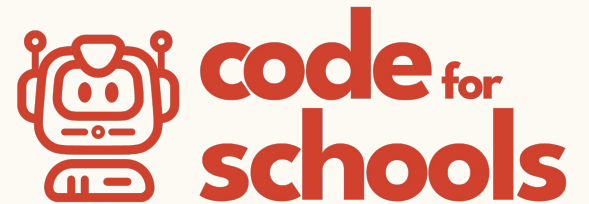


# Lesson 1

Introduction to Coding



# Learning objectives

By the end of this lesson:

- I can access the course resources, and use them
- I can play a text adventure game
- I can understand what a programming language is
- I can write my first program in Python!
- I can play a graphical game and explore how to modify it

# Introduction Worksheet & Scavenger Hunt

- Complete the worksheet below by yourself, or together as a class.
- When you're done, share what you wrote with the person next to you.
- Review as a class.



[Complete worksheet here](#)

# Have you ever wanted to...

- Create an **app** or **website**?
- Create amazing new photo and video **filters**?
- **Cure cancer** or help make **scientific discoveries**?
- Make smart **robots** or **self-driving vehicles**?
- Make **video games**?



# What You Can Produce With Coding

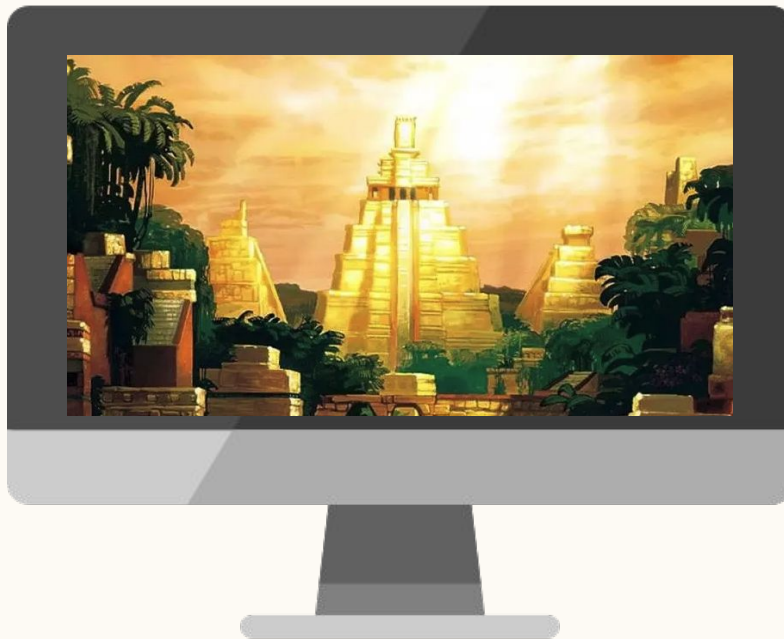
- Software that drives cars
- Apps like Instagram, Snapchat, and TikTok
- Online shopping apps
- Study tools
- Hairstyling and fashion simulations
- Games
- Smart robots
- ... and loads more!



# Skills that you will develop as you learn how to code

- **Analysing** and **solving complex problems**
- Being **confident** at **using** and **developing computer applications**
- Being **resourceful**, **investigative**, and **creative**
- Making **maths come alive**
- Improving your **personal** and **technical communication skills**
- Working in **teams**
- Building **resilience** with learning and using new skills

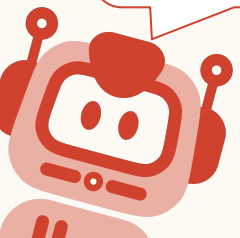
# Activity 1.01: City of Gold!



## Helpful Hints

- On the editor, click on the **run** button to play the game!

You'll make a game like this in your final assignment!



[Click here to play a Text Based Adventure Game](#)

# How computers work

- Computers can operate **very fast**
- However, they need to be told what to do
  - They need instructions that are **step-by-step**
  - They do exactly as they are told and they're **very strict with spelling!**
- When we give instructions to a computer, we must also communicate in **a language that the computer understands**
- There are **many languages** that have been invented for computers
- What computer "programming languages" do you know?

# How computers work

- Computers can operate **very fast**
- However, they need to be told what to do
  - They need instructions that are **one step**
  - They do exactly as they are told **very strict with spelling!**
- When we give instructions to a computer, we must also communicate in a **language that the computer understands**
- There are **many languages** that have been invented for computers
- What computer "programming languages" do you know?

A large red circle containing a white pause symbol (two vertical bars) and a blue rectangular box with the text "Pause for Class Response" in yellow.

