



# Python Turtle Cheat Sheets

Use these statements at the start of every program

## Getting ready to draw

<code>import turtle</code>	Make all the turtle commands available to your program
<code>turtle.mode('logo')</code>	Set the mode
<code>turtle.speed(<i>integer</i>)</code>	Set the animation speed of the turtle. <i>1</i> = slowest, <i>10</i> = fastest. <i>0</i> turns off animation completely
<code>turtle.shape('turtle')</code>	Set the shape. You can also choose from: <i>arrow</i> , <i>square</i> , <i>circle</i> , <i>triangle</i> and <i>classic</i>

## Movement

<code>turtle.forward(<i>distance</i>)</code>	Go forwards by amount <i>distance</i>
<code>turtle.backward(<i>distance</i>)</code>	Go backwards by amount <i>distance</i>
<code>turtle.right(<i>angle</i>)</code>	Turn right by <i>angle</i> degrees
<code>turtle.left(<i>angle</i>)</code>	Turn left by <i>angle</i> degrees
<code>turtle.home()</code>	Go home (0, 0) and face north
<code>turtle.goto(<i>x</i>, <i>y</i>)</code>	Go to position <i>x</i> , <i>y</i>
<code>turtle.setheading(<i>degrees</i>)</code>	Point in compass direction <i>degrees</i> . 0 is north, 90 is east, 180 is south, 270 is west

## An example:

```
import turtle

turtle.mode('logo')
turtle.speed(10)
turtle.shape('turtle')

# Draw a square
turtle.forward(100)
turtle.right(90)
turtle.forward(100)
turtle.right(90)
turtle.forward(100)
turtle.right(90)
turtle.forward(100)
```

## Some other useful commands

<code>x, y = turtle.pos()</code>	Sets the variables <i>x</i> and <i>y</i> to the turtle's current position
<code>turtle.resizemode('auto')</code>	Use this command at the start of your program to change the size of the turtle when the pen size changes. Useful for stamping!
<code>turtle.circle(<i>radius</i>)</code>	Draw a circle with the given <i>radius</i> (a number). <i>radius</i> can be negative.
<code>turtle.circle(<i>radius</i>, <i>angle</i>)</code>	Draw a part of a circle with <i>radius</i> . The <i>angle</i> denotes how much of the circle is drawn. For example, if <i>angle</i> is <i>180</i> then a semicircle will be drawn. <i>angle</i> can be negative.

## Time to paint!

<code>turtle.begin_fill()</code>	Use this command before you start drawing the shape you want to be filled
<code>turtle.end_fill()</code>	Use this command when you have finished drawing the shape to be filled.
<code>turtle.pendown()</code>	Put the pen down to draw
<code>turtle.penup()</code>	'Lift' the pen from the screen
<code>turtle.pensize(integer)</code>	Set the size of the pen to the given integer.
<code>turtle.pencolor(string)</code>	Set the pen colour to the string given. <b>Note the American spelling.</b>
<code>turtle.fillcolor(string)</code>	Set the fill colour to the string given. See list of colours below.
<code>turtle.color(string)</code>	Set <b>both</b> the fill colour and pen colour to given string.
<code>turtle.color(string1, string2)</code>	Set the pen and fill colour at the same time. <i>String1</i> should be the name of the pen colour, and <i>string2</i> is the fill colour.

## Stamplicious

<code>turtle.stamp()</code>	Stamp the current turtle shape onto the screen.
<code>turtle.clearstamps()</code>	Clear all of the stamps on the screen.
<code>stampID = turtle.stamp()</code>	Stamps the turtle onto the screen, and sets the variable <i>stampID</i> to an integer, unique to each stamp.
<code>turtle.clearstamp(stampID)</code>	Clear the stamp with the given <i>stampID</i> number.



```
# Line of random stamps
```

```
import turtle
import random
```

```
random.seed()
turtle.mode('logo')
turtle.speed(10)
turtle.resizemode('auto')
```

```
myColourList = ['red', 'black', 'orange', 'blue', 'purple']
myShapeList = ['turtle', 'arrow', 'square', 'circle', 'triangle', 'classic']
```

```
def makeStamp():
    turtle.setheading(random.randint(1, 360))
    turtle.pensize(random.randint(1, 7))
    turtle.color(random.choice(myColourList))
    turtle.shape(random.choice(myShapeList))
    turtle.stamp()
```

```
# Main program
turtle.penup()
for i in range(10):
    makeStamp()
    turtle.setheading(90)
    turtle.forward(50)
```

