

# 2Chart User Guide



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# 1 Introduction



2Chart is a tool that you can use to make flowcharts for many purposes.

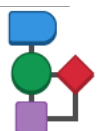
2Chart will be of most use in Computing especially when going through the computational thinking processes of Algorithmic thinking, Decomposition, Generalisation and Abstraction before coding.

Flowcharts can be used for any task that would benefit from diagrammatic representation. They can be used as a problem solving tool. They also support processes of designing, evaluation and documentation.

In Computing, children can structure their algorithms before beginning to code and make sure that they make logical sense. 2Chart can also be used in any subject to develop logical reasoning and problem solving whether mapping the outcome of a science experiment under different conditions or even deciding upon arguments for a debate.

Teachers can design 2Chart files and then set them as 2Dos for their pupils. For example, teachers could add all of the required elements for an algorithm to achieve a purpose and children would be required to order and link them appropriately. Children can also create their own resources.

For more information about 2Dos see the [2Dos User Guide](#).

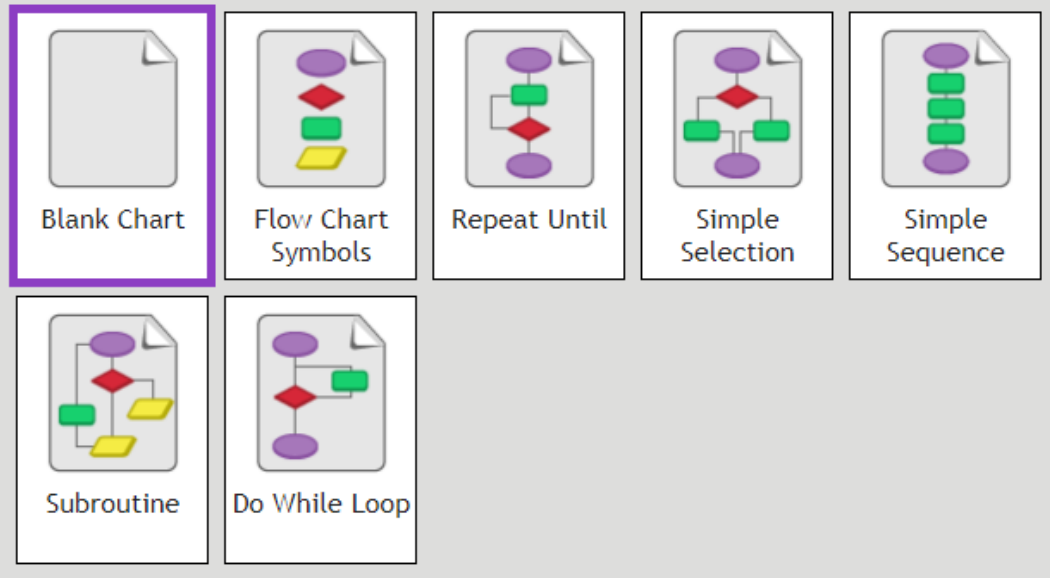


## 2 Getting Started

When 2Chart first opens you will have a choice of examples.

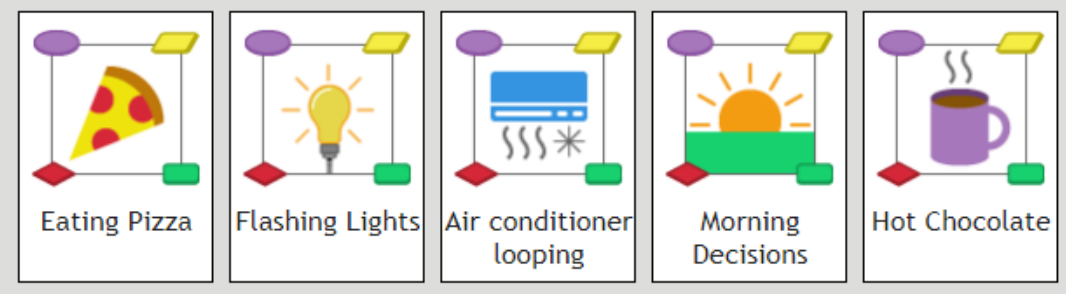
- There are a variety of coding structures such as sequencing, decisions and loops that you can fill in and adapt:

### Getting Started:



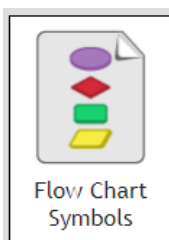
- Or examples of real-life situations represented with flowcharts:

### Examples:



These are all easy to use and adapt or you can create one from scratch

If you are new to flowcharts then the example Flow Chart Symbols might be a good point to start. You can also see details in this guide in section [Creating a Flowchart](#).



## 3 Creating a Flowchart

### Toolbar buttons



The toolbar buttons are the same as all other tools in Purple Mash. There is also a grid button which switches the grid background on/off.

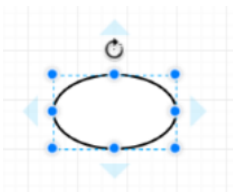
### Making a Flowchart

Firstly have a clear idea of the objective of your flowchart and keep this in mind when creating it. Ensure that you remove any unnecessary details. For example, if you are writing a flowchart of the working of a Ferris wheel, the colour of the seats is not usually important. In computer science, this process is known as **abstraction**.

To make a flowchart, simply drag and drop the different symbols. Flowcharts always start either from left to right or top to bottom so that they can be easily read.

Add text to them by double-clicking on the symbol. Font, text size and colour can be altered using the options in the top menu bar.

To link one symbol to another with arrows, click on the first symbol and some pale blue arrows will appear. Put the mouse over one of these and drag to the symbol to be joined. An arrow will be created.



Lines can be dragged to extend them. As they are extended, more blue points will appear, allowing flexibility in the lines. Drag the blue points to create bends where they are required.

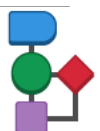
Arrows should demonstrate the flow of data in a process.


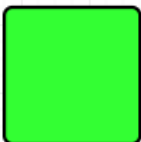



### Flowchart Symbols

For flowcharts to be widely understood, there are some standard symbols.

Here are the symbols that are available in2Chart, the colouring does not matter.

	A <b>Terminator</b> is used to show where your flow begins or ends. Ideally, you would use words like 'Start', 'Begin', 'End' inside the terminator object to make things more obvious.
	<b>Data Input/Output.</b> This object shows the Inputs to and Outputs from a process. Input is data received. Output is data sent out.



	<b>Decision/Conditional.</b> This object is always used in a process flow to as a question with a 'yes' or 'no' answer. The answer to the question determines the arrows coming out of the Diamond. One from the bottom point corresponding to Yes (or True) and one from either the right/left point corresponding to No (or False). The arrows should be labelled to avoid confusion.
	<b>Process.</b> This object is used where there is a to command or instruction to follow.
	<b>Database.</b> This represents information stored which can be accessed directly. This object represents a computer's hard drive.
	<b>Delay.</b> This object can be used to show where there is a waiting period that is part of the process
	<b>Sub-routine or Predefined Process.</b> This symbol is called a subroutine when it is used in a coding flowchart. In the code you would create a function that will perform this routine and 'call' it when required in the code.  The same object is also called a Predefined Process. This means the flowchart for the predefined process has to be already drawn, and you should reference the flowchart for more information.

The following symbols are also useful when creating clear flowcharts


= is the same as (is equal to)  
 > is greater than  
 < is less than  
 >= is greater than or equal to  
 <= is less than or equal to  
 <> is not equal to (is not the same as)

The **Text** object can be used for adding titles and any required notes or keys to the flowchart.

## 4 Saving and Sharing Charts

Charts that you have made can be saved and shared as 2Dos like any other resource. They can also be shared by pupils to blogs, displayboards and other links



Save the chart and then click on the  for sharing options.

For further details about Share Links see the guide at [Share Link User Guide](#).

For further details about 2Dos, see the manual at [2Dos User Guide](#).

