St. Patrick's Catholic Voluntary Academy
Intent, Implementation and Impact Statement – Computing

Intent:

At St Patrick's Catholic Voluntary Academy, we aim to provide a high-quality Computing education. Computing fosters a way of thinking called **computational thinking** which is a powerful way to solve problems. It requires a growth mindset attitude and skills of evaluation, problem solving and enquiry. We aim to equip all pupils to use computational thinking and creativity to inquisitively, influencing the world around them positively, becoming digitally literate. Our children will almost certainly be faced with some form of computing in the world around them and will require the necessary skills and understanding to embrace the technology that surrounds them as well as being effective, responsible and vigilant users throughout their lives. We believe that children should be able to responsibly use and express themselves, developing their ideas through information and communication technology as active participants in a digital world. Safety is paramount and we ensure that all children are aware of the potential dangers when using the internet and are taught how to minimise risk, as well as following safety procedures.

We will ensure equal access to learning for all pupils, with high expectations for every pupil and appropriate levels of challenge and support so that all children experience, enjoy and make progress. Our Computing Curriculum places an emphasis on 'tinkering,' where exploration is encouraged through trial and improvement. This fosters curiosity and creativity within our children and is vital to learning at greater depth. Computing has links with mathematics, science and design and technology, and provides insights into both natural and artificial systems. The core of computing is computing science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. This enables children to aspire and flourish not only in computing but in many arenas with accomplished transferrable skills.

Our vision is to equip children with a solid foundation of tools and experiences in the use of computational thinking to independently carry these forwards to support them through secondary education and beyond - to make sense of and take their place as active participants in an ever-increasing digital world and give them choices in future such as an industry full of opportunities.

Through confident and well-designed teaching of computing, utilising the opportunities that computing provides, we will encourage children to become ambitious, eager and independent in pursuit of skill development and in the application of computational thinking to approach problems. Faced with problems, children require, hope, resilience, discipline and endurance, which are also real-life universal skills, in order to persevere. All these abilities, in conjunction with instruction in living well together through E-Safety tuition, empower children to achieve what is

necessary to become confident, compassionate, and digitally literate members of their modern community.

Implementation:

Our staff have high expectations of all children, irrespective of ability, and encourage them to be successful and achieve their full potential in every lesson.

The knowledge and use of computers and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill for the future. At St Patrick's Catholic Voluntary Academy, we recognise that pupils are entitled to and will provide a rich and diverse computing education which addresses the National Curriculum objectives with a coherently planned and structured, progressive approach to understanding concepts and developing talents within computer science and the acquisition of real-world I.T. skills.

Our bespoke, two-year rolling cycle, scheme of work for Computing is adapted from the 'Teach Computing' and the 'Sheffield Scheme of Work' Curriculum and covers all aspects of the National Curriculum. These schemes were chosen as they have been created by subject experts and based on the latest pedagogical research. This provides an innovative progression framework where computing content (concepts, knowledge, skills and objectives) has been organised into interconnected networks called learning graphs. It offers a comprehensive yet balanced approach in addressing safety and security concerns, including ethics and behaviour issues, as well as digital literacy skills.

The curriculum aims to equip young people with the knowledge, skills and understanding they need to thrive in the digital world of today and for tomorrow. The curriculum can be broken down into 5 strands: Key skills, Communicating / Multimedia, Data Handling, Programming / Computational thinking and Online safety / Digital literacy with the aims of our curriculum reflecting these. Through providing our children with a variety of high-quality hardware, software and unplugged resources, we will equip them with the necessary skills, strategies and knowledge to use technology imaginatively, creatively and efficiently.

The Computer curriculum is delivered once a week during a timetabled slot and reinforced through the use of ICT within other subjects in the curriculum. Lessons are inclusive of all, child-centred and media-rich, which emphasize skill building, critical thinking, ethical discussion, media creation, and decision making. The opportunity for all learners to fail is provided, so that all children realise 'first attempts' in learning, teaching them the importance of debugging and strategies for solving problems.