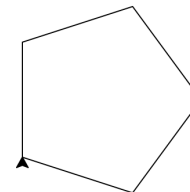
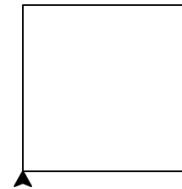
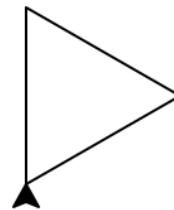
## Iteration examples:

```
for i in range(3):  
    turtle.forward(100)  
    turtle.right(120)
```

```
for i in range(4):  
    turtle.forward(100)  
    turtle.right(90)
```

```
for i in range(5):  
    turtle.forward(100)  
    turtle.right(72)
```

Can you see a pattern between the numbers on the left, and the shapes on the right?



How could you use this knowledge to draw an octagon?



## Random examples:

```
# Get a random number between 1 and 10  
myNumber = random.randint(1, 10)  
  
# Set the variables x and y to random grid co-ordinates  
x, y = random.randint(-100, 100), random.randint(-100, 100)  
  
# Pick a random string from a list  
myColourList = ['red', 'black', 'orange', 'blue']  
myColour = random.choice(myColourList)
```





# COLOUR LIST

AliceBlue	chartreuse2	DarkOrchid4	goldenrod2	LightBlue2
AntiqueWhite	chartreuse3	DarkRed	goldenrod3	LightBlue3
AntiqueWhite1	chartreuse4	DarkSalmon	goldenrod4	LightBlue4
AntiqueWhite2	chocolate	DarkSeaGreen	green	LightCoral
AntiqueWhite3	chocolate1	DarkSeaGreen1	green1	LightCyan
AntiqueWhite4	chocolate2	DarkSeaGreen2	green2	LightCyan1
aquamarine	chocolate3	DarkSeaGreen3	green3	LightCyan2
aquamarine1	chocolate4	DarkSeaGreen4	green4	LightCyan3
aquamarine2	coral	DarkSlateBlue	GreenYellow	LightCyan4
aquamarine3	coral1	DarkSlateGray	grey	LightGoldenrod
aquamarine4	coral2	DarkSlateGray1	greyX	X can be any integer between 1 & 100
azure	coral3	DarkSlateGray2	honeydew	LightGoldenrod1
azure1	coral4	DarkSlateGray3	honeydew1	LightGoldenrod2
azure2	CornflowerBlue	DarkSlateGray4	honeydew2	LightGoldenrod3
azure3	cornsilk	DarkSlateGrey	honeydew3	LightGoldenrod4
azure4	cornsilk1	DarkTurquoise	honeydew4	LightGreen
beige	cornsilk2	DarkViolet	HotPink	LightGrey
bisque	cornsilk3	DeepPink	HotPink1	LightPink
bisque1	cornsilk4	DeepPink1	HotPink2	LightPink1
bisque2	cyan	DeepPink2	HotPink3	LightPink2
bisque3	cyan1	DeepPink3	HotPink4	LightPink3
bisque4	cyan2	DeepPink4	IndianRed	LightPink4
black	cyan3	DeepSkyBlue	IndianRed1	LightSalmon
blanchedalmond	cyan4	DeepSkyBlue1	IndianRed2	LightSalmon1
BlanchedAlmond	DarkBlue	DeepSkyBlue2	IndianRed3	LightSalmon2
blue	DarkCyan	DeepSkyBlue3	IndianRed4	LightSalmon3
blue1	DarkGoldenrod	DeepSkyBlue4	ivory	LightSalmon4
blue2	DarkGoldenrod1	DimGray	ivory1	LightSeaGreen
blue3	DarkGoldenrod2	DimGrey	ivory2	LightSkyBlue
blue4	DarkGoldenrod3	DodgerBlue	ivory3	LightSkyBlue1
BlueViolet	DarkGoldenrod4	DodgerBlue1	ivory4	LightSkyBlue2
brown	DarkGray	DodgerBlue2	khaki	LightSkyBlue3
brown1	DarkGreen	DodgerBlue3	khaki1	LightSkyBlue4
brown2	DarkGrey	DodgerBlue4	khaki2	LightSlateBlue
brown3	DarkKhaki	firebrick	khaki3	LightSlateGrey
brown4	DarkMagenta	firebrick1	khaki4	LightSteelBlue
burlywood	DarkOliveGreen	firebrick2	lavender	LightSteelBlue1
burlywood1	DarkOliveGreen1	firebrick3	LavenderBlush	LightSteelBlue2
burlywood2	DarkOliveGreen2	firebrick4	LavenderBlush1	LightSteelBlue3
burlywood3	DarkOliveGreen3	FloralWhite	LavenderBlush2	LightSteelBlue4
burlywood4	DarkOliveGreen4	ForestGreen	LavenderBlush3	LightYellow
CadetBlue	DarkOrange	gainsboro	LavenderBlush4	LightYellow1
CadetBlue1	DarkOrange1	GhostWhite	LawnGreen	LightYellow2
CadetBlue2	DarkOrange2	gold	LemonChiffon	LightYellow3
CadetBlue3	DarkOrange3	gold1	LemonChiffon1	LightYellow4
CadetBlue4	DarkOrange4	gold2	LemonChiffon2	LimeGreen
chartreuse	DarkOrchid	gold3	LemonChiffon3	linen
chartreuse1	DarkOrchid1	gold4	LemonChiffon4	magenta
	DarkOrchid2	goldenrod	LightBlue	magenta1
	DarkOrchid3	goldenrod1	LightBlue1	magenta2

