Python on Trinket – Lesson 1

Create a Trinket account

- **trinket.io/python**
- **Teachers may already have Google accounts set up for their students, in which case students can easily login to Trinket using their google account (Log in → Sign in with Google). Students can now save their projects and access them by logging in.**
- **Students can create projects using the visual drag-and-drop Python interface (user_name → New Trinket → Blocks). If students have prior coding experience, they may wish to code directly in the Python programming language (user_name → New Trinket → Python).**

Discussion

- **What is coding? What have you done with coding?**
- **Code is everywhere – computers, phones, shopping, social media, cars, video games, watches, robots. Coding is about making things, and sharing what you make with the world.**
- **Python: Web applications (Twitter, Instagram), video games, space missions, science labs (data analysis), music & video (Netflix, Youtube)**


Topics

- **Introduce the interface/layout of Python on Trinket**
    - **On the left, the block palette contains all code blocks (commands) organized into groups. Blocks can be dragged into the scripts area to create a program.**
    - **In the middle, the scripts area is where we place our program's code.**
   - **On the right, we click play to run our program.**
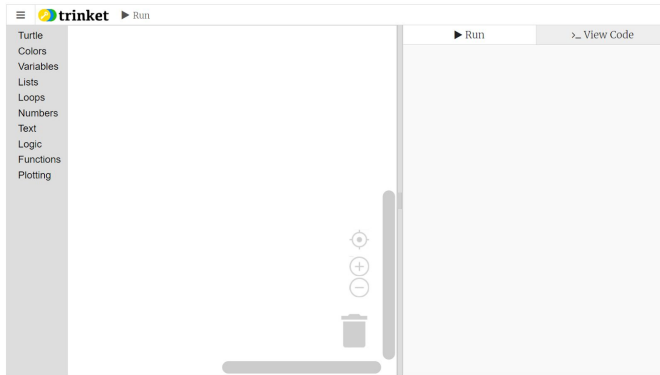
- **X/Y axes & coordinates**
    - o **We change our x and y position to move the turtle to various positions on the screen. Students may find the graphic below useful in reminding them when to use positive and negative x/y values.**
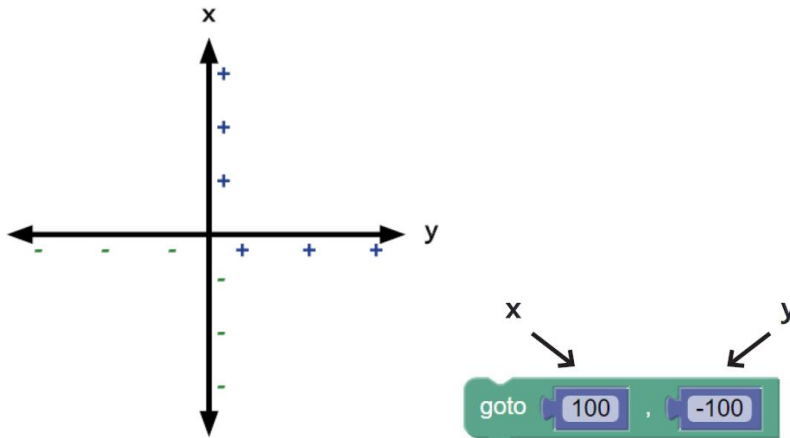
- **Pen up, pen down**
    - o **Just like lifting your pen off the paper – you won't leave a trace.**
    - o *Pen up* **when you want your turtle to move without drawing.** *Pen down* **when you are ready to start drawing again.**
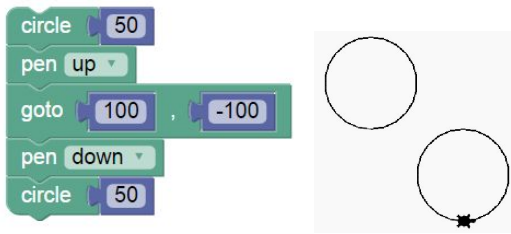
- **Begin fill, end fill**
    - o **To fill a shape, enclose it within a *begin fill* and an *end fill*. Otherwise, simply the outline of shapes are drawn.**
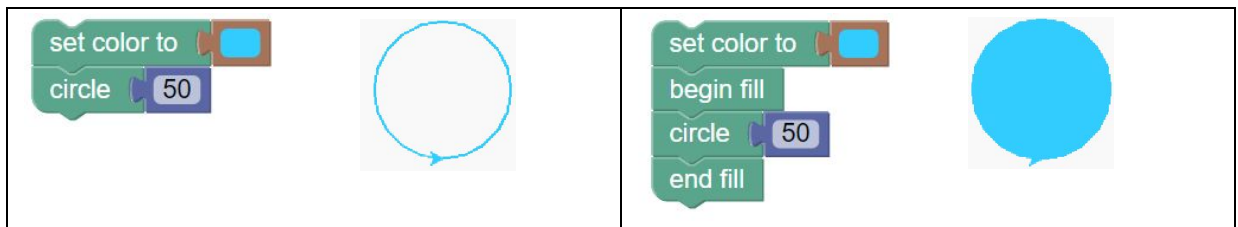
- **Shapes**
    - o **Created according a radius size**
    - o **i.e. circle(50) draws a circle with a radius of 50**

Lesson

- **Free for all! Create shapes of assorted colours, fills, and locations.**

**Example Programs (see 'Learn Python using Trinket.io by Gheorghe Comanici',
https://sites.google.com/site/pythonontrinket/)**

```
shape turtle ▾
speed 3
set color to random colour
begin fill
circle 30
end fill
goto 0 , -50
print to Title Case " Woops sorry. Let's be more like a turtle. "
speed 1
repeat 3 times
do   set color to random colour
     begin fill
     circle 30
     end fill
goto 0 , -180
print to Title Case " Hi guys! I'm an awkward turtle "
```
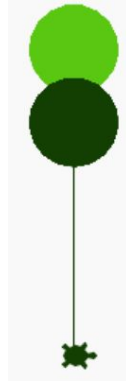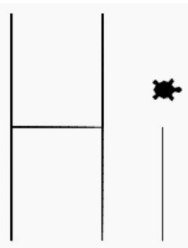
```
shape turtle ▾
pen up ▾
goto -100 , 0
pen down ▾
goto -100 , 50
goto -100 , -100
goto -100 , -25
goto -40 , -25
goto -40 , 50
goto -40 , -100
pen up ▾
goto 0 , -100
pen down ▾
goto 0 , -25
pen up ▾
goto 0 , 0
```

```
shape  turtle ▾
speed  2
pen  up ▾
set color to  ▢
goto  0 , 0
pen  down ▾
begin fill
circle  15
end fill
pen  up ▾
set color to  ▢
goto  0 , -40
pen  down ▾
begin fill
circle  20
end fill
pen  up ▾
set color to  ▢
goto  0 , -140
pen  down ▾
begin fill
circle  50
end fill
pen  up ▾
```

```
goto  0 , -50
set color to  ▢
write  " Snowman! "
font size  16
goto  0 , -80
```