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# Our Lady's Catholic College

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## COMPUTER SCIENCE CURRICULUM INTENT

Our Lady's Catholic College, Morecambe road, Lancaster, La12rx

***“Those who can imagine anything, can create the impossible.” — Alan Turing***

Living in a digital age, Computing and ICT are extremely relevant subject areas for all our students. Computers and devices are an integral part of our everyday lives affecting the way we live, think and act. We live in a computerised world whereby computers are involved in so many aspects of our lives such as education, travel, work, research, entertainment, communication and many, many more.

Computing and ICT will have an impact upon their lives whether is it making use of technical skills to support their learning across the school, in their future studies or in their careers. Being confidence users of technology can support and benefit the lives of our students, supporting them to develop problem-solving skills as well as enhancing their logic, ability to decompose a task and abstract key information when analysing real life solutions.

The Computing & IT Department at Our Lady's want students to understand and play an active role in the Digital World that surrounds them, not be passive consumers of technology.

In Computing we aim to ensure that students:

- Become successful learners who enjoy learning.
- Make progress and achieve by using their God given talents.
- Explore concepts in computer science, programming, IT user skills and digital literacy and e-safety.
- Develop their computational thinking skills and their independence when solving problems.
- Learn how to create a positive online presence and how to stay safe when using technology.
- Develop relevant and transferable ICT skills.

### **Curriculum Design**

The curriculum has been designed to ensure learners have sufficient knowledge to stay safe online and use computers safely in life. The curriculum also provides a focus on developing resilient learners who can recover from mistakes and effectively solve problems. The topics at KS3 give a basis of knowledge, skills and understanding to allow students to progress onto either ICT or Computer Science at KS4 and will provide exposure to those subjects so that students can make an informed decision on their GCSE choices.

The main concepts of Computing and ICT are:

- **Computer Science** involves building knowledge of how computers function at a basic level to harness their abilities, using computational thinking and knowledge of specific programming languages, to solve specific problems using technology.
- **Information technology** is about the use of computers for functional purposes, such as file management or creating digital office artefacts.

- **Digital literacy** includes the knowledge of safe digital working practices and understanding of the ethics context of the technology that we use.

In addition to ensuring we support these key concepts we also promote our curriculum by

- Designing and developing systems that solve a range of real-world problems.
- Understand key algorithms that support the development of computational thinking.
- Develop an ability to program using multiple languages.
- Make use of hardware and software components that make up computer systems.
- Undertake creative projects.
- Promote cross curricular links – including Maths, English, Art and PSHE
- Promotes the catholic ethos of the school.
- Support the important role the Computing and ICT are vital skills to develop in preparing the students for their future.

### **Implementation of our Curriculum**

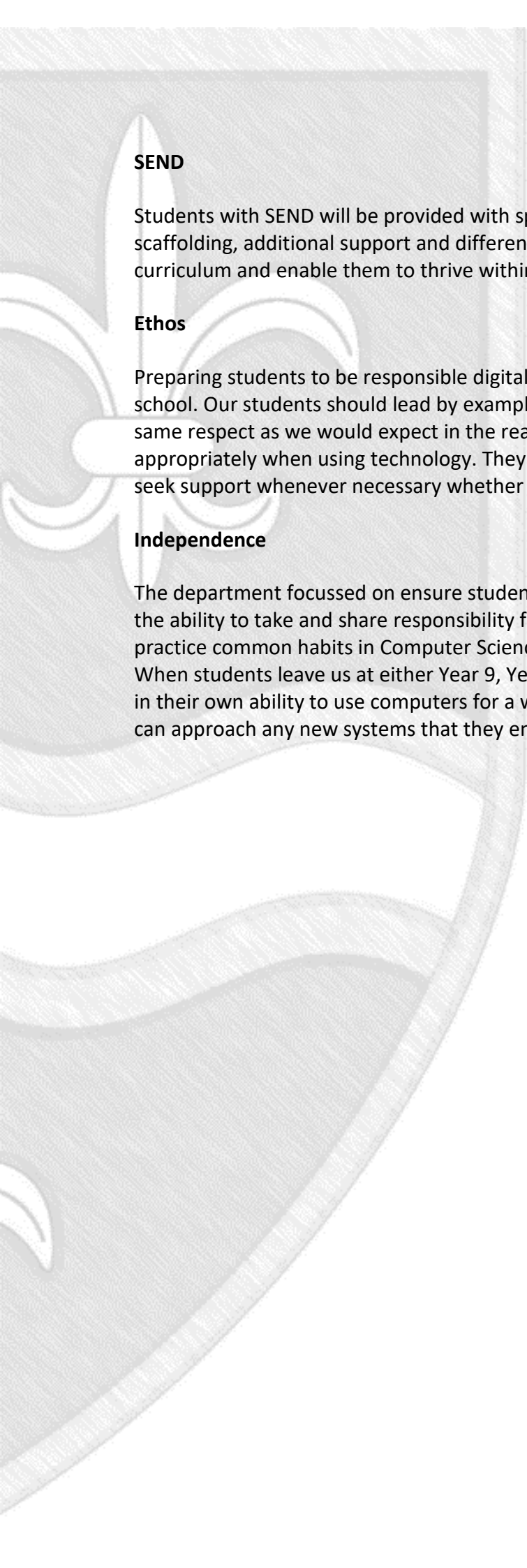
In Computing we implement this through the delivery of a high quality of education which places developing the computing concepts at the forefront of planning. Each scheme of learning is prefaced by its own intent, underpinned by a deep understanding of the computational concepts. In the schemes of learning assessment is a meaningful vehicle for learning, of learning and as learning to ensure we make a profound positive difference to all students.

### **Assessment**

Formative and summative assessments are used within the Computing and ICT Department to inform staff of students understanding and progress. The component knowledge of each topic is assessed using Multiple Inadequate Glances (MIGs) to formatively assess the understanding of the component and allow for responsive teaching before moving on. These feature regularly within lessons and are highlighted in our curricular and assessment plans. The students also complete several project-based tasks as summative assessments as well as formal summative tests to assess understanding across whole units of work.

### **Academic Aspiration**

Our curriculum is designed using a progressive curriculum model where each outcome builds from the last with a clearly defined sequence of achievement for each key stage so that students can make excellent progress. We place great focus on encouraging students to experiment without fear of failure and students are encouraged to find new ways to apply their knowledge.



## **SEND**

Students with SEND will be provided with specific support; including video tutorials, scaffolding, additional support and differentiation of activities to ensure they can access the curriculum and enable them to thrive within their Computing lessons.

## **Ethos**

Preparing students to be responsible digital users is vital and links into the ethos of the school. Our students should lead by example, treating everyone in the digital world with the same respect as we would expect in the real world. Our students are taught how to behave appropriately when using technology. They should not be bystanders and are taught how to seek support whenever necessary whether that is for themselves or others.

## **Independence**

The department focussed on ensure students develop into confident ICT users with the ability to take and share responsibility for their learning. Students will be encouraged to practice common habits in Computer Science that are required to truly master the subject. When students leave us at either Year 9, Year 11, or Year 13, they will leave with confidence in their own ability to use computers for a wide range of tasks and the knowledge that they can approach any new systems that they encounter without fear.