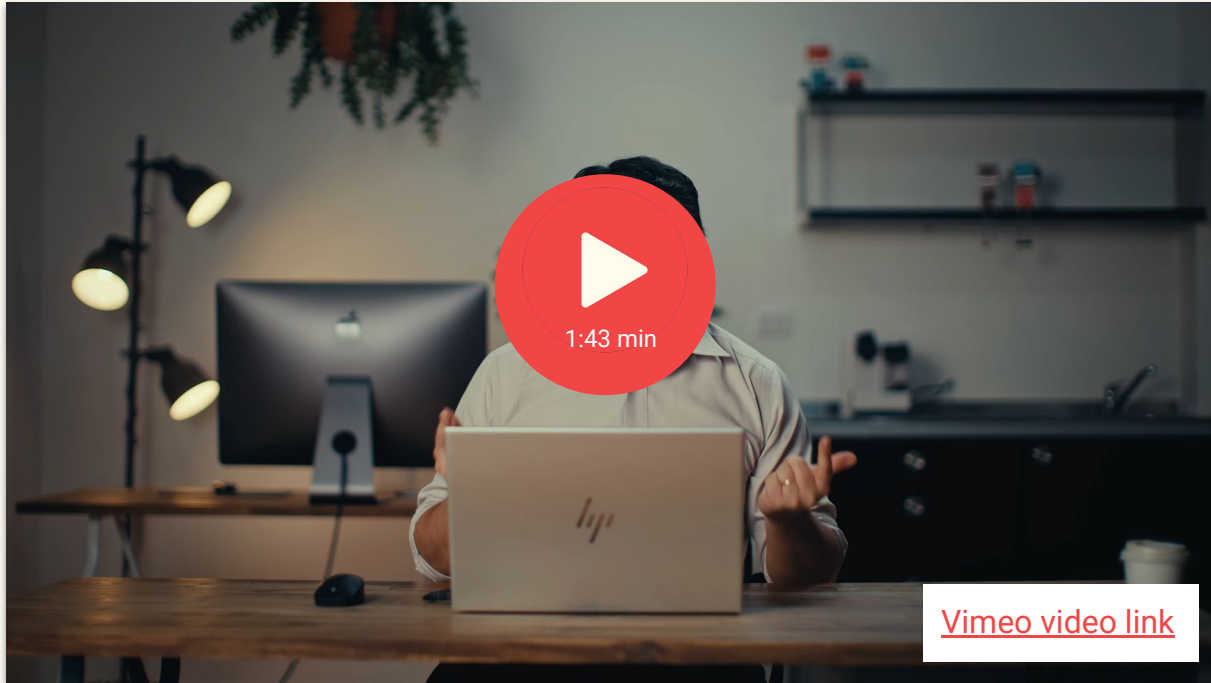
Pause for  
Class Response

# Using the Python programming language

- We are going to use the **Python** programming language in this course
- Python looks a bit like English and is quite readable
- There are **lots of code already written** in Python that you can **borrow** in your programs
- **Python is a very popular programming language** in software engineering and science
  - It is used in companies such as Amazon, Google, Facebook, and Microsoft, as well as many schools and universities around the world!
- It does require **typing** though. It may be trickier to get started than some other languages (such as Scratch), but soon enough, you will be able to do things much more quickly!

**Let's Write Our First Program in Python!**

# Your First Python Program!



[Link to Accompanying Slides](#)  
(PDF, powerpoint)

