Drawing with Turtle: Shapes, Colors, and Loops You Can See

Python for Absolute Beginners · Lesson 11

What you'll learn

- What Turtle is, and why it comes free with Python
- How to move the turtle and turn it
- How to draw a square, then draw it with a loop
- How to change colors and lift the pen
- How to design a shape of your own

Meet the turtle

- Turtle is a drawing tool built into Python itself — no download, no install, it is already there
- When you run a Turtle program, a drawing window opens with a small arrow (the “turtle”) in the middle
- Your instructions move the turtle, and it draws a line wherever it walks
- Turtle programs must be run in IDLE to be seen — the drawing appears on screen

Moving and turning

- forward() moves the turtle ahead by a number of steps (think pixels on screen)
- right() turns it clockwise by a number of degrees
- backward() moves it back the way it faces; left() turns it counter-clockwise
- Those four moves are enough to draw anything made of straight lines

Moving and turning in code

```
import turtle
t = turtle.Turtle()
t.forward(100)
t.right(90)
t.forward(100)
turtle.done()

Output: an L shape, drawn on screen.
```

Run this in IDLE: the turtle draws a line, turns right 90 degrees, and draws a second line.

Three things in that snippet

- import turtle loads the Turtle tool — without it, Python has no idea what turtle means
- t = turtle.Turtle() creates your turtle and stores it in t — from now on, t.forward(...) means “my turtle, move forward”
- turtle.done() at the end keeps the drawing window open so you can admire your work — without it, the window may close at once

A square, written out longhand

```
import turtle
t = turtle.Turtle()
t.forward(100)
t.right(90)
t.forward(100)
t.right(90)
t.forward(100)
t.right(90)
t.forward(100)
t.right(90)
turtle.done()
```

Four lines and four quarter-turns make a square — but the same two lines repeat four times.

The same square, with a loop

```
                          import turtle
t = turtle.Turtle()
for side in range(4):
    t.forward(100)
    t.right(90)
turtle.done()

Output: the same square, drawn on screen.
```

Same square, in a third of the lines: “do these two moves four times.”



Colors and lifting the pen

- color() changes the pen's color — color names are plain English words in quotes: “red”, “blue”, “green”, “purple”, “orange”
- penup() lifts the pen so the turtle moves without drawing; pendown() puts it back down
- Together they let you draw in several colors without connecting lines
- If you misspell a color, Turtle will tell you — another friendly error message

Colors and penup in code

```
import turtle
t = turtle.Turtle()
t.color("red")
for side in range(4):
    t.forward(100)
    t.right(90)
t.penup()
t.forward(150)
t.pendown()
t.color("blue")
t.circle(50)
turtle.done()
```

Run in IDLE: a red square, a silent move of 150 steps, then a blue circle of radius 50.

Output: a red square and a blue circle, drawn on screen.

Design a shape of your own

- A triangle is three sides and three turns of 120 degrees (3 × 120 = 360, a full turn)
- A house is a square plus a triangle roof
- A star takes five sides and 144-degree turns — try it and see why the angle is not the obvious one
- The habit to build: guess, run, look at what actually happened, and adjust — with Turtle, the feedback is a picture

Hands-on exercise

- Draw a square with a loop, exactly like the lesson, and run it in IDLE
- Change the loop to draw a triangle (3 sides, 120-degree turns) and run it
- Draw two shapes in different colors, using penup() and pendown() to move between them without a connecting line
- Invent one shape of your own — a house, a star, or anything else — and write down how many sides and what turn angle it needed

Key takeaways

- Turtle is built into Python: import turtle, then t = turtle.Turtle()
- forward() and backward() move; right() and left() turn in degrees
- A loop plus Turtle turns repetition into pictures you can see
- color() changes pen color; penup() / pendown() control whether movement draws
- circle(50) draws a circle of radius 50; turtle.done() keeps the window open

Take the quiz

Take the Lesson 11 quiz — 5 quick questions to check what you learned.

Next lesson

Lists: Many Items, Plus Indexing and Append