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Computing Policy

2022-2023

Ratification Table:

Approved by:	R James	**Date:** 5.12.22
Last reviewed on:	02.01.23	
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Computing Curriculum Intent

Rationale

At St. Nicholas of Tolentine, we recognise that pupils are living in a rapidly changing world, in which ICT is playing an ever-increasing role. As an integral part of this curriculum, pupils at we use creativity and imagination in the acquisition of skills and knowledge required by the computing curriculum, considering pupils' own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on other disciplines such as music, science, engineering, DT and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present use of technology, they develop a critical understanding of its impact on daily life and the wider world.

Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world. Our curriculum has been designed to incorporate uses of technology such as Google Education Suite, Google Docs, Slides, Sheets, a range of iPad apps and educational software

Aims

At St Nicholas of Tolentine, in age and stage-appropriate ways, we aim to ensure that all pupils:

- experience a computing curriculum which is meaningful, motivating and memorable
- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to participate fully in the technological world in which they live
- are increasingly able to participate fully in a digital world, understanding the positive aspects of the online world in which they live whilst being aware of the negative impact and how to deal with issues that may arise
- are digitally literate and aware of Online Safety, actively engaging in behaviours that protect themselves and others when using a range of digital devices.

For Parents

Parents are encouraged to support the implementation of computing where possible by encouraging use of computing skills at home through activities on the school website. They are made aware of e-safety and encouraged to promote this at home by;

- Description of online safety on school website
- List of resources to help with online safety at home
- Sharing information about latest trends of concerns
- Monitoring of incidents outside of school

Implementation:

Teaching and Learning style

Pupils are supported in the acquisition of knowledge, through the use of key concepts, terms, and vocabulary, providing opportunities to build a shared and consistent understanding. Glossaries, concept maps, and displays, along with regular recall and revision, can support this approach. Collaboration is encouraged, specifically using pair programming and peer instruction, and also structured group tasks. Working together stimulates classroom dialogue, articulation of concepts, and development of shared understanding. Pupils use physical computing and making activities that offer tactile and sensory experiences to enhance learning. Combining electronics and programming with arts and crafts (especially through exploratory projects) provides pupils with a creative, engaging context to explore and apply computing concepts. Teachers teach new concepts by first unpacking complex terms and ideas, exploring these ideas in unplugged and familiar contexts, then repacking this new understanding into the original concept. This approach (semantic waves) can help pupils develop a secure understanding of complex concepts. New skills are modelled - everything from debugging code to binary number conversions — using techniques such as worked examples and live coding. Modelling is particularly beneficial to novices, providing scaffolding that can be gradually taken away.

Teachers use variety of activities to consolidate knowledge and understanding of the function and structure of programs, including debugging, tracing, and Parson's Problems. Regular comprehension activities will help secure understanding and build connections with new knowledge. Teachers use project-based learning activities to provide pupils with the opportunity to apply and consolidate their knowledge and understanding. Design is an important, often overlooked aspect of computing. Pupils can consider how to develop an artefact for a particular user or function, and evaluate it against a set of criteria. Teachers provide activities with different levels of direction, scaffolding, and support that promote learning, ranging from highly structured to more exploratory tasks. Adapting your instruction to suit different objectives will help keep all pupils engaged and encourage greater independence.

Teachers bring abstract concepts to life with real world, contextual examples and a focus on interdependencies with other curriculum subjects. This can be achieved through the use of unplugged activities, proposing analogies, storytelling around concepts, and finding examples of the concepts in pupils' lives.

Planning

Planning is based upon the TEACH Computing curriculum, providing a clear progression through the school based upon the national curriculum. Each lesson builds upon the last and learning is moved forward through formative and summative assessment opportunities. Each lesson has a clear learning objective and success criteria which are revisited through classroom assessment. Each unit's progression is clearly mapped, as is the whole school progression.

All planning outlines the knowledge, skills and understanding expected for each objective covered will take place and how to make the learning memorable, meaningful and motivating. This is consistent across KS1 and KS2 with EYFS incorporating the same elements but in a slightly different format. Children in EYFS are given a wide variety of opportunities to develop their knowledge and skills in adult-led and continuous provision. There is coherent progression to planning using the subject content outlined by the National Curriculum and

expanded in more detail by the NCCE units. Vocabulary specific to computing is planned into units so as to be taught and used by children independently and with understanding.

Marking

The progression within a unit is evident in our floor books. The work the children produce provides evidence of creative, technical and practical expertise to perform everyday tasks confidently and to participate successfully in an increasingly technological world. It also shows a growing repertoire of knowledge, understanding and skills in order for children to value and enjoy the curriculum we deliver.

The Foundation Stage

Foundation children explore technology through purpose made provocations in class to help them to understand how things work. Resources are located in their classroom.

Personal, social and health education (PSHE) and citizenship

Children regularly use different websites and apps from their parents, and it can be hard to keep up in this ever-changing digital world. But the things that help keep children safe online are often similar to the things that keep them safe offline. It is important to teach children e-safety, digital literacy and citizenship as part of our computing curriculum. The profile of this is raised through our school e- safety team and teaching alongside the TEACH computing curriculum.

Spiritual, moral, social and cultural development

The teaching of computing offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons. Groupings allow children to work together and give them the chance to discuss their ideas and feelings about their own work and the work of others. Their work in general helps them to develop a respect for the abilities of other children and encourages them to collaborate and co-operate across a range of activities and experiences. The children learn to respect and work with each other and with adults, thus developing a better understanding. Children are given opportunities to share their work with their peers and be proud of theirs, and other's learning.

Equality of Opportunity

All pupils should have access to the whole computing curriculum and resources, regardless of race or gender. All teachers are aware of accessibility options on digital devices.

Resources

There is a wide range of hardware and software within the school which allows the TEACH computing curriculum to be taught. The resources are timetabled and shared equally between each year group.

These resources are monitored by computing lead.

Assessment for learning

Teachers use regular assessment opportunities through each lesson in order to assess and build upon learning. Each lesson ends with a plenary and thumbs up, middle or down assessment based upon the learning objective and success criteria. Teachers encouraged to record assessment for learning in floor book. Teachers use formative questioning to uncover misconceptions and adapt teaching to address them as they occur. Awareness of common misconceptions alongside discussion, concept mapping, peer instruction, or simple quizzes can help identify areas of confusion.

Monitoring and evaluation

Outcomes are assessed in relation to the National Curriculum descriptors during and at the end of units, with summative assessment being completed at the end of each term. The subject leader analyses this data and children's independent work is monitored by their teacher.

Summative assessments are completed at the end of each unit and collated by the subject lead for recording, monitoring and evaluation. Gaps in knowledge are addressed by class teachers and the subject lead, based upon this data.

Impact:

Learning in computing will be enjoyed across the school. Teachers will have high expectations and quality evidence will be presented in a variety of forms. Children will use digital and technological vocabulary accurately, alongside a progression in their technical skills. They will be confident using a range of hardware and software and will produce high-quality purposeful products. Children will see the digital world as part of their world, extending beyond school, and understand that they have choices to make. They will be confident and respectful digital citizens going on to lead happy and healthy digital lives.