

# CS151L Fall 2013

## Week 5: Netlogo Command Cheat Sheet

Command	Command Description
clear-patches	Clears the patches by resetting all patch variables to their default values, including setting their color to black.
pcolor	This is a built-in patch variable. It holds the color of the patch. You can set this variable to make the patch change color.
set pcolor # (or name or RGB)	The command line sets the patch color. Color can be represented either as a NetLogo color (a single number or name) or an RGB color (a list of 3 numbers). <b>Example:</b> set pcolor 15 ; set the color of the patch to red
patch # #	<b>patch xcor ycor:</b> Given the x and y coordinates of a point, reports the patch containing that point. (The coordinates are absolute coordinates; they are not computed relative to this agent, as with patch-at.) If x and y are integers, the point is the center of a patch. If x or y is not an integer, rounding to the nearest integer is used to determine which patch contains the point.
ask patch # # [commands]	Asks the specific patch to run the commands given in the command block <b>Example:</b> ask patch 1 3 [set pcolor 15] ; asks patch 1 3 to set its color to red
ask patches [commands]	Asks the all patches to run the commands given in the command block <b>Example:</b> ask patches [set pcolor 15] ; asks all the patches to set thier color to red
max-pxcor, max-pycor	These reporters give the maximum x-coordinate and maximum y-coordinate, (respectively) for patches, which determines the size of the world. <b>Example:</b> create-turtles 100 [ setxy random-float max-pxcor random-float max-pycor ] ;; distributes 100 turtles randomly in the ;; first quadrant
min-pxcor, min-pycor	These reporters give the minimum x-coordinate and minimum y-coordinate, (respectively) for patches, which determines the size of the world. <b>Example:</b> create-turtles 100 [ setxy random-float min-pxcor random-float min-pycor ] ;; distributes 100 turtles randomly in the ;; third quadrant
round #	Reports the integer nearest to #. If the decimal portion of <i>number</i> is exactly .5, the number is rounded in the <b>positive</b> direction. <b>Example:</b> show round 4.2 ;; => 4 show round 4.5 ;; => 5 show round -4.5 ;; => -4

<p>if <i>condition</i> [<i>commands</i>]</p>	<p>If <i>condition</i> reports true, then the program runs the commands in the command block. The reporter may report a different value for different agents, so some agents may run <i>commands</i> and others don't. <b>Example:</b> if xcor &gt; 0[ set color blue ] ;; turtles in the right half of the world turn blue</p>
<p>ifelse <i>condition</i> [<i>commands1</i>] [<i>commands2</i>]</p>	<p>If <i>condition</i> is true, runs <i>commands1</i>. If <i>condition</i> is false, runs <i>commands2</i>. The reporter may report a different value for different agents, so some agents may run <i>commands1</i> while others run <i>commands2</i>. <b>Example:</b> ask patches [     ifelse pxcor &gt; 0         [ set pcolor blue ]         [ set pcolor red ] ] ;; the left half of the world turns red and the right half turns blue</p>
<p>patch-ahead #</p>	<p>Give you patch that is the given distance, #, "ahead" of this turtle, that is, along the turtle's current heading. Reports nobody if the patch does not exist because it is outside the world. <b>Example:</b> ask patch-ahead 1 [ set pcolor green ] ;; turns the patch 1 in front of this turtle green; note that this might be the same patch the turtle is standing on</p>
<p>random-pxcor, random-pycor</p>	<p>Provides a random integer ranging from min-pxcor (or -y) to max-pxcor (or -y) inclusive. Example: setxy random-pxcor random-pycor</p>
<p>Distancexy # #</p>	<p>Reports the distance from this agent to the point (<i>xcor</i>, <i>ycor</i>). The distance from a patch is measured from the center of the patch. Turtles and patches use the wrapped distance (around the edges of the world) if wrapping is allowed by the topology and the wrapped distance is shorter. <b>Example:</b> if (distancexy 0 0) &gt; 10     [ set color green ] ;; all turtles more than 10 units from the center of the world turn green.</p>
<p>resize-world # # # #</p>	<p>Changes the size of the patch grid. As a side effect, all turtles and links die, and the existing patch grid is discarded and new patches created so it should be used before you create the turtles.</p>