

Name	Parameters	Description
<b>Move and Draw</b>		
forward fd	Distance	Move the turtle forward
backward back bk	Distance	Move the turtle backward
right rt	Angle	Turns the turtle clockwise
left lt	Angle	Turns the turtle counterclockwise
goto setpos setposition	x, y	Moves turtle to position (x, y)
setx	x	Changes turtle's x position, leaves y position unchanged
sety	y	Changes turtle's y position, leaves x position unchanged
setheading seth	Angle	Makes the turtle face the given angle
home	None	Moves the turtle to position (0,0) facing at angle 0
dot	size, color	Parameters are optional. Draws a dot
stamp	none	Stamps a copy of the turtle's shape and returns a <i>stamp_id</i>
clearstamp	<i>stamp_id</i>	Removes the stamp
undo	none	Undo (repeatedly) the last turtle action(s)
speed	0 ... 10	Set turtle's speed. Speed 0 means no animation
	'slowest' 'slow' 'normal' 'fast' 'fastest'	Set turtle's speed to 1 Set turtle's speed to 3 Set turtle's speed to 6 Set turtle's speed to 10 Set turtle's speed to 0
reset	None	Delete drawing, recenter turtle, set variables to default values
clear	None	Delete drawing
write	String	Writes the string
hideturtle ht	None	Make turtle invisible - draws faster
showturtle st	None	Makes turtle visible
isvisible	None	Return True if turtle is visible, False otherwise
getscreen	None	Return the screen the turtle is drawing on.
shape	Name	Set shape to arrow, turtle, circle, square, triangle, classic
<b>Get Turtle's State</b>		
position pos	None	Return the turtle's (x,y) position
xcor	None	Return the turtle's x coordinate
ycor	None	Return the turtle's y coordinate
heading	None	Return the turtle's current heading
distance	x, y	Returns the distance from turtle to (x, y)
<b>Settings for Measurements</b>		
degrees	Increments	Number of increments in a full circle. Default is 360
radians	None	Sets angle measurement to radians
<b>Pen Control</b>		
pendown down pd	None	Put the pen down
penup up pu	None	Pick the pen up
pensize width	Width	Set(get) pen width. With no parameter, returns pen width
isdown	None	Returns True if pen is down, False if pen is up
<b>Color Control</b>		
pencolor	None (r, g, b) r, g, b colorstring	Return pen color Set pen color Set pen color See <a href="http://www.tcl.tk/man/tcl8.4/TkCmd/colors.htm">http://www.tcl.tk/man/tcl8.4/TkCmd/colors.htm</a>
fillcolor	Same as pencolor	Set fill color
color	Same as pencolor	Sets both pen and fill color
<b>Filling</b>		
begin_fill	None	Called just before drawing shape to be filled.
end_fill	None	Fill the shape drawn since begin_fill was called
filling	None	Return True if filling, False otherwise

## Turtle Screen Methods

Name	Parameters	Description
Window Control		
bgcolor	Same as pencolor	Set background color
clearscreen clear	None	Delete all drawings and turtles & reset TurtleScreen
resetscreen reset	None	Reset all turtles to their initial state
screensize	width, height	Change size of screen
setworldcoordinates	llx, lly, urx, ury	Set coordinate system
delay	milliseconds	Set (or return) delay between canvas updates
tracer	Integer $n$	Only each $n^{th}$ update is drawn. Zero turn animation off.
update	None	Draw screen. Used when <b>tracer</b> is set to zero.
bye	None	Closes the window.
setup	width, height	Set size of main window.

## Example

```
import turtle
turtle.setup(450,450)
wn = turtle.Screen()
wn.bgcolor('lightgreen')
wn.title('Turtle Demo')

alex = turtle.Turtle()

alex.forward(100)
alex.right(90)
alex.forward(100)
alex.goto(0,0)

alex.forward(100)
alex.right(90)
alex.forward(100)
alex.goto(0,0)

alex.forward(100)
alex.right(90)
alex.forward(100)
alex.goto(0,0)

alex.forward(100)
alex.right(90)
alex.forward(100)
alex.goto(0,0)

alex.pencolor('blue')
alex.pensize(3)

alex.fillcolor('red')
alex.begin_fill()

alex.forward(50)
alex.right(90)
alex.forward(50)
alex.goto(0,0)
alex.end_fill()
```

```
alex.begin_fill()
alex.forward(50)
alex.right(90)
alex.forward(50)
alex.goto(0,0)
alex.end_fill()

alex.begin_fill()
alex.forward(50)
alex.right(90)
alex.forward(50)
alex.goto(0,0)
alex.end_fill()

alex.begin_fill()
alex.forward(50)
alex.right(90)
alex.forward(50)
alex.goto(0,0)
alex.end_fill()

alex.hideturtle()

turtle.done()
```

### Output From Example