We benefit from having two sets of iPads for use in Classrooms as required and a Computing Suite with laptops in, which is timetabled. This allows us to provide a clear and consistent routine for Computing lessons which enable all children to succeed. In each lesson, there is always a Stretch and Challenge opportunity, as well as a Support and Scaffold opportunity, as well as adaptive, quality first teaching and resources including visual supports.

We use SeeSaw as a home learning platform to allow children to share and continue their learning at home. Supporting those disadvantaged pupils with the provision of a laptop when needed.

At St Patrick's Catholic Voluntary Academy, we encourage parents to be involved by encouraging the use of IT and computing skills at home for home-learning tasks (including Mathletics, TTRockStars and Spelling Shed) and use of the school website, which includes information around the curriculum, policies and agreements.

Parents will be made aware of and kept up to date with issues surrounding E-Safety and encouraged to promote this at home through our weekly newsletter, Wake Up Wednesdays, school website and Class Dojo. We ensure that Parents and staff know who to contact at school if they have concerns and reporting is carried out in accordance with the school's reporting procedure. Parents, children and staff have a copy of the Acceptable Use agreement which is signed.

E-Safety and Digital Citizenship

A key part of implementing our computing curriculum was to ensure that safety of our pupils is paramount. We take online safety very seriously and we aim to give children the necessary skills to keep themselves safe online. Children have a right to enjoy childhood online, to access safe online spaces and to benefit from all the opportunities that a connected world can bring them, appropriate to their age and stage.

Within each year group topics include:

- **Key Skills:** In which children are taught how to access content on digital devices. Recognise digital devices, what the components of a computer are and how they are used. Children are shown how to share content, save work, open files, use file names and organise using folders. Children are expected to copy, paste and cut text and images using keyboard shortcuts and understand operating systems.

- **Multimedia:** Where children are taught how to select media for purpose, edit and change content, present ideas by combining media, edit and improve media content and how choices need to relate to the audience and purpose of a project.

- **Data handling:** In which children sort objects into categories, use simple software for simple charts, create branching data bases and recognise errors within existing data bases. They also evaluate databases, learn the difference between data and information and collect data around a theme. Children understand the difference between physical, wireless and mobile networks and use simple formulae to make databases.

- **Programming:** Children learn how to repeat an action to trigger an outcome, record the success or failure of an action, follow instructions to control devices and that we control computers. They will experience simple programmes for outcomes, write algorithms and identify and express patterns. They will learn how the order of

instructions links to the outcomes success and evaluate the success of algorithms. Children will remix or change existing programmes, use infinite loops in a programme, recognise variables in programmes, create programmes with repeating loops and combine variables with relational operations.

- **Online safety:** Children will learn online content could be inappropriate, information can be public or private, personal information and the need to keep it private. Children discover why we have passwords and their significance, we need to be kind and thoughtful when online, people lie online and not all information online is reliable. As well as learning why, we have copyright and ratings on games, TV, film, the benefits and risks of apps and the laws around the purchase, production, sending and storage of images and games. Children will also be sign posted to ways to report any concerns they may have when online.

Impact:

By the time our children leave St Patrick's Catholic Voluntary Academy, they will have experienced an enjoyable Computing curriculum, in which they have met and exceeded the National Curriculum Aims, to ensure all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation *(communicating, key skills and data handling)*.
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems *(computational thinking and Key skills)*.
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems *(computational thinking, communicating, programming and digital literacy)*.
- are responsible, competent, confident and creative users of information and communication technology. *(digital literacy and online safety)*.

Children will have developed confidence using a wide range of hardware and software. They will value online safety and respect others when communicating online. They will ask the WHY behind their learning and not just the HOW. Our learners will discuss, reflect and appreciate the impact computing has on their learning, development and well-being. Children will be supported to find the right balance with technology, which is key to an effective education and a healthy life-style. We feel the way we implement computing, coupled with our PSHE curriculum, impacts upon our children by helping them realise the need for the right balance and one they can continue to build on in their next stage of education and beyond.

We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils showcase, share, celebrate and publish their work will best show the impact of our curriculum. Evidence of our Computing curriculum's impact can also be seen through reviewing children's knowledge and skills digitally through tools like Seesaw and observing learning regularly. Progress of our

computing curriculum is demonstrated through clearly identified outcomes and end points.

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