Python Turtle Reference Sheet

Move Relative

Move forward
```
forward(100)
```

Move backward
```
backward(100)
```

Turn right
```
right(90)
```

Turn left
```
left(45)
```

If the pen is down when the turtle makes an absolute or relative move, a line will be drawn.

Move Absolute

Go to a point on the screen
```
goto(50, 50)
```

Set the horizontal location
```
setx(150)
```

Set the vertical location
```
sety(100)
```

Point in a certain direction
```
setheading(45)
```

Go to (0,0) and face right
```
home()
```

The Turtle

Hide the turtle
```
hideturtle()
```

Show the turtle
```
showturtle()
```

Change the turtle's shape
```
shape('square')
```

Change turtle speed to fast
```
speed(10)
```

Change turtle speed to instantaneous
```
speed(0)
```

Drawing

Put the pen down
```
pendown()
```

Pick the pen up
```
penup()
```

Set the width of the line
```
pensize(5)
```

Set the pen color
```
pencolor('red')
```

Fill shape with color
```
fillcolor('purple')
begin_fill()
<draw a shape>
end_fill()
```

Stamp turtle shape
```
stamp()
```

Erase the screen
```
clear()
```

Erase the screen and send the turtle to (0,0)
```
reset()
```

Draw a dot
```
dot(10, 'blue')
```

Draw a circle
```
circle(100)
```

Draw a semi-circle
```
circle(100,180)
```

Draw a hexagon
```
circle(100,360,6)
```

The World

Set screen color
```
bgcolor('yellow')
```

Put picture in background
```
bgpic(<gif file>)
```

Set the screen size
```
screensize(100,200)
```

Set the window title
```
title(<string>)
```

Functions

Define function polygon
```
def polygon(size, sides):
  for i in range(sides):
    forward(size)
    right(360/sides)
```

Call function polygon
```
polygon(75, 8)
```

Python Libraries

Turtle Drawing
```
from turtle import *
```

Random Numbers
```
from random import *
```

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Colors

Red, green, and blue are the three primary colors of light.
The float value 0.0 represents no brightness of that color. The float value 1.0 represents full brightness of that color. So the color red is represented by the RGB color tuple (1.0, 0, 0). The color purple is half-bright red and half-bright blue, so it is represented by the RGB color tuple (0.5, 0.0, 0.5). Full brightness of red and blue makes pink: (1.0, 0.0, 1.0)

Set the pen color to green

```
pencolor(0.0, 1.0, 0.0)
```

Set the turtle color to dark gray. Note: this will change the pen color unless pen color is also set

```
color(0.25, 0.25, 0.25)
```

Colors can also be set by name. Here are some that Python understands:

black	k	dimgrey	dimgray
grey	gray	darkgray	darkgrey
silver	lightgrey	lightgray	gainsboro
whitesmoke	white	w	snow
rosybrown	lightcoral	indianred	brown
firebrick	maroon	darkred	red
r	mistyrose	salmon	tomato
darksalmon	coral	orangered	lightsalmon
sienna	seashell	chocolate	saddlebrown
sandybrown	peachpuff	peru	linen
bisque	darkorange	burlywood	antiquewhite
tan	navajowhite	blanchedalmond	papayawhip
moccasin	orange	wheat	oldlace
floralwhite	darkgoldenrod	goldenrod	cornsilk
gold	lemonchiffon	khaki	palegoldenrod
darkkhaki	ivory	beige	lightyellow
lightgoldenrodyellow	olive	y	yellow
olivedrab	yellowgreen	darkolivegreen	greenyellow
chartreuse	lawngreen	sage	lightsage
darksage	honeydew	darkseagreen	palegreen
lightgreen	forestgreen	limegreen	darkgreen
green	g	lime	seagreen
mediumseagreen	springgreen	mintcream	mediumspringgreer
mediumaquamarine	aquamarine	turquoise	lightseagreen
mediumturquoise	azure	lightcyan	paleturquoise
darkslategray	darkslategrey	teal	darkcyan
c	cyan	aqua	darkturquoise
cadetblue	powderblue	lightblue	deepskyblue
skyblue	lightskyblue	steelblue	aliceblue
dodgerblue	lightslategrey	lightslategray	slategray
slategrey	lightsteelblue	cornflowerblue	royalblue
ghostwhite	lavender	midnightblue	navy
darkblue	mediumblue	blue	b
slateblue	darkslateblue	mediumslateblue	mediumpurple
blueviolet	indigo	darkorchid	darkviolet
mediumorchid	thistle	plum	violet
purple	darkmagenta	m	fuchsia
magenta	orchid	mediumvioletred	deeppink
hotpink	lavenderblush	palevioletred	crimson
pink	lightpink		

Turtle Shapes

Built-in turtle shapes are: ‘arrow’, ‘turtle’, ‘square’, ‘triangle’, ‘classic’. Or you can define a new shape with the register-shape function using a tuple of pairs of coordinates

```
register_shape(‘triangle’, ((5,-3), (0,5), (-5,-3))
```