NOVEMBER 2021

Computing

1.2

POLICY

Swansfield Park
Primary School

The National Curriculum in England states that:

"A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer 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. 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."

Intent

At Swansfield Park Primary School, our intention is to challenge and inspire children so that they become more than just passive users of technology; instead, we aim to equip them with an active understanding of the digital world around them, how they can engage with, program and control it, and, most importantly of all, how to use it safely.

Through promoting their use of computational thinking, we also aspire to help children develop a range of important skills and attitudes which are valuable throughout their school life and beyond, such as perseverance, problem solving, imagination, collaboration and pattern recognition.

Not all children will become computer programmers, but they will all grow up in a society increasingly rich in embedded digital technologies. Therefore, it is important that through our teaching, children at Swansfield Park acquire an understanding of these technologies and how they work, and the skills and attributes developed through learning about them.

Our computing curriculum is planned as a series of sequential learning steps and our topic-based approach enables these objectives to be taught in a creative, engaging and progressive manner, with regular acquisition and application of computing skills in other subject areas.

Aims:

In line with the aims of the National Curriculum for Computing, at Swansfield Park Primary School we aim to ensure that we:

- Enable children to develop an understanding of, and the ability to apply, the fundamental principles and concepts of computer science.
- Promote children's ability to analyse problems in computational terms, allowing them to have repeated practical experience of writing computer programs in order to solve such problems.
- Allow children to reason and make connections through opportunities to discuss their thinking and understanding.
- Promote children's curiosity and allow them to make mistakes, learning from first-hand experiences both inside and outside of the classroom.
- Encourage our children to evaluate and apply technology analytically to solve problems.
- Support our children as they become responsible, competent, confident and creative users of information and communication technology.
- Provide our children with opportunities to demonstrate 'mastery' through well planned, imaginative and stimulating activities.

Planning:

At Swansfield Park Primary School, we believe that children learn best when learning activities are well planned, stimulating and challenging, ensuring progress in the long, medium and short term.

Planning is undertaken on three levels:

Long-term planning:

Long-term planning is based on Teaching Computing in the Primary School (Northumberland ICT and E-Learning Team) and the Subject Progression Grid for Computing (Swansfield Park Primary School). These provide guidance for EYFS to Year 6 on objectives, expectations, activities and resources, as well as showing previous and next steps for learning. Teachers are encouraged to use professional discretion when deciding how long is needed to be spent on particular objectives whilst ensuring all objectives are covered by the end of the academic year. Long-term plans are used to inform medium-term planning.

Medium-term planning:

Medium-term planning is carried out half-termly. Teachers work in key-stage teams to identify and select objectives, using the Teaching Computing in the Primary School pack as guidance. In key-stage teams, teachers are responsible for generating medium-term planning overviews using the school's pro forma and ensuring that these are made available on the school website.

Short-term planning:

Short-term planning is carried out on a weekly basis. Individual teachers are responsible for the planning of thoughtful, stimulating weekly lessons for their class. The school does not have a set pro forma for short-term planning, but it is expected that staff will detail the intended learning for each lesson, the teaching activities to be used and the learning outcomes.

Planning across the curriculum

At Swansfield Park Primary School, we believe that the elements of the computing curriculum thrive when applied in a relevant context, which may often be cross curricular. It is important that our children are aware of the potential of technology to create, store, present and manipulate digital content, as well as control virtual and physical systems. By approaching the planning process in a cross-curricular manner, teachers are routinely identifying opportunities for our children to realise this potential and develop their skills.

Teaching and Learning Strategies:

At Swansfield Park Primary School, we use a variety of age-appropriate teaching strategies to cater for the varied learning styles of our children.

In the Early Years, we recognise that creativity and play contribute significantly to children's thinking and understanding. Children are made aware of the wide range of devices in the home, school and wider world through free play and role play, as well as adult-led activities. These activities are based on pupils' interests and current themes. Children are encouraged to interact with age-appropriate software, control simple devices and predict outcomes.

In Key Stage 1 and 2, our aim is to teach Computer Science and Information Technology as inter-related elements which contribute to the overall goal of Digital Literacy. Depending on the objectives being covered, Computing may be taught as a standalone lesson or alongside other curriculum areas, and may involve whole-class, collaborative or individual activities. Where possible, we use teaching assistants to provide support to individuals and/or to groups of children, including more able children who are challenged to deepen their thinking and make connections to other computing concepts and curriculum areas, as well as those children identified as having SEND and requiring additional guidance.

We have been working to adopt a mastery approach to teaching and learning at Swansfield Park Primary School.

The principles and features that characterise our mastery approach with relation to Computing are:

- The large majority of pupils progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention. The questioning and scaffolding individual pupils receive in class as they work through problems will differ and pupils who grasp concepts rapidly are challenged through more demanding problems which deepen their knowledge further.
- A language rich environment is central to the teaching and learning process. Precise computational terminology is modelled in context by staff and then children are encouraged to use this when giving their reasons and explanations, whether this be with their talk partner or to their class as a whole.

- Practise, making mistakes and consolidation play a central role to learning. Carefully designed variation within this builds a deep understanding of underlying concepts and the ability to apply them.
- Teachers use precise questioning in class to test and promote understanding.

At Swansfield Park Primary School, we believe that the use of the outdoor environment is important in supporting teaching and learning. To this end, portable devices, such as iPads and data-logging equipment, allow staff to embed the use of technology beyond the classroom.

Assessment:

Assessment is regarded as an integral part of the teaching and learning process at Swansfield Park Primary School. Computing is assessed with the aid of progress sheets which are available for each stage of the curriculum. Assessment is primarily formative due to the nature of activities and the learning process in Computing, but may also take the form of a short summative assessment if the class teacher deems it appropriate.

At Swansfield Park Primary School, the key sources of assessment in Computing are:

- Digital portfolios in Early Years (School360)
- Informal annotations on planning
- Discussions with and observations of individual or groups of children
- