



# User Manual

# Bingo 2.0

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Welcome to Bingo 2.0! This major update features a wide variety of updates and marks the transition of Bingo from a basic language to a complex Object Oriented programming tool.

August 2012

# Introduction

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Welcome to a brand new version of Bingo!

Bingo 2.0 has been finally released after two years of development. This time has been instructive and amusing from the point of view of the programmer. It's all been a blend of playing around, looking for new ideas, coding them in, and fussing about until the features I wanted finally worked.

This time, I wanted something really special for Bingo, something that would make it different from "all those mods out there", so that people would think "I want Bingo, because it has that unique feature I really, really need".

Those essential features turn out to be many in this release, as this manual will explain below...

*LS97, Developer of Bingo*

## Before you spend time on these pages...

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This manual is set up in order to shorten the time spent while looking for block help. However, I still don't suggest you look for a certain block only if you are not sure what it does, as most new blocks are now equipped with their personal help screen. To view it, you may right-click that block in Bingo and select help from the menu, just like in normal Scratch.

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# New Blocks

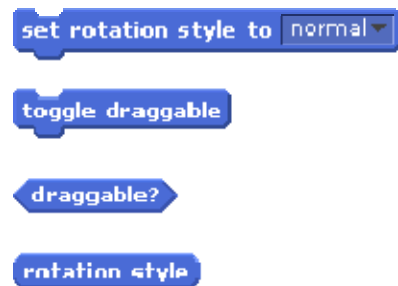
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Bingo counts more than 90 added blocks since 1.0.0. You can find them all here with a detailed explanation and appropriate credits.

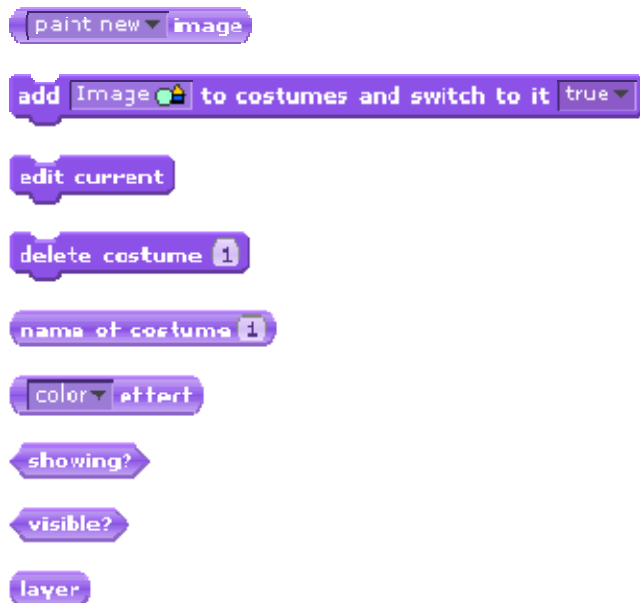
## Overview

What follows is a simple, categorized, illustrated list of all the new blocks.

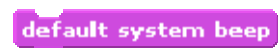
### Motion



### Looks



### Sound



## Pen

pen down?

pen color

pen hue

pen size

## World (new category)

Bingo 1.3.0	Bingo 2.0

## Control

last broadcasted

## Sensing

sprite mouse-pointer is touching mouse-pointer ?

ask What's your name? in dialog

color black as normal

color r 0.0 g 0 b 0

color h 240 s 1 v 1

## Operators



## Variables and Lists



## More (new category)

Bingo 1.3.0	Bingo 2.0
 <p>press</p> <p>constant</p> <p>true</p> <p>false</p> <p>sprite name</p> <p>add variable var as private</p> <p>delete var var</p> <p>add list list</p> <p>delete list list</p> <p>move to X: 0 Y: 0</p> <p>set layout of to small</p> <p>variable var exists?</p> <p>show dialog content title title</p> <p>sure? in dialog confirmed?</p> <p>inform Hello</p> <p>sure? confirmed?</p> <p>set clipboard to Bingo</p> <p>clipboard</p>	 <p>press</p> <p>in presentation mode</p> <p>constant</p> <p>true</p> <p>false</p> <p>sprite name</p> <p>show dialog content title title</p> <p>sure? in dialog confirmed?</p> <p>inform Hello</p> <p>sure? confirmed?</p> <p>set clipboard to Bingo</p> <p>clipboard</p> <p>Note: many blocks from this section have been moved to the new category “data”</p>

## Data (new category)










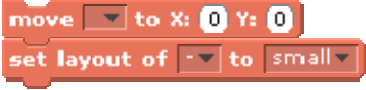


## Objects (new category)



## Credits

This is a table with all the new blocks and their corresponding credits. All the blocks that are not listed below were created entirely by me, so I didn't include them.


