

CS108L Computer Science for All

Module 1 NetLogo Code Cheat Sheet

Command / Variable	Description
to <name>	Statement used to name and start a procedure Example: to setup clear-all end
end	Statement used to end a procedure
clear-all	Deletes all turtles and resets all patches to default values
create-turtles # create-turtles # [commands]	Creates the specified number of turtles at origin and gives a random heading to each turtle Example: create-turtles 1 ;; creates 1 turtle with a random heading and color create-turtles 2 [set color 45 ;; creates two turtles, sets their color to yellow, and sets their heading up (north) set heading 0]
ask turtles [commands]	Asks <i>all</i> the turtles to perform the instructions (commands) given in square brackets. Each turtle performs the instructions one at a time. Example: ask turtles [forward 1 ;; asks all the turtles to move forward 1 step] ;; Note: For this class, you should never have an ask turtles block inside another ask turtles block. This would mean you're asking <i>every</i> turtle to ask <i>every other</i> turtle to do something.
forward #	Tells an agent to move forward a number of patches Example:

	forward 1
back #	Tells an agent to move back a number of patches Example: back 1
pen-down	Tells an agent to put its pen down to draw a trail
pen-up	Tells an agent to pick up its pen and stop drawing a trail
setxy # #	Move the turtle to the x-coordinate and y-coordinate given Example: setxy 10 20 ;; moves the turtles to patch 10 20 (upper right quadrant)
set heading #	Sets heading or direction that the agent faces in degrees relative to the Netlogo coordinate system Example: set heading 90
right #	Asks the turtle to turn right a certain number of degrees relative to the direction the turtle is currently facing Example: right 90
left #	Asks the turtle to turn left a certain number of degrees relative to the direction the turtle is currently facing Example: left 90
set color color_name	Specifies or changes the color of the turtles to the specified color (color_name). Some possible color names include red, blue, green, orange, yellow, pink, magenta, lime, gray, and violet. Example: set color red
set size #	Specifies or changes the size of the turtles to a specified number (#). The default is 1. Example: set size 3
set pen-size #	Specifies or changes the size of the pen the turtles carry to a specified number (#). The default is 1. Example: set pen-size 3

ask turtle # [commands]	Asks a specific turtle to perform the commands in brackets.
repeat # [commands]	<p>Repeats the set of commands in the square bracket a certain number (#) of times.</p> <p>Example:</p> <p>;; the turtle turns right 5° and steps forward 1 step 20 times</p> <pre>repeat 20 [right 5 forward 1]</pre>
sprout # sprout # [commands]	<p>Creates # new turtles on a patch. Only a patch can sprout. The new turtles have random integer headings and the color is randomly selected. The turtles immediately run <i>commands</i>. This is useful for giving the new turtles different colors, headings, or whatever.</p> <p>Example:</p> <p>ask patch 0 0 ;; asks the patch at coordinate 0 0 (in the center) to:</p> <pre>[sprout 5 ;; sprout 5 turtles with random colors and headings sprout 1 [set color red ;; sprout 1 additional turtle and make it red]]</pre>