magenta3	OrangeRed1	red2	snow3
magenta4	OrangeRed2	red3	snow4
maroon	OrangeRed3	red4	SpringGreen
maroon1	OrangeRed4	RosyBrown	SpringGreen1
maroon2	orchid	RosyBrown1	SpringGreen2
maroon3	orchid1	RosyBrown2	SpringGreen3
maroon4	orchid2	RosyBrown3	SpringGreen4
MediumAquamarine	orchid3	RosyBrown4	SteelBlue
MediumBlue	orchid4	RoyalBlue	SteelBlue1
MediumOrchid	PaleGoldenrod	RoyalBlue1	SteelBlue2
MediumOrchid1	PaleGreen	RoyalBlue2	SteelBlue3
MediumOrchid2	PaleGreen1	RoyalBlue3	SteelBlue4
MediumOrchid3	PaleGreen2	RoyalBlue4	tan
MediumOrchid4	PaleGreen3	SaddleBrown	tan1
MediumPurple	PaleGreen4	salmon	tan2
MediumPurple1	PaleTurquoise	salmon1	tan3
MediumPurple2	PaleTurquoise1	salmon2	tan4
MediumPurple3	PaleTurquoise2	salmon3	thistle
MediumPurple4	PaleTurquoise3	salmon4	thistle1
MediumSeaGreen	PaleTurquoise4	SandyBrown	thistle2
MediumSlateBlue	PaleVioletRed	SeaGreen	thistle3
MediumSpringGreen	PaleVioletRed1	SeaGreen1	thistle4
MediumTurquoise	PaleVioletRed2	SeaGreen2	tomato
MediumVioletRed	PaleVioletRed3	SeaGreen3	tomato1
MidnightBlue	PaleVioletRed4	SeaGreen4	tomato2
MintCream	PapayaWhip	seashell	tomato3
MistyRose	PeachPuff	seashell1	tomato4
MistyRose1	PeachPuff1	seashell2	turquoise
MistyRose2	PeachPuff2	seashell3	turquoise1
MistyRose3	PeachPuff3	seashell4	turquoise2
MistyRose4	PeachPuff4	sienna	turquoise3
moccasin	peru	sienna1	turquoise4
NavajoWhite	pink	sienna2	violet
NavajoWhite1	pink1	sienna3	VioletRed
NavajoWhite2	pink2	sienna4	VioletRed1
NavajoWhite3	pink3	SkyBlue	VioletRed2
NavajoWhite4	pink4	SkyBlue1	VioletRed3
NavyBlue	plum	SkyBlue2	VioletRed4
OldLace	plum1	SkyBlue3	wheat
OliveDrab	plum2	SkyBlue4	wheat1
OliveDrab1	plum3	SlateBlue	wheat2
OliveDrab2	plum4	SlateBlue1	wheat3
OliveDrab3	PowderBlue	SlateBlue2	wheat4
OliveDrab4	purple	SlateBlue3	white
orange	purple1	SlateBlue4	WhiteSmoke
orange1	purple2	SlateGrey	yellow
orange2	purple3	snow	yellow1
orange3	purple4	snow1	yellow2
orange4	red	snow2	yellow3
OrangeRed	red1	snow3	yellow4
			YellowGreen