St Joseph's Catholic Primary School
Exmouth

Plymouth CAST

Computing Policy
September 2021

Contents

1. Curriculum Statement

Intent

In line with the 2014 National Curriculum for Computing, our aim is to provide a high-quality computing education which equips children to use computational thinking and creativity to understand and change the world. The curriculum will teach children key knowledge about how computers and computer systems work, and how they are designed and programmed. Learners will have the opportunity to gain an understanding of computational systems of all kinds, whether or not they include computers.

By the time they leave St Joseph's, children will have gained key knowledge and skills in the three main areas of the computing curriculum: computer science (programming and understanding how digital systems work), information technology (using computer systems to store, retrieve and send information) and digital literacy (evaluating digital content and using technology safely and respectfully). The objectives within each strand support the development of learning across the key stages, ensuring a solid grounding for future learning and beyond.

Implementation

At St Joseph's, computing is timetabled following the computing curriculum map which supports teachers with their medium and long-term planning. Technology is regularly used to support and develop understanding in other areas of the curriculum. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics.
Teachers use the 'Teach Computing Curriculum' scheme, published by National Centre for Computing Education, to access planning and resources for computing lessons. Knowledge and skills are mapped across each year group to ensure systematic progression. We have six Chromebooks in every classroom and additional Chromebooks that can be booked so that all children have access to their own device. We have six Ipads that can be used for computing across the school. All year groups have the opportunity to use a range of devices and programs for many purposes across the wider curriculum, as well as in discrete computing lessons.

The implementation of the curriculum also ensures a balanced coverage of computer science, information technology and digital literacy. The children will have experiences of all three strands in each year group, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is built upon. For example, children in Key Stage 1 learn what algorithms are, which leads them to the design stage of programming in Key Stage 2, where they design, write and debug programs, explaining the thinking behind their algorithms.

Impact

Our approach to the curriculum results in a fun, engaging, and high-quality computing education. The quality of children's learning is evident in computing books, where pupils can share and evaluate their own work, as well as that of their peers. Evidence such as this is used to feed into teachers' future planning, and as a topic-based approach continues to be developed, teachers are able to revisit misconceptions and knowledge gaps in computing when teaching other curriculum areas. This supports varied paces of learning and ensures all pupils make good progress.

Much of the subject-specific knowledge developed in our computing lessons equip pupils with experiences which will benefit them in secondary school, further education and future workplaces. From research methods, use of presentation and creative tools and critical thinking, computing at St Joseph's gives children the building blocks that enable them to pursue a wide range of interests and vocations in the next stage of their lives.

2. Teaching and Learning

Even though whole school co-ordination and support is essential to the development of computing capability, it remains the responsibility of each teacher to deliver appropriate computing activities and assist the co-ordinator in the monitoring and recording of pupil progress in computing.

Teachers' own use of computing in lessons is also an essential part of preparing engaging, fast moving, motivating lessons for pupils. The computing co-ordinator will keep teachers up to date on the latest uses of computing as a teaching tool; individual teachers then need to implement these tools into their lessons wherever possible.

Teachers are expected to follow the 'Teach Computing Curriculum' scheme, however they are encouraged to further adapt them to the needs of the class.

Assessment

Formative Assessment

Self-assessment
In line with the National Curriculum, children are taught to debug their own programs, use logical reasoning to explain simple algorithms (including their own), and detect and correct errors in both algorithms and programs.

Peer-assessment
The ideas of self-assessment suggested above translate naturally into peer assessment, with pupils working with a partner to review, and help correct, algorithms and programs, or provide critical, constructive feedback on digital content.

Open questioning
Pupils' knowledge of the concepts covered by the programme of study may not be immediately apparent in the work they produce. The use of open questioning is one way in which you can both assess and develop their grasp of concepts.

Discussion with peers
Encouraging pupils to use similar open questions can be effective in allowing them to focus on what they've learned, rather than only on what they've done. Moving some of this discussion online, and perhaps involving pupils in other schools or countries, would be one powerful way to illustrate the opportunities offered by computer networks for communication and collaboration.

Target setting
Project management skills such as planning, organising, motivating others and allocating resources, are of great importance in real-world projects, and they can be widely applied in education.

Summative Assessment

The key knowledge and skills in as stated on the school's progression computing progression map is informed by the following scheme document -

NB; the numbers down the left hand side are not 'levels' as such, but are merely guides as to how the child is progressing.

	CS	IT	DL
1	Understand what algorithms are Create simple programs	Use technology purposefully to create digital content Use technology purposefully to store digital content Use technology purposefully to retrieve digital content	Use technology safely Keep personal information private Recognise common uses of information technology beyond school
2	Understand that algorithms are implemented as programs on digital devices Understand that programs execute by following precise and unambiguous instructions Debug simple programs Use logical reasoning to predict the behaviour of simple programs	Use technology purposefully to organise digital content Use technology purposefully to manipulate digital content	Use technology respectfully Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies
3	Write programs that accomplish specific goals Use sequence in programs Work with various forms of input Work with various forms of output	Use search technologies effectively Use a variety of software to accomplish given goals Collect information Design and create content Present information	Use technology responsibly Identify a range of ways to report concerns about contact
4	Design programs that accomplish specific goals Design and create programs Debug programs that accomplish specific goals Use repetition in programs Control or simulate physical systems Use logical reasoning to detect and correct errors in programs Understand how computer networks can provide multiple services, such as the World Wide Web Appreciate how search results are selected	Select a variety of software to accomplish given goals Select, use and combine internet services Analyse information Evaluate information Collect data Present data	Understand the opportunities computer networks offer for communication Identify a range of ways to report concerns about content Recognise acceptable/unacceptable behaviour
5	Solve problems by decomposing them into smaller parts Use selection in programs Work with variables Use logical reasoning to explain how some simple algorithms work Use logical reasoning to detect and correct errors in algorithms Understand computer networks, including the internet Appreciate how search results are ranked	Combine a variety of software to accomplish given goals Select, use and combine software on a range of digital devices Analyse data Evaluate data Design and create systems	Understand the opportunities computer networks offer for collaboration Be discerning in evaluating digital content

