



Get off to a 'Flying Start' in

Computer Science - A Level

Welcome to Flying Start with North Devon College.

We hope that you are excited to join us at North Devon College. We want to help you to focus on your skills for your course with us and so below you will find questions to consider, tasks to complete and some background research to undertake before enrolment.

Please read the instructions and have a go at the activities.

If you get stuck, please see the Frequently Asked Questions (FAQs) section at the end of this document for help.

A quick hello and introduction to the course

Welcome to Computer Science A Level! Computer Science is an excellent choice if you are interested in technology, problem-solving and innovation. It complements other STEM subjects such as Mathematics, Physics and Engineering by developing logical thinking, analytical skills and computational approaches to real-world challenges.

As technology continues to transform industries and economies worldwide, studying Computer Science will help you gain future-focused knowledge that is increasingly valued by universities and employers.

Our course covers programming, algorithms and data structures, alongside the theory of how computers work. You will study topics including computer systems and architecture, data representation, databases, networking, cybersecurity, Big Data and the social, legal and ethical impacts of technology. The course also includes a substantial programming project (NEA) where you will get the opportunity to really show off your skills by designing, developing and evaluating a real-world software solution.

This course will turn curiosity into creativity and logic into lifelong skills – preparing you for some of the UK's most in-demand careers.

I look forward to meeting you all in September.

Gavin – Lecturer, Computer Science A Level

To get you started...

One of the first topics we will look at in Computer Science is data representation and number bases. All data is represented as binary digits, whether it is numbers, text, images or sound. Calculations are also made in binary. You will learn how number bases work including binary, decimal and hexadecimal and how to convert between them.

If you have studied Computer Science at GCSE, you may well have already looked at this subject. If not, don't worry, take a look at the BBC Bitesize links for each section for an overview on how to do these conversions.

Part A

Binary and hexadecimal conversions

1. Convert the following binary integer numbers to denary. [Help](#)

- a) 100
- b) 10001
- c) 100111
- d) 1010010
- e) 10000101

2. Convert the following denary numbers into binary. [Help](#)

- a) 23
- b) 48
- c) 178
- d) 244
- e) 257

3. Convert the following denary numbers to hexadecimal. [Help](#)

- a) 12
- b) 130
- c) 265
- d) 321
- e) 255

4. Convert the following hexadecimal numbers to denary. [Help](#)

- a) A3
- b) 22
- c) 2A2
- d) 4D2
- e) EE3
- f) FA2
- g) 2C1

Programming will be a huge part of your Computer Science A Level as you build up the skills you need for your NEA project. At North Devon College, the programming language that we use is Python. Again, you may already be familiar with Python at GCSE level but, don't worry if you are not.

Part B

Python course

Have a go at three (or more) of the Time2Code Python course levels. There are ten levels in total:

Level 1 to 3: Beginner

Level 4 to 6: Intermediate

Level 7 to 9: Advanced

Level 10: Bonus Turtle graphics level.

Choose which levels are most appropriate for your experience and work your way through and see if you can complete the corresponding Assessment point.

Each level comes with lots of help including video tutorials and walk through examples. You do not need to download anything, you just need a computer, an internet browser and access to the internet. Click on the link below to get started.



[Python Course - time2code](#)

For those who want a bit more...

If you love coding, there's always more ...



[Summer Coding Challenges | Mission Encodeable](#)

Frequently Asked Questions (FAQs)

Q: Will this work be marked and when is it due?

A: This work may not be formally marked but will be discussed during your first classes with us in September. Just bring along what you have completed to your first timetabled sessions.

Q: I am not sure if I have the answers right, what should I do?

A: Don't worry, just have a go at getting something down and bring it along to the lesson where we can talk it through. There is no need to get anxious about the tasks, we are not expecting you to know everything before you arrive but are interested in your ideas and what you have found easy or difficult as it helps us support you right from the beginning.

Q: Do I have to do it?



A: Flying Start is not compulsory, but many students find it useful for getting them used to thinking about subjects at the next level. Early classroom sessions will also reflect on some of the Flying Start activities.