Computing

Introduction

At St Pius X, we aim to prepare your child to live and work in a world where technology becomes more and more present in our everyday lives. We also recognise that pupils are entitled to quality hardware and software and a structured and progressive approach to the learning of the skills needed to enable them to use it effectively and safely in school and at home. It is also vital that children are taught to safely and responsibly use technology in a world that offers people the opportunity to connect with anyone and everyone, from social media to online gaming. We recognise that the best prevention for many issues we currently see with technology/social media is through education.

We focus on 13 main areas of learning within computing to ensure that the National Curriculum objectives are achieved in a way that supports children's understanding and ability to be MASTERS of technology and not slaves to it:

- Data and computational thinking
- Networks
- Physical interactions
- Creation
- Digital searching
- Hardware
- Software
- Real world
- Communication
- Staying safe
- Digital citizenship
- Digital world
- Real world

A further breakdown of information on these areas of learning can be found on the school website in the Computing curriculum section.

The following pages will give you a more in depth look at what your child is being taught in each Key Stage.

Early Years Foundation Stage (EYFS)

It is important in the foundation stage to give children a broad, play-based experience of computing in a range of contexts, including outdoor play. Computing is not just about computers. Early years learning environments should feature computing scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through early technology experiences which include push button activities, remote control devices, musical keyboards, televisions, cash registers, microwave ovens, tills, scanners and interactive books, as well as computers, tablets and phones. Recording devices can support children to develop their communication skills.

Key Stage 1

In the curriculum, computing is seen to be a foundation subject, vital in helping children understand the digital world around them. Computational thinking is more about teaching children problem-solving than coding languages, and the intellectual skills they'll gain will be useful for whatever they do in life.

By the end of Key Stage 1, pupils should be taught to:

- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.

- Write and test simple programs.

- Use logical reasoning to predict and computing the behaviour of simple programs.

- Organise, store, manipulate and retrieve data in a range of digital formats.

- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

Key Stage 2

In Key Stage 2, children will continue to build their skills and extend their mastery of computers, as both user and creator. The computing curriculum aims to make children computationally aware, teaching them concepts (how to predict and analyse results, how to break a problem down into parts, how to spot and use similarities and how to evaluate) and approaches to help them problem-solve.

By the end of Key Stage 2, pupils should be taught to:

- Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs.

- Use logical reasoning to explain how a simple algorithm works and to detect and correct errors in algorithms and programs.

- Understand computer networks including the Internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration.

- Describe how Internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.

- Select, use and combine a variety of software (including Internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.