

## Computer Science A Level Transition Work

### Task One

Before you join us in September we want you to develop a secure understanding of the following skills:

- Conversion between Positive and Negative binary numbers using Two's Complement (Covered in the transition lesson)
- Application of Binary Arithmetic i.e. Addition and Subtraction
- How to represent both positive and negative real numbers using twos compliment
- As an extension to this you can also look at how the range of possible values can be calculated

Resources:

[Isaac Computer Science](#)

### Task Two

The second area of the Course we would like you to be familiar with is Boolean Logic.

You need to be fluent in the identification, notation and truth tables for:

- AND, OR, NOT and XOR gates
- Be able to create their truth tables
- Be able to create logic diagrams using different combinations of these gates.

Resources

[Isaac Computer Science](#)

### Optional Extra

If you want to explore some higher level programming concepts you could undertake the PONG tutorials [HERE](#).

These will take you step by step through the creation of a game of PONG. You will need to install PyGame on to your system (Google How to do this) or use an online IDE that lets you use PyGame.

### Assessment

1) Sign up with an account on Isaac Computer Science using your Plymstock School account. If you do not have one, use your account from your current school

2) Join our classroom using [THIS](#) link

3) When you are ready, complete the "Game Boards". These will allow us to see how well you understand the topics.

N.B. Please complete these in good faith i.e. don't use online calculators. We would rather see where you need support than be given the impression you got 100% when that is not the case in reality.

These topics will also be part of an assessment that will take place in lesson One as a part of retrieval practice that takes place in every lesson.

## **Support**

We suggest you make a start on this work right away as you will be able to email us for support while we are in school.

If you get stuck or want further clarification on any topics you can email [srogers@plymstockschool.org.uk](mailto:srogers@plymstockschool.org.uk) and we will get back to you with some guidance.