



KING JAMES'S
SCHOOL
KNARESBOROUGH

CURRICULUM OVERVIEW

COMPUTING & IT

2021/22

Computers are everywhere, hardly a second goes by without a computer having an impact on our daily lives. We need an IT literate population that understand how to get the best out of technology while staying safe. With these key fundamentals in mind, we have developed our Computing & IT curriculum to ensure students at King James's have the potential to thrive in current and future society. With a strong dedicated team of teachers and support staff Computing & IT is taught to the highest levels. This begins by ensuring all students have access to computer and software which helps them develop. Students are taught in dedicated IT suites that contain modern computers and industry standard software, all geared towards students learning in the best environment possible.

All students will need to be able to use computers to succeed in modern society and our curriculum is all about preparing students to use and master technology. All students will develop key Digital Literacy skills to ensure they can engage safely and successfully with technology. From being able to safely research using the Internet, to developing presentation on complex topics. All students are introduced to how computers actually work, from basic hardware and networks, to how computer programs are developed.

As students go through the years at school, they get more choice and opportunity to specialise in key computing areas. This includes extra-curricular activities such as Lego Engineering Clubs where student learn to program robots and taking part in Cyber Security Challenges where students learn to defend computers from Cyber Attacks.

Programming has become an increasing part of the Computing curriculum, challenging students to become the next Grace Hooper or Bill Gates. Creativity in developing new programs that can solve everyday issues is a principle students learn early in the curriculum. Computers can solve problems if we harness their potential.

Choice has always been important and not every student wants to program and so we have ensured we offer a breadth of study that allows them to experience all elements of computer learning.

Key Stage 3 Curriculum: Programming using Scratch and Python, Robotics, Spreadsheets, Databases, Image Editing skills, Web design, Cyber Security, Networks, Computer Hardware, Game Development, Binary and Hexadecimal Number Systems, Logic Gates and circuits, Presentations, File Management and Typing skills are all areas that students will experience and master throughout KS3. This time is all about making the foundation for using computers in everything we do. Students are introduced to new things each year while revisiting previous skills to further develop and master use and understanding.

Once students get to **Key Stage 4** they have the options of 3 strands of Computing: Creative Design and Media, Computer Science and Information Technology. Creative iMedia course allows students to design and create multimedia projects in a vocational setting. This course allows students to thrive in the digital world of media. From planning media products, creating Digital Graphics to producing Video and Multimedia products. Students are hands on from day one in using technology to spark their imagination. The Information Technology course allows students to harness how computers are used in different business settings across society. Developing clear project management skills to allow students to create IT business solutions. Students develop their skills in using and protecting software and computer systems. Computer Science GCSE allows students to understand and develop their hardware, software, and programming skills. Students learn in detail how computers can be developed to help individuals and society. From understanding how networks work and keeping them safe, to programming complex solutions to problems.

Key Stage 5 carries on with this choice of student learning. They can further develop their Computer Science skills to a high level of mastery to ensure they understand how computers work and not just how to use them. Programming is taken to new heights with the introduction of new languages and paradigms. Use of specialist technology to enhance these skills is encouraged. Information Technology is taught at KS5 through the vocational route allowing students to get hands on with real world business use of technology. Students study the complexity of Data and Information, and how businesses use it. This includes how to keep data safe through in depth study of Cyber Security and its implication for business.

As students' progress through the Computing & IT curriculum the overriding goal is to prepare students for their next step. That could be using IT to support them in life, to using IT to develop new hardware and software solutions. All students are catered for in the curriculum, it doesn't matter what their final destination maybe, they will be supported and developed to be ready for the challenges technology can bring them.