# Activity 1.02: Hello World!

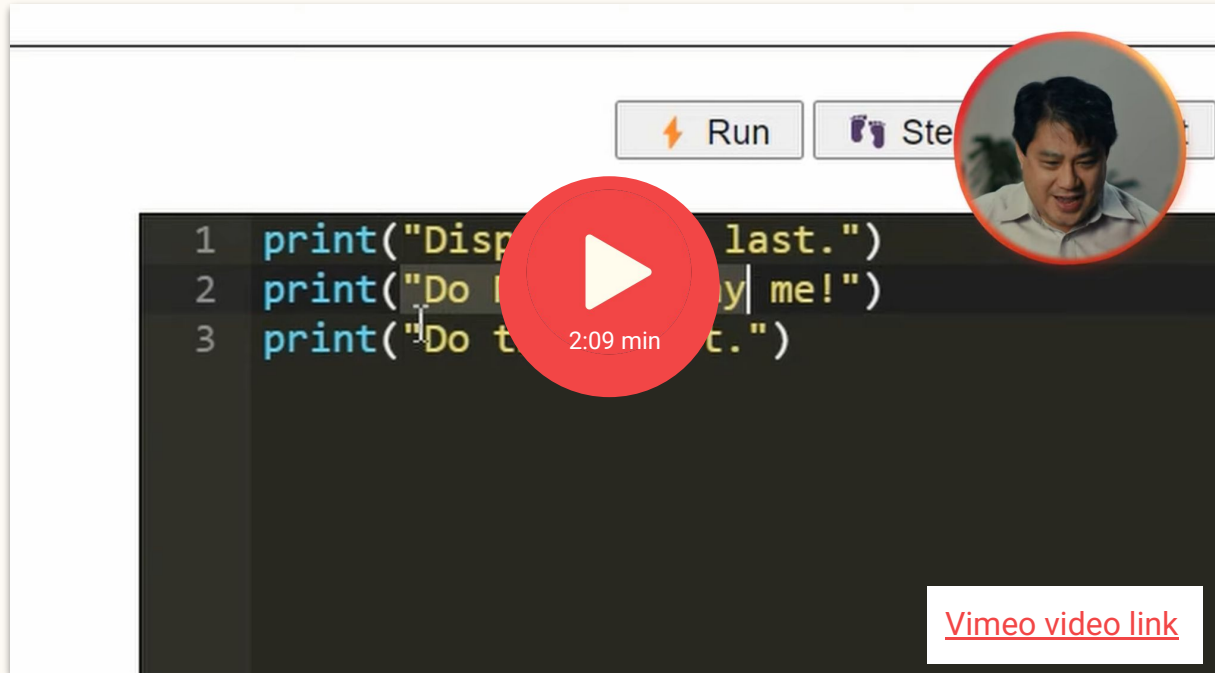


## Activity 01.02 [Hello, World!](#)

### Helpful Hints

- This is your very first program!
- You'll need to use:  
`print()`

# One Line At a Time



The screenshot shows a code editor window with three lines of Python code:

```
1 print("Display the last.")
2 print("Do I really love me!")
3 print("Do I really love me.")
```

At the top right of the editor, there are buttons for "Run" (with a lightning bolt icon) and "Step" (with a play icon). A circular video player overlay is positioned in the center, featuring a play button and a duration of "2:09 min". In the top right corner of the video player, there is a circular inset showing a man's face. In the bottom right corner of the code editor, there is a white box containing the text "[Vimeo video link](#)".



[Link to Accompanying Slides](#)

(PDF, powerpoint)

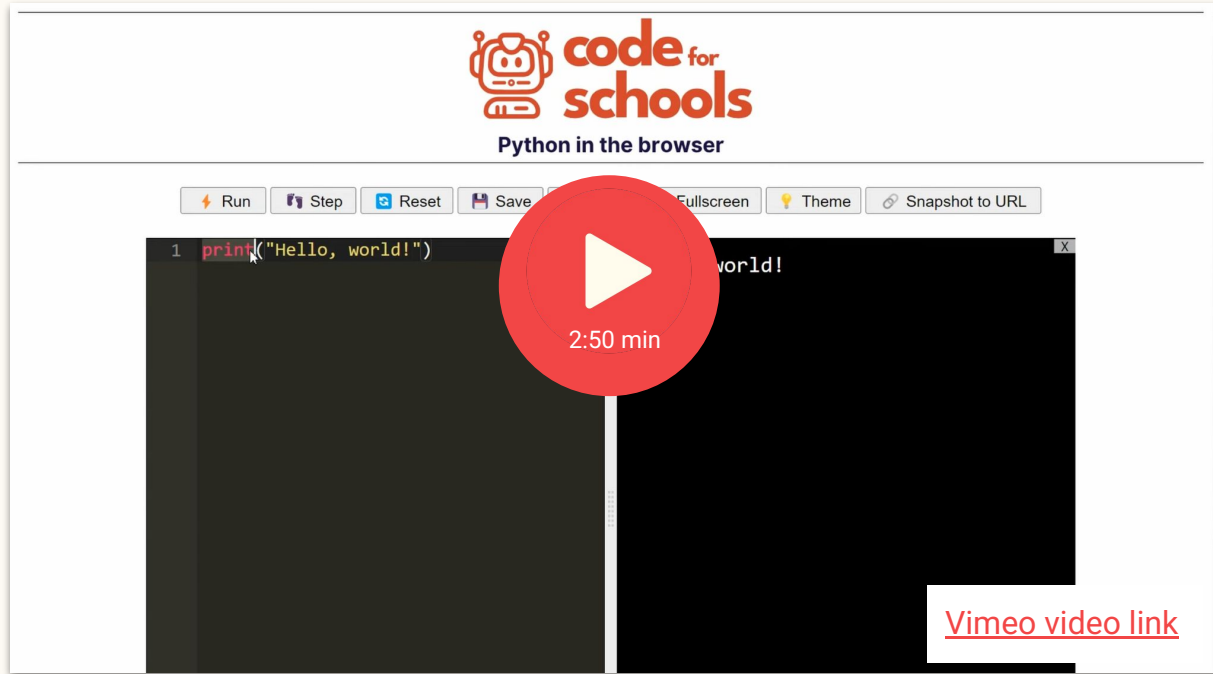
# Activity 1.03: A Conversation in Python!