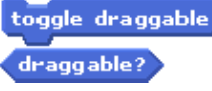

	I have created the block, but took the idea from Panther.
	Took the block code from Panther
	Took the block code from Zatch and edited it
	idea from Billyedward, my code
	These and the rest of the File I/O are taken from Panther and fixed, except the URL block which i took partially from Billyedward.
	The mesh blocks were made half by me, half from Panther.
	By passera. Good job for it being a first block too!
	From Panther. Thanks loads
	'is a number' option from BYOB, rest is mine
	Code from Panther
<b>Show/Hide list blocks</b>	Made by nXIII, taken from the forum thread 'The elusive show/hide list blocks'

Thanks to all of you for your wonderful blocks. Sorry if I didn't include you, but I think I've covered every single block I took from someone else.










All blocks added in versions 1.3.0 and up are created by me.

## Details

Below is a complete list of all the blocks I added since Bingo 1.0.0 with an explanation.

	This block sets the rotation style of a sprite to the selection of the user. It serves the same purpose as the three buttons next to the sprite thumbnail.
	This block toggles the sprite's draggable status and reports it in the Boolean. Serves the same purpose as the lock icon next to the sprite name.
	Deletes the selected costume. Just like the little X next to the costume in the costumes tab.

	Reports an image taken from: a file, the stage, the current costume, a web URL, a portion grabbed by the user
	Returns the name of that costume. A costume # reporter can be placed instead of that '1' to return the current costume's name.
	This reporter returns the color, blur, mosaic etc. effect of that sprite.
	This block returns whether a sprite is showing or not.
	Returns the layer of that sprite. Set by go to front and go back by X layers.
	Adds a reported image to the costumes and optionally switches to it
	Beeps according to your operating system.
	These blocks report the different pen states. Pretty self-explanatory.
	Returns the last thing that was broadcasted by the 'broadcast X' blocks. Works in mesh.
	Returns whether a certain sprite is touching another sprite. Updated in Bingo 1.3.0!
	Returns a string or value inputted by the user through the string input dialog. Now multi-line!
	Returns a colour for use in colour arguments such as 'touching colour X' or for setting a variable colour.
	Reports a colour. Can be inserted in the block described above to make it lighter, darker, inverted or to return individual RGB/HSV values.
	Exactly the same as the old <mouse down> Block, with right, middle and any added.
	Some added string blocks. Pretty self-explanatory.
	Splits a string into a list using a symbol as separator.
	Does the inverse of the block above
	More string control blocks. Returns whether the string is of type text, number, or color, or whether a string contains a certain sub-string.
	Rounds a number to the given number of places. This example will return 1.24
	This block is the so-called fraction function block. It can return the greatest common factor, lowest common denominator and mod of two numbers.

 	Returns the log base X of a number Returns the summation from X to X
	Returns the abstract value of infinity, useful when used in mathematical blocks. NB: in Squeak, Infinity = $(1.7\text{E}380)^2$
	Sets the variable to that colour. The any colour reporter can be inserted here too.
 	Shows and hides lists.
<b>World blocks</b>	I won't explain all. Very self-explanatory. Try them yourself if you want to experiment.
<b>More blocks</b>	I won't explain all either. Very self-explanatory. Try them yourself if you want to experiment.
	Removed in Bingo 1.3.0 because of possible security issues with primitives
	Sets the cursor costume to the selection. Includes normal, wait, read, crosshair, blank and more.
	Writes a reported image to a file

# Object Oriented Programming

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Bingo 2.0 introduces the “Objects” category, which contains blocks allowing you to work with different sprites, their properties, and their actions. This section serves as a getting started tutorial to get to know these new blocks.

Other than that though, the philosophy behind these additions is simple: Bingo 2.0 is provided with extra tools, and it’s always up to the programmer to put them to good use.

## Cloning

Because pretty much every single other mod these days has cloning, I couldn’t leave it behind in Bingo. There are three main blocks that control the flow of clones:

**clone me** creates a clone of the current sprite and reports it. Ideally, the returned value should be stored into a variable, so that it can be accessed later and used with the other blocks in the objects category.

**delete me** deletes the current sprite, regardless of whether it is a clone or the original.

**delete all clones of my type** deletes all sprites that were cloned from that sprite, except for one original sprite.

## Using sprites in code

Once sprites have been cloned and stored, the value can be used with other blocks as so:

**x position of sprite** this and other options can be selected using sprite values.

**name of sprite** this returns the name of the sprite, for example to output to the user or to store in a list, since all sprites have unique names and can be retrieved using **sprite named** or set using **set name of Sprite2 to Sprite**

**this sprite**

**stage** These are constant reporters that return a sprite version of themselves or the stage for use in other blocks.

**do for sprite Sprite1** This block will evaluate all actions contained inside it as if they were coming from another sprite. However, reported values are from the point of view of the sender.

# Data Types in Bingo

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Basic data types were introduced in Bingo 1.3.0 with the advent of colour reporters. In 2.0 this concept has been expanded to fill a whole block category: “data”.

