

Light Logo Language Reference

Word	Meaning	Examples
<u>Turtle and Lights</u>		
reset	<ul style="list-style-type: none"> • turns off all the lights • sets the turtle's position to 0 • shows the turtle • sets the turtle's heading to 1, which is clockwise on a ring • sets the pen color to 0, which is red • puts the pen down • sets brightness to the default value of 20 	
clean	<ul style="list-style-type: none"> • turns off all the lights • sets the turtle's position to 0 • sets the turtle's heading to 1, which is clockwise on a ring • sets the color to 0, which is red • puts the pen down 	
fd	moves the turtle forward the specified number of lights	fd 5 fd 10
bk	moves the turtle back the specified number of lights	bk 5 bk 10
setc	sets the pen color. The colors are numbered between 0 and 100. Some colors also have names: red 0 orange 10 yellow 20 green 30 cyan 40 blue 70 magenta 85 white -9999	setc 0 setc blue
pd	puts the turtle's pen down so that it turns lights on in the current pen color as it moves forward or back.	
pu	picks the turtle's pen up so that it	

	does not affect lights as it moves forward or back	
pe	sets the turtle's pen to erase mode so that it turns lights off as it moves forward or back	
stamp	sets the color of the light under the turtle to the current pen color	
all	turns all the lights to the color specified by its input	all blue all 55
st	shows the turtle, which appears as a white light	
ht	hides the turtle. If a light has been turned on under the turtle, it will become visible	
setpos	sets the turtle's position. On a strip, 0 is at one end. On a ring, 0 is the pixel next to the Data Input connection wire.	setpos 0 setpos 12
pos	reports the turtle's current position. This ranges from 0, which is the position of the turtle following clean or reset, to 1 less than the number of lights on the strip or ring.	
seth	sets the direction in which the turtle will move with the next fd command. On a ring, 1 is clockwise and -1 is counterclockwise	seth 1 seth -1
flip	changes the turtle's heading from what it is to the opposite. On a ring this switches between clockwise and counterclockwise	
setbrightness	sets the brightness of the current pen color. The range is 0 to 99. The default is 20.	setbrightness 40 setbrightness 20
setstripsize	tells LightLogo the number of lights on the Neopixel device you are using. The default value is 24 for the 24-light Neopixel ring. If you are using this device you do	setstripsize 30 setstripsize 24

	not need to use the setstripsize command. If you are using a different Neopixel device, use the setstripsize command before doing anything else in the session.	
<u>Control</u>		
loop	repeats a list of instructions indefinitely	loop [all red wait 1000 clean wait 1000]
repeat	repeats a list of instructions a specified number of times	repeat 10 [fd 1 wait 1000]
wait	waits for a specified number of milliseconds.	wait 500 wait 10
resett timer	resets the millisecond timer to 0 reports the number of milliseconds since starting Light Logo or since the last resett command	
resets seconds	resets the seconds timer to 0 reports the number of seconds since starting Light Logo or since the last resets command	
resetm minutes	resets the minutes timer to 0 reports the number of minutes since starting Light Logo or since the last resetm command	
stop	stops the current procedure	
output	stops the current procedure and reports a value	
if	tests a condition and runs a list of instructions if the test reports true	if seconds > 10 [all red]
ifelse	tests a condition and runs a list of instructions if the test reports true, runs a second list of instructions if the test reports false	ifelse switch8 [all red] [all blue]
print	Prints a number in the command center on the host computer	print 123 123

		print 4 + 5 9
Numbers and Logic		
note that it is necessary to have spaces between these operations and their inputs. For example, 5 + 4 is correct, but 5+4 is not.		
+	reports the sum of two numbers	4 + 5 pos + 1
-	reports the difference between two numbers	7 - 5 pos - 1
*	multiplies two numbers	2 * 3
/	reports the quotient of two numbers	6 / 3
%	reports the remainder of the division of one number by another	5 % 4
>	reports true if its first input is greater than its second input, false otherwise (true is 1, false is -1)	5 > 4 5 > 6
<	reports true if its first input is less than its second input, false otherwise (true is 1, false is -1)	5 > 4 5 > 6
=	reports true if its two inputs are equal, false otherwise (true is 1, false is -1)	5 = 5
!=	reports true if its two inputs are not equal, false otherwise (true is 1, false is -1)	5 = 6
and	reports true if both its inputs are true, false if one or both are false (true is 1, false is -1)	print (5 = 5) and (5 = 5) 1 print (5 = 4) and (5 = 5) 0
or	reports true if either of its inputs is true, false if both are false (true is 1, false is -1)	print (5 = 5) or (5 = 5) 1 print (5 = 4) or (5 = 5) 1 print (4 = 5) or (3 = 5) 0
not	reports the opposite of its input	print not (5 = 4) 1 print not (5 = 5)

		0
random	reports a random number in the range between its two inputs, inclusive.	setc random 0 100 fd random 6 8
Variables		
box1 box2	reports the current value of a global variable. The names are preprogrammed into Light Logo	fd box1 wait box2
setbox1 setbox2	sets the value of a global variable	setbox1 100 repeat 10 [all blue wait box1 clean wait box1 setbox1 box1 + 100]
let	creates a local variable and assigns it a value. May be used only within a procedure	to test let [foo 5] print :foo + 1 end test 6
make	changes the value of a local variable. May be used only within a procedure	to test let [foo 5] print :foo make "foo 10 print :foo make "foo :foo + 1 print :foo end test 5 10 11
Arduino Pins		
in8 in9 in10 in11	digital inputs equivalent to INPUT_PULLUP mode in Arduino. Reports true if there is an open circuit between the pin and GND,	

	false if there is a closed circuit	
switch8 switch9 switch10 switch11	Reports false if there is an open circuit between the pin and GND, true if there is a closed circuit. This is the opposite of in8...in11. The functionality is the same, but the names and the values reported are more intuitive and appropriate when used with a switch connected between a pin and GND.	
a0 a1 a2 a3 a4 a5	analog reporters that report a value between 0 and 100	
sensor0 sensor1 sensor2 sensor3 sensor4 sensor5	analog reporters that report a value between 0 and 100. The same functionality as a0...a5, but with a more intuitive name	
on3 on4 on5 on6 on7	digital outputs. Sets the pin high.	
off3 off4 off5 off6 off7	digital outputs. Sets the pin low.	
pwm3 pwm5 pwm6	pulse width modulation, sends a variable amount of power to the pin. Input values are between 0 and 100	pwm3 50 pwm5 10 pwm5 90
pwm3off pwm5off pwm6off	turns off pulse width modulation to the specified pin	