

## Quick reference guide to Turtle library

First thing to do: `from turtle import *`

### Graphics Window

to create a graphics window use `Screen()`

example: `window = Screen()`

The screen's size by default is 400 (height) x 300 (width)

to change the screen size use `screensize(<width>, <height>, <background>)`

example: `window.screensize(800,600,"yellow")`

to check the screen size use `screensize()`

example: `window.screensize()`

`(400,300)`

to close the graphics window on click use `exitonclick()`

Example: `window.exitonclick()`

To create a drawing turtle use `Turtle()`

Example: `tom = Turtle()`

### Drawing state of the pen:

1. `pendown()`

example: `tom.pendown()`

now every movement we do with the turtle will be visible

2. `penup()`

example: `tom.penup()`

now any movement we do with the turtle is not reflected by a line

3. `pensize()`

example: `tom.pensize(5)`

change the width of the drawing line

### Color control of the pen

1. `color()`

Examples:

`tom.color("blue","yellow")`

`tom.color()`

`('blue', 'yellow')`

either tells us what colors (of pen and fill color) are in place, or sets them

set the pen color to "blue" and the fill color to "yellow"

what are the colors of the pen?

they are: "blue" for the pen and "yellow" for the fill color



2. `pencolor()` either tells us what color is used for pen or allows us to change it  
Example: `tom.pencolor("red")`

3. `fillcolor()` either tells us what color is used for pen or allows us to change it  
Example: `tom.fillcolor("green")`

### Fill control of the pen

`begin_fill()` and `end_fill()` are used to say when do we want to use the fill color

Example:  
`tom.color("blue","red")`  
`tom.begin_fill()`  
`tom.circle(30)`  
`tom.end_fill()`

### Moving and drawing

1. `forward()` moves the turtle forward, the distance is given in pixels  
Example: `tom.forward(100)`

2. `backward()` moves the turtle backward, the distance is given in pixels  
Example: `tom.backward(90)`

3. `right()` turns the turtle to the right (in degrees)  
Example: `tom.right(90)` turns the turtle 90 degrees to the right

4. `left()` turns the turtle to the left (in degrees)  
Example: `tom.left(90)` turns the turtle 90 degrees to the left

5. `goto()` moves the turtle into an absolute position  
Example: `tom.goto( (100,20) )` note that the parameter is a point!

6. `home()` moves the turtle to the origin (0,0)  
Example: `tom.home()`

7. `circle()` draws a circle of some radius (in pixels)  
Example: `tom.circle(100)` a circle of radius 100 pixels

8. `dot()` draws a circular dot  
Example: `tom.dot()`



9. `stamp()` and `shape()`

turtle has a bunch of shapes:

The ones available “out of the box” are `arrow`, `blank`, `circle`, `classic`, `square`, `triangle`, `turtle`.

Example:

```
tom.("turtle")  
tom.stamp()
```

10. `xcor()` and `ycor()`

allow us to check on the x-coordinate and y-coordinate of the turtle

Example: `tom.xcor()`

270

More can be found here:

<https://docs.python.org/3/library/turtle.html>

