What Else Can a Turtle Do?

How do we know all of the things that we can do with a turtle or Screen? The version of Python that we are using is Python 3. You can find documentation for Python at http://docs.python.org/3/ (http://docs.python.org/3/). You can see all the things that turtles know how to do at http://docs.python.org/3/library/turtle.html (http://docs.python.org/3/library/turtle.html) In the example below, we show just show a couple of new things and have only commented those lines that are different from the previous examples.

```
from turtle import *
canvas = Screen()
canvas.setup(400,200)
canvas.bgcolor("yellow")        # set the background color for the canvas
tess = Turtle()
tess.color("blue")
tess.pensize(5)                 # set the width of the turtle's pen

tess.forward(50)
tess.left(120)
tess.forward(50)
tess.penup()                    # pick up the pen (don't draw when you move
tess.goto(10,10)                # go to a x and y location
tess.pendown()                  # put the pen down (draw again)
tess.forward(30)

canvas.exitonclick()            # wait for a user click on the canvas

```

ActiveCode: 1 (a_5)

Run

Save Load

The last line, `canvas.exitonclick()` , will close the window where the turtle has been drawing when the user clicks in the window. Go ahead and try it. Click in the window that displays the results of the program above and it should close.

Check your understanding

trl-1: Where is the point (0,0) on the canvas (screen) that the turtle is drawing on?

- a) The point (0,0) is the center of the drawing canvas.
- b) The point (0,0) is the top left corner of the drawing canvas.
- c) The point (0,0) is the bottom left corner of the drawing canvas.

Check Me | Compare Me

Correct!! The point (0,0) is the center of the drawing canvas. It is at half the width and half the height.

trl-2: Which of the following puts the pen down so that the turtle can draw again?

- a) tess.penup()
- b) tess.goto(10,10)
- c) tess.pendown()

Check Me | Compare Me

Correct!! This puts the pen down so that the turtle will draw when it moves.

trl-3: How do you tell the canvas window to close when the user clicks on it?

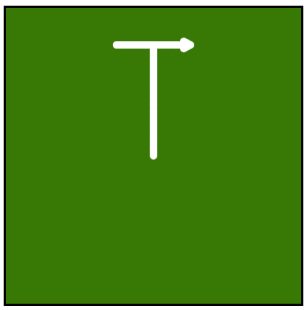
- a) canvas.setup(400,200)
- b) canvas.bgcolor("yellow")
- c) canvas.exitonclick()

Check Me | Compare Me

Correct!! This tells the program to stop when the user clicks on the canvas. It also closes the canvas window.

Mixed up programs

trl-4: The following program uses a turtle to draw a capital T in white on a green background as shown to the left, but the lines are mixed up. The program should do all necessary set-up, create the turtle, and set the pen size to 10. After that the turtle should turn to face north, draw a line that is 150 pixels long, turn to face west, and draw a line that is 50 pixels long. Next, the turtle should turn 180 degrees and draw a line that is 100 pixels long. Finally, set the window to



close when the user clicks in it.

Drag the blocks of statements from the left column to the right column and put them in the right order. Then click on *Check Me* to see if you are right. You will be told if any of the lines are in the wrong order.

Drag from here

Drop blocks here

```
from turtle import *
wn = Screen()
wn.bgcolor("green")
jamal = Turtle()
jamal.color("white")
jamal.pensize(10)
```

```
jamal.left(90)
jamal.forward(150)
```

```
jamal.left(90)
jamal.forward(50)
```

```
jamal.right(180)
jamal.forward(100)
```

```
wn.exitonclick()
```

Check Me | Reset

Perfect!