

Year 10 Computer Science

Bridging Project Summer 2020

Project description

When we return in September, you will be working on your **programming project**. This is going to require you to design, develop and test a program which has been written using Python.

To prepare for this, your task over the summer holiday is to refresh your Python programming skills.

Detailed below are a number of ways in which you can refresh your skills – these are just suggestions, but you should aim to make sure that when you come back to school, your Python skills are as **proficient as possible**.

At the very least, you should spend a minimum of **two hours** on one or more of these activities – there is nothing to stop you spending more time if you would like to!

W3Schools.com

This is a great website where you can refresh your Python skills from the basics upwards. There are quizzes, self-marking tests, exercises and an excellent reference guide.

<https://www.w3schools.com/python/default.asp>

Start a project

There is no better way to develop your Python programming skills than setting yourself a project to complete. Below are some ideas for projects you could have a go at – some more complicated than others!

- Create 6 random lottery numbers. How many times would you have to play the lottery before your chosen numbers came up?
- Play Snakes and Ladders.
- Help with trigonometry. The user enters 2 sides of a right angle triangle, the computer calculates the hypotenuse. etc.
- Play Hangman. (Graphics optional!)
- Play Blackjack.
- Create strong random passwords.
- Ask the user to enter a four digit number and display it in words, e.g. 33 becomes thirty three.
- For any year entered by the user: display if it's a leap year.
- Display a line of text to the user, and time how long it takes them to type it.

OCR Code Challenges

The exam board have put together a number of code challenges to help you develop your Python skills. These start out pretty straightforward and progress to more challenging tasks later on. You could use the W3Schools website as a reference to help you with these tasks.