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Raspberry Pi Reaction Timer

Welcome to the KS3/4 scheme of work for simple electronics and Python with the Raspberry Pi!

Learning outcomes

Students will learn:

- What the Pi is, its features, how to plug it in and get started.together.
- To control the Raspberry Pi's GPIOs using Python.
- How to build simple circuits with buttons and LEDs,
- Software design skills,
- How to build a reaction timer.

Resources

For a class of 30, you will need:

- 15 Raspberry Pis
- 15 NOOBS SD cards,

- 15 USB keyboards, mice,
- 15 HDMI monitors,
- 15 [Piffin Lab Kits](#) or equivalent.
- [Python 2.7](#) installed on your PC to demonstrate Python codes.

Handouts

Ensure that students keep their handouts as older ones come into use again later on. Handouts are linked from the online lesson plans, or you can [download everything at once](#).

Lesson plans

If your students already have a basic grounding in Python, you can optionally skip the Turtle Prize (though we encourage you to enter anyway!)

Each lesson is designed to last 1 hour.

- Introduction to Python with 3 lesson plans from [the Turtle Prize competition](#).
- [Lesson 1 - The Raspberry Pi](#)
- [Lesson 2 - Elementary electronics & Python Stopwatch](#)
- [Lesson 3 - Flash an LED with Python](#)
- [Lesson 4 - Detecting button presses with conditionals](#)
- [Lesson 5 - Starting the reaction timer](#)
- [Lesson 6 - Build reaction timer circuit & Test](#)

Download

Download all [lesson plans, support documents and handouts](#) as PDFs.