

# 2Code Glossary

**Actions:** Actions are types of commands which are run on a particular object, and cause it to alter its behaviour. Actions could be used to move an object, for example "UP" "DOWN" or "STOP". Actions are often called "methods". See also (object)

**Algorithm:** A precise step by step set of instructions used to solve a problem or achieve an objective.

**Assignment operator:** A type of operator that is used to assign or reassign (or change) the value of a Variable. Examples are "set to" which changes a Variable to a new value. For example the code:"A SET TO 2" will change the value of the Variable A to 2. See also (Variable)

**Block:** A group of commands that are grouped together and are run when a specific condition is met or when an event occurs. For example one could have a "WHEN CLICKED" command and the commands in the "WHEN CLICKED" block would be run when the mouse click occurs. In 2Code, commands in a block are given the same indentation and background shading to indicate they are part of the same block. In real code mode and in many other computer languages blocks of code are indicated with the use of curly brackets { } . See also (events)

**Bug:** A mistake in computer code that prevents the computer program from behaving in the way the coder intended. See also (debugging,debugger)

**Button:** An element on the screen that the user can click on. Usually click on a button generates an event that runs some code. See also (user interface)

**Character:** See: Object

**Coder:** A person who writes computer code.

**Collision detection:** Detecting when two sprites on the screen bump into each other. They are often used in a game to detect when a character hits a 'baddy'. See also (sprite)

**Command:** A command is a single instruction within a computer program. A computer program usually contains several commands. Sometimes commands are called 'statements'.

**Concatenation:** Adding text together is called concatenation. For example one could add two pieces of text 'The cat '+ 'sat on the mat' to create a single piece of text 'The cat sat on the mat.'

**Condition:** This is the 'trigger' for an 'IF' or 'REPEAT UNTIL' command, and is the test that must be fulfilled to trigger the next stage. The test result determines whether or not to run the "IF" or "ELSE" block in an "IF/ELSE" command or whether to keep repeating in a "REPEAT UNTIL" command. For example in the snippet:

```
If A EQUALS B THEN PRINT...
```

"A EQUALS B" is the condition See also (selection,IF/ELSE)

**Conditional operator:** An operator (symbol) which evaluates to either true or false depending on the values either side of it. It is used as part of a condition. Examples are "equals" (as in: 'IF A=B') which will evaluate to true if the values either side of the operator are the same. Other examples include "not equals" or "less than" or "greater than" See also (operator,condition,selection,if/else,repeat until)

**Console log:** The console log is an output 'window' for the computer program that used purely for debugging purposes. It typically is a scrolling list of messages. The messages could contain information about what the program is doing or they could be notification of errors or problems within the program. See also (debugging,debugger)

**Control:** See: Program Control

**Debugger:** A tool that helps coders fix problems in their code. Debuggers often contain a console log, the ability to pause a program, step through a program line by line and the ability to inspect Variables. See also (debugging,coder)

**Debugging:** Fixing problems in code. Often computer programmers spend as much time debugging code as writing code. See also (debugger,coder)

**Design Mode:** In 2Code, Design Mode is used to create the user interface of a computer program (the part of the computer program that the user sees). Using Design Mode a coder can create objects and move them around on the screen. See also (user interface)

**Events:** An event is an occurrence that causes a block of code to be run. The event could be time related (see timer) or could be some kind of user input such as the user pressing a key or clicking the screen. In 2Code, the event commands are used to create blocks of code that are run when events happen. See also (block)

**Functions:** Sometimes a coder wants a group of commands to be run many times within the same program. To save having to repeat the group of commands the coder can put the commands into a 'function' and can give the function a name. Then the coder can 'call' the function (use its name within the program), which will run all the commands in that function.

