the Bee-Bot

Where will the instructions take Bee-Bot?

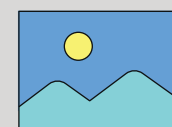


Rocket to the moon

Computer	Electronic machine that accepts and processes information to produce an output, and then stores the results.
Computer program	A series of instructions, that are written for a computer to follow. Also known as apps.
Create	To make something.
Data	Information used for a specific purpose or investigation.
Digital content	Information and media such as videos and pictures stored on a computer.
e-Document	An electronic file which includes text.
Folder	An electronic storage file that holds other digital content for example text, pictures, videos.
List	A number of things, one after the other.
Save	To store something for use later.
Sequence	A set order or pattern for something to follow.
Share	To show or give a part of something to someone else.
Spreadsheet	An electronic document that lets you store data in rows and columns.

Key facts

My computer



Mountains.jpg



My documents



Rocket materials.txt



My homework

Writing program - Rocket materials.txt



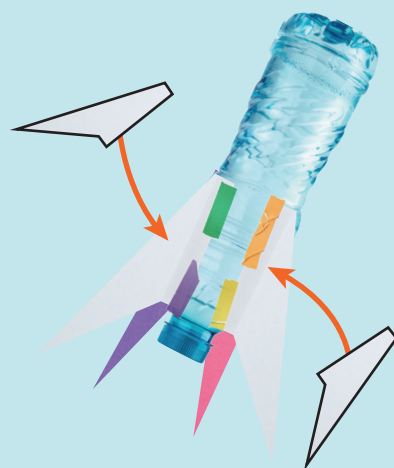
A list of bottle rocket materials:

1. Empty plastic bottle
2. Roll of sticky tape
3. Sugar paper or coloured card

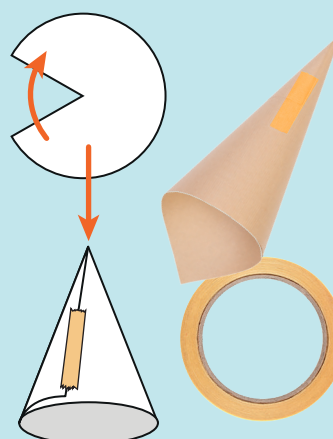
How to make a bottle rocket:



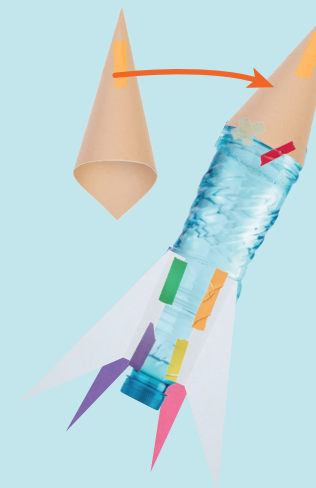
1. Collect the materials



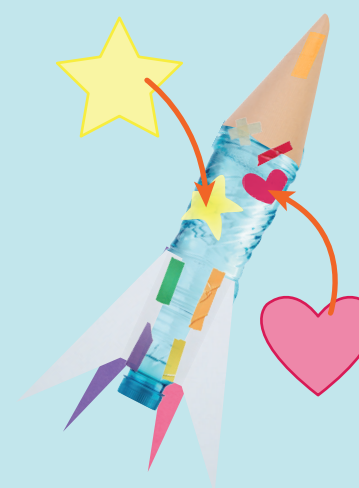
2. Cut and add the fins



3. Make the nose cone



4. Attach the nose cone



5. Decorate the rocket