

Computer Science

Subject level

A-level

Resource site

www.wqe.ac.uk/tasteractivities

Subject context

A Level Computer Science helps students understand the core academic principles of computer science. Your classroom learning will be transferred into creating real-world systems through the creation of an independent programming project. A large part of the subject involves developing knowledge, skills and understanding of programming concepts primarily using a high level programming language such as Python, Java or C#. At WQE we will be teaching programming using C#. A small part of the specification requires students to develop knowledge, skills and understanding of web development languages, specifically HTML, CSS and Javascript (the latter not to be confused with Java).

Activity Introduction

This activity has been created to get you started with exploring and learning Javascript. There are many online tutorials that introduce you to or develop your JavaScript programming skills.

Activity instructions

Choose one of the resources below to suit your programming level and work through the available tutorials.

New to programming?

If programming is something very new to you, or you just want a solid foundation in the basics, a great place to start is Grasshopper!

<https://grasshopper.codes/> Grasshopper was created by Google and it is a mobile app (iPhone or Android) that teaches you JavaScript through fun challenges.

Previously programmed in another language eg Python?

If you've done some programming before, perhaps in another language like Python, the w3schools tutorial is a great place to develop your skills (www.w3schools.com/js/). It has a 'try it yourself' feature which is a helpful learning aid. The website <http://javascript.info> is also an excellent resource.

Have done a fair amount of JavaScript programming before?

If you've done a fair amount of JavaScript before and feel ready to deepen your skills, we recommend Derek Banas' YouTube tutorial, ECMAScript 6 Tutorial (www.youtube.com/watch?v=Jakoi0G8IBg). This is quite advanced and fast paced, so only tackle this if you feel ready for a challenge!

Suggested Exercise

Use one or more of the resources above to prepare a side-by-side comparison of the programming structures you've learnt in Python (or other language) vs. those in JavaScript.

e.g. Variable declarations and assignments, if statements, loops, functions and user inputs / outputs.

Extension Activity

Start learning how to code in C#

Over the summer holiday start learning how to code in C# using one of the following online resources:

- Sololearn (<https://www.sololearn.com/Course/CSharp/>) – downloadable as a mobile phone app
- w3Schools (<https://www.w3schools.com/cs/default.asp>)

Codecademy (<https://www.codecademy.com/catalog/language/c-sharp>). Codecademy requires you to set up an account and has a collection of free online tutorials for a number of programming languages. Like w3schools you learn by writing code in a code editor window and see the results in an output window. Make sure you read the explanations first before trying the exercises!

Resources required

Computer or mobile phone

Good luck and happy coding!