Existing knowledge is checked at the beginning of each topic, as part of the KWL strategy (What I know, What I would like to Know and What I have Learned). This ensures that teaching is informed by the children's starting points and that it takes account of pupil voice, incorporating children's interests. Computing knowledge is assessed regularly recapped through 5 in 5 questioning. At the end of each topic, key knowledge is reviewed by

the children and rigorously checked by the teacher and consolidated as necessary. A recordof this process is kept in the children's computing books.

3. Planning and Resources

Planning

Teach Computing Curriculum' scheme

The Teach Computing Curriculum is structured in units. For these units to be coherent, the lessons within a unit must be taught in order. However, across a year group, the units themselves do not need to be taught in order, with the exception of 'Programming' units, where concepts and skills rely on prior learning and experiences.

The school uses 'Teach Computing Curriculum' computing scheme as a starting point to deliver the new programme of study. It covers the programme of study for computing, including programming and computational thinking. This scheme supports clear progression of skills from Years 1 to 6.

Resources

iPads

Each teacher has an iPad for assessment purposes. We have two class set of iPads for use within the classroom to support the programme of study.

Classroom Chromebooks

There is at least six chromebooks in each classroom and additional chromebooks in a trolley in the corridor.

Printers and Photocopiers

Each floor now has at least one colour photocopier which is networked to each computer.

Interactive Whiteboards

Each classroom has an interactive board.

Other Resources to support the curriculum

- Beebots
- Digital Cameras
- Headphones
- Google Classroom

4. Organisation

Children study computing in blocks, and the content of each block is outlined in the school's Computing Knowledge and Skills Progression Map. This approach enables a project-based approach to computing and supports a greater depth of understanding throughout the focussed teaching block.

5. EYFS

Although technology has been removed from the 'Understanding of the World' Early Years Foundation stage curriculum, technology will still be taught in the EYFS at St Joseph's. We believe children need to be taught technology in order to be ready to excel in Year 1 Computing. As well as this, we believe technology can improve subject skills in the seven areas of learning in EYFS. Skills:

- Exploring different mechanisms (jack in the box) Nursery
- Recognising technology in various locations
- Exploring and playing with a range different technology e.g Beebots, Ipads and interactive whiteboards
- Exploring old technology such as typewriters and mechanical toys
- Selecting technology for a particular purpose
- Recognise how technology is used in everyday life (Microwave, alarm clock, traffic light)

6. KS1 and KS2

At St Joseph's, children in both key stages are taught about the benefits of the knowledge and skills they are learning, as well as their application in real life contexts and professions. As well as the emphasis on E-safety in lessons, the school also celebrates the annual national 'Safer Internet Day' in line with national guidance on safer internetuse at home.

7. Equal Opportunities

St Joseph's Primary School will ensure that all children are provided with the same learning opportunities regardless of social class, gender, culture, race, disability or learning difficulties. As a result we hope to enable all children to develop positive attitudes towards others. All pupils have equal access to computing and all staff members follow the equal opportunities policy. Resources for SEN children and children who are working at greater depth are made available to support and challenge appropriately.

8. Inclusion

All children have the right to access the computing curriculum and teachers make adapt their teaching and learning tasks and activities to ensure appropriate level of challenge for all groups and individuals. Computing forms part of the national curriculum to provide a broad and balanced education for all children. Through the teaching of computing we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Where appropriate,

computing can be used to support SEN children on a one to one basis, where children receive additional support. Additionally, as part of our approach to teaching and learning, we will use adapted resources wherever possible such as visual timetables, different coloured backgrounds and screen printouts.

9. Role of the Subject Leader

The computing coordinator will assess and address staff training needs as part of the annual development plan process or in response to individual needs and requests throughout the year.
Individual teachers should attempt to continually develop their own skills and knowledge, identify their own needs and notify the coordinator. Teachers will be encouraged to use ICT and computing to produce plans, reports, communications and teaching resources.
Individual tutorials are available for the different software needed to deliver the new curriculum. These are differentiated for basic skills, intermediate skills and advanced skills.
The co-ordinator will provide on-going staff training to ensure teachers are confident in delivering the new curriculum, in a range of contexts. This will have an emphasis on ensuring appropriate progression in knowledge and skills in line with the computing knowledge and skills progression map.

The computing coordinator will support staff to overcome technical issues with computing technology at the school. They will also liaise and access support from the technical support, cosmic, as and when required.

The subject leader will oversee and maintain resources to support the computing curriculum. They will enrich the computing curriculum by providing access to specialist expertise and resources. The subject leader will also ensure high standards across the computing curriculum through effective monitoring, modelling of lessons, and support with planning, as appropriate.