**IF/ELSE:** An "IF/ELSE" command tests a condition. If the condition is true then the commands inside the "IF" block are run. If the condition is not true and there is an "ELSE" block then the commands inside the "ELSE" block are run. See also (condition,block)

**Input:** Input is information going into the computer. An input could be user the moving or clicking the mouse, or the user entering characters on the keyboard. On tablets there are other forms of input such as finger swipes, touch gestures and tilting the device.

**Logical operators:** Logical operators are used for combining conditions, allowing for complex tests to be created. The most common examples of logical operators are "AND" and "OR". An example of a condition using a logical operator could be "IF A GREATER THAN 0 **AND** A LESS THAN 10 THEN A IS BETWEEN 1 AND 9". For completeness, logical operators have been included in 2Code, but they are beyond the primary school curriculum. Some of the Gorilla (advanced) debug challenges touch upon them. See also (operator,conditon)

**Mathematical operator:** An operator which functions as a typical mathematical statement, eg "+", "-", "x" or "/". The mathematical operator "+" in the code "A+2" will evaluate to 4, if the Variable A is equal to 2. See also (operator,assignment operator)

**Method:** Another word for an action. See also (action)

**Object:** An object is an element in a computer program that can be created and manipulated using the object's actions or properties. In 2Code all the elements on the screen are objects. See also (action,properties)

**Operator:** A symbol that represents a process to apply to the objects on either side, for example "+", "=", or "AND". For example, "a+b" or "IF a=b". In 2Code there are four types of operators: assignment operators, conditional operators, mathematical operators and logical operators. See also (assignment operator,conditional operator,mathematical operator,logical operator)

**Output:** Output is information that comes out of the computer. This could be items that appear on the screen or sound that comes out of the speakers. Examples of output are "Print to screen" and "Sound".

**Program Control:** How parts of the program will run, how often and in some cases, when.

**Programmer:** See: coder

**Properties:** Properties are qualities that are associated with an object. Examples include colour, speed or angle. Properties of an object can be changed in a similar way to Variables using assignment operators. See also (operators,actions,Variable)

**Repeat:** In 2Code a "repeat" command can be used to make a block of commands run a set number of times or to repeat a block of commands forever. See also (sequencing)

**Repeat Until:** in 2Code a "repeat until" command will repeat a block of commands until a condition is met. See also (condition,sequencing)

**Selection:** A decision command, where a program chooses a different outcome depending on a condition, such as "REPEAT...UNTIL" or "IF...ELSE".

**Sequencing:** When a computer program repeats a sequence of commands. In 2Code this could be done using "REPEAT", "REPEAT UNTIL" or using a "Timer". See also (repeat,repeat until,timer)

**Sprite:** An element on the screen that is typically an image. Sprites are often animated and they can be set to move around the screen and can be used, for instance, to represent characters within a game. See also (user interface)

**Statement:** Another word for a command. See also (command)

**Strings:** In code, pieces of text are often called strings.

**Timer:** The timer is a command in 2Code that allows a block of commands to be run either after a timed delay or at regular timed intervals. Real programming languages often have a similar type of command. See also (sequencing,block)

**User interface:** The part of the computer program that the user sees on the screen. Usually this consists of various visible elements such as buttons, sprites or input fields. See also (design mode)

**Variable:** Variables are used in programming to keep track of the things that can change while a program is running, for example, the on/off state of a switch (see SWITCHING BACKGROUND lesson), or to count the number of swipes before changing a lamp into a genie (see GENIE lesson) or the numbers changing in a timer (see NIGHT & DAY gibbon lesson). Variables are like boxes that the computer can use to store information. In order to find the information in the box, each box should be labelled. Therefore, each variable (each of our boxes) needs to have a name. The name should be something that helps you remember what it is. The information inside the box is called the variable value. The user, the program or another variable can change this variable value. In 2Code, variables can be either numbers or text (words, phrases or even whole sentences). See also (operators,object,properties,assignment operators)

**Variable watch:** The variable watch is a debugging tool that allows us to watch the values of our variables as our programs run. See also (variable)