



Basic Commands

Movement

<code>FORWARD fd</code> or <code>FD fd</code>	Moves the turtle forward by <code>fd</code> units.
<code>BACK bk</code> or <code>BK bk</code>	Moves the turtle backward by <code>bk</code> units.
<code>RIGHT rt</code> or <code>RT rt</code>	Rotates the turtle clockwise by <code>rt</code> degrees.
<code>LEFT lt</code> or <code>LT lt</code>	Rotates the turtle counter-clockwise by <code>lt</code> degrees.
<code>PENUP</code> or <code>PU</code>	Lifts the pen, so the turtle moves without drawing.
<code>PENDOWN</code> or <code>PD</code>	Lowens the pen, so the turtle draws as it moves.
<code>HOME</code>	Returns the turtle to the center of the screen, pointing upwards.
<code>CLEARSCREEN</code> or <code>CS</code>	Clears the drawing area.

Pen Control

<code>SETPENCOLOR color</code> or <code>SETPC color</code>	Sets the pen color. <code>color</code> can be a number or a color name (e.g., <code>RED</code> , <code>BLUE</code>).
<code>SETPENSIZE size</code>	Sets the pen size to <code>size</code> . Example: <code>SETPENSIZE [5 5]</code>
<code>FILL</code>	Fills a closed shape with the current pen color.

Turtle Visibility

<code>SHOWTURTLE</code> or <code>ST</code>	Makes the turtle visible.
<code>HIDETURTLE</code> or <code>HT</code>	Hides the turtle.

Control Structures

Repetition

<code>REPEAT count [commands]</code>	Repeats the specified <code>commands</code> <code>count</code> times.
Example:	
	<code>REPEAT 4 [FORWARD 50 RIGHT 90]</code>
	Draws a square.

Conditionals

<code>IF condition [commands]</code>	Executes the <code>commands</code> only if the <code>condition</code> is true.
Example:	
	<code>IF :x > 10 [FORWARD 50]</code>
<code>IFELSE condition [commands_true] [commands_false]</code>	Executes <code>commands_true</code> if the <code>condition</code> is true, otherwise executes <code>commands_false</code> .
Example:	
	<code>IFELSE :x > 10 [FORWARD 50] [BACK 50]</code>

Variable Assignment

<code>MAKE "variable value</code>	Assigns <code>value</code> to the variable named <code>variable</code> .
Example:	
	<code>MAKE "size 50</code> <code>FORWARD :size</code>
<code>THING "variable</code>	Retrieves the value of a variable.
Example:	
	<code>SHOW THING "size</code>

Procedures

Defining Procedures

Use <code>T0 procedure_name</code> to start a procedure definition and <code>END</code> to finish it.
<code>T0 square :size</code>
<code>REPEAT 4 [FORWARD :size RIGHT 90]</code>
<code>END</code>

Calling Procedures

Call a procedure by simply typing its name followed by any required arguments.
<code>square 50</code>

Example Procedure with Parameters

<code>T0 polygon :sides :size</code>
<code>REPEAT :sides [FORWARD :size RIGHT 360/:sides]</code>
<code>END</code>
<code>polygon 6 30 ; Draws a hexagon with sides of length 30</code>

Math and Logic

Arithmetic Operators

<code>+</code>	Addition
<code>-</code>	Subtraction
<code>*</code>	Multiplication
<code>^</code>	Division
<code>%</code>	Modulo (remainder)

Comparison Operators

<code>></code>	Greater than
<code><</code>	Less than
<code>=</code>	Equal to

Random Numbers

<code>RANDOM limit</code>	Generates a random integer between 0 and <code>limit - 1</code> .
Example:	
	<code>FORWARD RANDOM 100</code>