



Year 7

Department of Computing

OVERVIEW

Our Key Stage 3 Computing curriculum has three pillars. Firstly, we wish to develop students' digital literacy so that they can use IT to extend their learning in all areas, to communicate effectively, to develop their ideas and to solve problems: furthermore, they should be able to do so safely. Secondly, we teach students the fundamentals of Computer Science; to understand how digital systems work and how they are programmed. Thirdly, we teach students the skills that are needed to be able to use application software found in the working environment such as spreadsheets and desktop publishing. These three pillars are covered across six strands. In each year, we will cover some of these strands, building on previous learning.

We hope that this curriculum offers enjoyment and opportunities beyond our day-to-day use of technology, while delivering a wide enough breadth of topics that everyone takes an interest in Computing in some form. By the time comes to make GCSE options decisions, students should be enabled to make an informed choice about whether to opt to take GCSE computer Science in Key Stage 4 and beyond.

Skills Developed

The year 7 programming units develop computational thinking, technical skills and problem-solving skills.

In our first unit (S1: Understanding Computers), students will be introduced to the different online systems that are used to access their learning both in school and at home. They will practice key skills that will enable them to access resources quickly in all subjects. They will learn the difference between cloud and local storage and how to move files between them.






In our programming strand, students will gain knowledge and understanding of what an algorithm is, how an algorithm is represented using flowcharts, why sequence matters, the difference between inputs and outputs, what a variable is and how to change the direction of a program using selection. We introduce the basics of iteration ready for year 8.

As part of our Wider world strand, students will learn about the impacts of modern screens on our brains, as well as discover the influential women of our time who are leading the way in the Computer Science Industry.

In our Cyber Security strand, we discuss a range of ways to stay safe and be kind on the Internet. Students should understand what makes a secure password and why, what constitutes cyber-bullying and where to get help from, how to identify and avoid internet scams.

In the first of our Digital Media unit, students will investigate how and why it is important for designers to consider the accessibility of their digital products. They will make and compare creating webpages using WYSIWYG and text-based software. They will also learn about Copyright and the Creative Commons License.

Topics covered

Unit	Key Concepts
 7S1 Getting Connected	<ul style="list-style-type: none">• How to access work online• How to use computers responsibly• How to use MS Teams to communicate with teachers• How to ask questions on the relative subject Team walls• Basic file management both online and on the school computers
 7S3 Basic Programming Concepts	<ul style="list-style-type: none">• Identify situations where computer control is used, the advantages and disadvantages• Know common types of sensors and actuators• Identify flowchart symbols and understand how they are used• Produce flowchart-based solutions that include sequences, decisions (selection) and loops (iteration).• Understand and use subroutines and variables
 7S4 Website Design	<ul style="list-style-type: none">• What do we need to do to ensure our designs are accessible for all?• What is the Copyright Act and the Creative Commons License? How does it affect making publications?• How do we create webpages? Compare WYSIWYG and text-based creation.
 7S5 Staying Safe and Being Kind Online	<ul style="list-style-type: none">• What makes a secure password?• What is cyber-bullying?• Where can we get help from?• How do we pledge to be kind to others online?• What is phishing and how do we identify it?
 7S6 Impacts of Technology	<ul style="list-style-type: none">• What does science teach us about the dangers of too much screen time? What are the social and medical impacts?• Who are the influential women in technology in this modern day? What areas of industry do they work in? What awards have they won? How did they get there?

How we assess your daughter's progress

Each unit has a variety of exercises that we use to track your daughter's progress throughout the unit. One of these will be used as a formal midway assessment which is added to the end of unit assessment score. Gradings are distributed across the whole year group and are based on the same ratios as the whole school reports. Due to the multi-disciplinary nature of KS3 Computer Science, it is not expected that every student will be consistent in all strands. We like to celebrate all achievements both at unit level and cohort level. The results are recorded and used when we next cover the same strand in another year to help us personalise the support needed for each unit.

How we support and develop your daughter

All lessons are accompanied by a SharePoint page which will be linked to in your daughter's subject MS Team. These are used as support and guidance in class so that your daughter is able to follow at their pace and keep track of the steps as they need. They are not a replacement for the specialist teachers that will be guiding them in the lesson, but they do act a good support resource both in class and at home.

If a student has a problem with a homework task, she should get in touch with her teacher via Teams at least 48 hours before the deadline. This gives us a chance to respond during work hours. Where the answer is not a quick fix, we will use our discretion to extend their deadline until after we can meet with them, which may be in the next lesson.

Where a student is struggling in a particular unit, or shows signs of persistent low achievement, we will also try and provide a 1:1 peer mentor from the year above. These students are volunteers who give up their lunch breaks to take their mentees through the work. For our more confident students, we encourage them to volunteer in year 8 onwards to be a peer mentor. This develops relationships between year groups and enhances their explanation skills enabling them to achieve more in their own work.

Our Year 12 and 13 A-level Computer Science students run a Coding Club once a week. Our Year 9 and 10 students run a Cyber Club for KS3 students. They have been successful in winning the NCSC CyberFirst Competition two years consecutively. Attending these clubs is a great way to be inspired by older students and to learn skills not met in class.

We encourage your daughter to take part in a variety of competitions throughout KS3 and we wish we could support more, however, staffing it is instrumental to success and it not always achievable.

How you can help your daughter

It is really important that students submit all homework, so they must be encouraged to do so. This allows teachers to identify any learners who may be having difficulty and adjust lessons accordingly. Not all homework will be formally marked. All Computer Science homework is set on Teams and students should be checking in frequently.

We are a Microsoft-based school and, as such, having a computer that can run MS Teams will give your daughter the best chance of achieving their potential. We cannot recommend purchasing a tablet as your daughter's sole computer. Where possible, we would ask you to encourage them to use a proper keyboard and mouse so that they can access the work easily in class. We try to use software that have an online version, but this isn't always possible, so students are required to access the software through the remote connection or by making use of the IT facilities in the LRC.

Students who miss lessons due to other commitments, such as sports fixtures or music lessons, are expected to discuss the lesson with a classmate and catch up prior to the next lesson. If you are signing your daughter up for other commitments, please check with them regularly to check that it is not having an impact on their academic work.

If your daughter is ill and misses a lesson, we ask that they make sure they are well enough to come to school before trying to catch up on the work missed. Once they are back, they should then discuss what they have missed with a classmate and catch up on any work missed. Their deadline will be extended to account for this.

We do ask that you support your daughter by enhancing what they are learning in class and not trying to change how we are teaching them. If we ask them to use a particular bit of software, there will be good reasons for it. If you are helping with homework, that is great! However, please allow your daughter to do the actual work herself. From experience, where a parent has been involved in the actual work either through demonstration or leading by example, the student then cannot explain what they have done which affects their long-term attainment.

We love that so many of you are role models in the computing industry – be it software development, IT systems, electrical engineering, graphic design, medical research, teaching, et al. If you are able to offer your time to record a short video that tell us about what you do and how it relates to Computer Science, we would love to compile a collection of these to really encourage the students to consider how computers will affect their future careers. We also have a poster that you can personalise for us to display on SharePoint to showcase all of your roles in industry. This is available in the Computer Science Year 7 resources which your daughter has access to.

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