**Activity 01.03**

[A Conversation in Python](#)

# Another Function: say



code for schools

Python in the browser

Run Step Reset Save Fullscreen Theme Snapshot to URL

```
1 print("Hello, world!")
```

Hello, world!

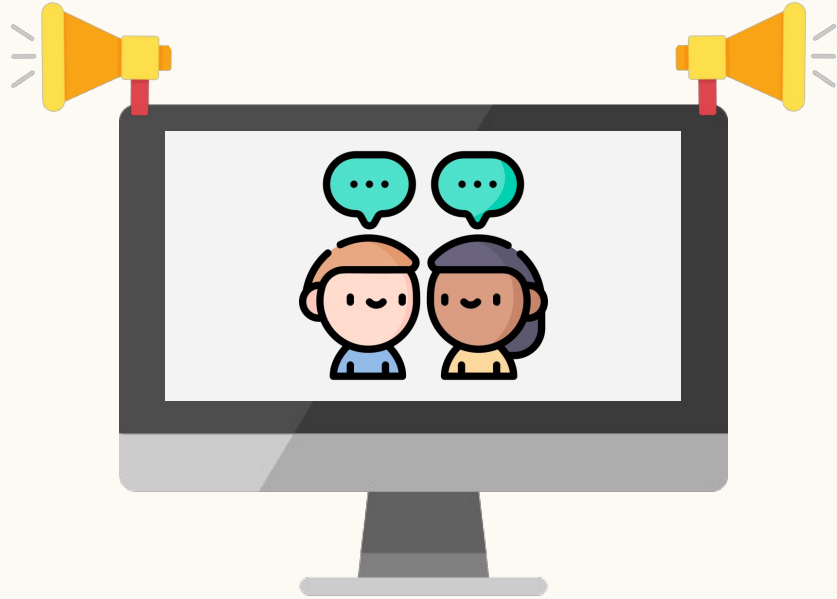
2:50 min

[Vimeo video link](#)



[Link to Accompanying Slides](#)  
(PDF, powerpoint)

# Activity 1.04: A Spoken Conversation in Python!



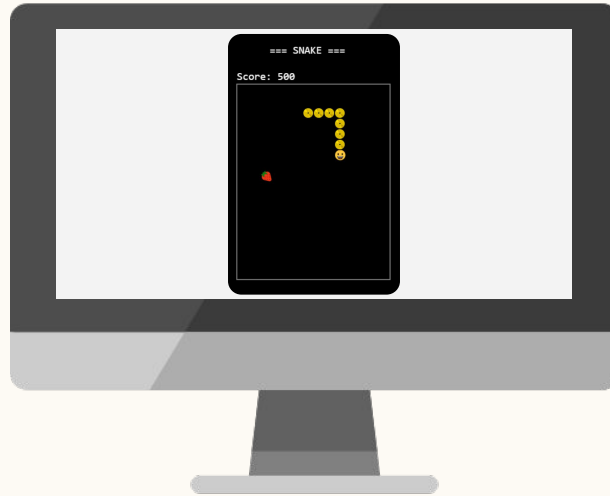
## Activity 01.04

### [A Spoken Conversation in Python](#)

#### Helpful Hints

- You'll need to use:  
`say()`

# Extension Activity 1.05: Playing Snake!



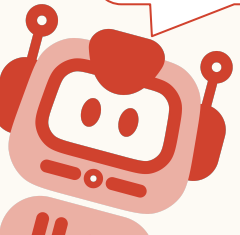
## Helpful Hints

Need some help?

[Watch the tutorial video.](#)

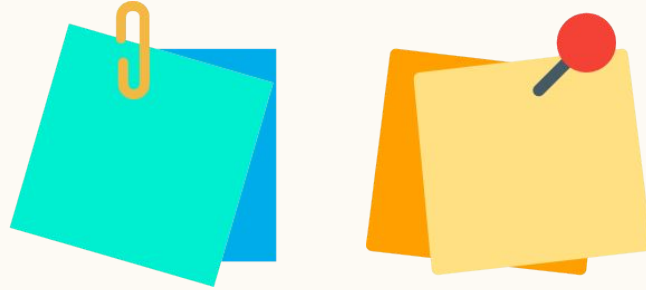
Snake is a classic game that you can make with Python!

**Extension Activity 01.04**  
[Play Snake here!](#)



# Reflection: Exit pass

- What is one new thing you learnt today?
- Write it on a sticky note and stick it on the board before you leave the classroom



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