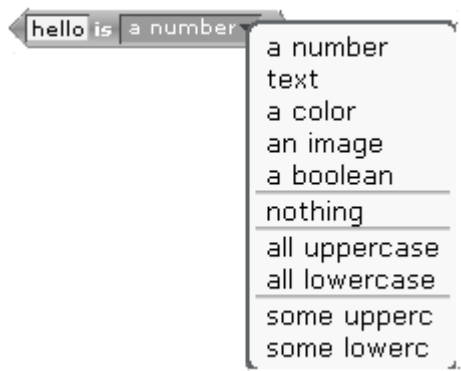
Data types are a feature of software design that allow the programmer to specify what type of value a certain variable belongs to, and to properly convert between types to avoid errors and confusions. Scratch, the parent of Bingo, allowed free and silent conversion of any data type between values. This can still be done in Bingo 2.0, but some blocks also allow you to specifically change a value’s type.

Some of these conversions are also intelligent, so that string ‘fifteen’ converts to number 15 or string ‘red’ converts to colour **255 0 0**.

These blocks are



Like any respectable languages with data types, Bingo also allows you to check what data type a value belongs to using a block:



The first 6 options pertain to data type checking, the last four to string checking.

# New Features

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The changes that took place in the 2.0 release.

Summed up changes from 1.0 to 1.3:

- Two new categories
- An open shortcut button
- A 'last opened project' button in file menu
- Compatibility mode where Bingo becomes exactly like Scratch 1.4
- Added a 'share' shortcut button for Mod Share
- Added help screens
- Added a settings menu
- Made changes to the paint editor
- Re-styled reporter blocks and their 'holders' to look more modern
- Fixed background variable glitches
- Colour arguments report their colour when hovering

## Details for 1.2.0 and 1.3.0

The details for the changes that took place in 1.2.0 and 1.3.0 only.

### Added a 'share' shortcut button

I added the share button back to the shortcut menu next to the file menu for sharing projects to Mod Share.



### Added help screens

Now, for just about every single added block you can find a help screen, just like the one in normal Scratch. I also imported the screens for original Scratch blocks.

### Added a 'set' menu

I added a settings menu after the edit one and put all the settings in it, such as compatibility, graphic effects, motor blocks toggle and theme changing.

### Made changes to the paint editor

I have made two changes to the paint editor. One is an 'export drawing' button to export the canvas to a file. The other one is a font size edit – if you shift-click the font size dropdown arrow, you get a dialog asking you what font size you want. You can input any number between 3 and 380!







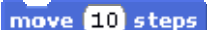



## Improved obsolete to toggle along with compatibility

In version 1.1 I had added a Compatibility function, and I'd also added the blocks removed from Scratch 1.4 to the obsolete list so that they could work when importing a project made in Scratch. One problem: when you saved a project in compatibility mode that used those blocks, they turned red as if they were obsolete. In 1.2 this doesn't happen. The blocks in the obsolete list are removed from it when in compatibility mode so no conflicts happen, and all the blocks added in Bingo to Scratch are put in the list, so that they work even in compatibility mode (with a COMPAT tag next to them to remind the user it's a Bingo block).

## Improved share button (now uploads automatically to mod share)

Previously, in 1.2.0, if you clicked the share button you would send an email to the Bingo team asking them to upload your project. In 1.3.0, there is a fully tested feature which allows you to *automatically* upload to Mod Share (see this [Scratch Forums post](#)) with no intermediate steps.

## Re-styled reporter blocks and their 'holders' to look more modern

Before (1.2.0)	After (1.3.0)
	
	
	
	

## Added little pictures to arguments



## Colour arguments report their RGB colour when hovering

I hovered over the colour and it reported its value in RGB format. How useful for exporting a colour you like into another program!



## Changes in 2.0

These changes were brought about in the latest version.

### Working Visual Themes with Theme Manager

Bingo now allows for custom visual skins that are automatically loaded into the program and saved for subsequent uses. Error handling is included so that no risk is taken when importing a damaged or incomplete theme.



### Integrated Mod Share 3 Browser

You can now browse the projects and users of Mod Share 3 from inside the Bingo interface!

### Default Skin Revamp



As well as allowing custom skins, the default skin has been greatly embellished using homemade graphics.

### Many block glitches fixed

Some blocks in 1.3.0 were very unstable. Bugs were hunted and fixed for this version, although some small features had to be removed. Now all blocks also work in presentation mode just as they would in working mode.

### Data Types and OOP

As stated above in the two feature tutorials, data types and object oriented features are bringing Bingo towards a more advanced direction.

### Streamlined Uploading

Bingo's project uploading system is now fully automated.

### Improved Usage and Visual Features

Bingo 2.0 makes it easier for you to move around the program and get things done quicker.

Especially on small resolution screens, instead of having to move the mouse to fetch the scroll bar in the block palette, you can now drag the background up or down to scroll more easily.

All tooltips have been improved to show more intuitive values. Here is a gallery of the new reporters:

Colours	Images	Sprites

# Thank you

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Thank you for reading the User's Manual for Bingo 2.0. Have fun using the program!