



## 5.1. Hello Little Turtles!



Activity: 1 -- Video: (vid\_turtleintro)

There are many *modules* in Python that provide very powerful features that we can use in our own programs. Some of these can send email or fetch web pages. Others allow us to perform complex mathematical calculations. In this chapter we will introduce a module that allows us to create a data object called a **turtle** that can be used to draw pictures.

Turtle graphics, as it is known, is based on a very simple metaphor. Imagine that you have a turtle that understands English. You can tell your turtle to do simple commands such as go forward and turn right. As the turtle moves around, if its tail is down touching the ground, it will draw a line (leave a trail behind) as it moves. If you tell your turtle to lift up its tail it can still move around but will not leave a trail. As you will see, you can make some pretty amazing drawings with this simple capability.

### Note

The turtles are fun because they allow us to visualize what our code is doing, but the real purpose of the chapter is to teach ourselves a little more Python and to develop our theme of computational thinking. You'll first draw simple geometric shapes with the turtles, and then we'll summarize the concepts and syntax you've learned, in particular, classes, instances, and method invocations. These concepts are the building blocks of object-oriented programming, a paradigm for structuring a program that is widespread in every modern programming language.

### 5.1.1. Learning Goals

- To understand the use of loops as a way of repeating actions
- To introduce the idea of looking for patterns when problem solving
- To distinguish between instances, attributes, and methods

### 5.1.2. Objectives

- Write a multi-line program (using the turtle framework)
- Invoke methods & set attributes using dot notation
- Use the for loop to draw common geometric shapes with the turtle

You have attempted 1 of 1 activities on this page

✓ Completed. Well Done!

5. Python Turtle">

on Turtle">

5.2. Our First Turtle Program">

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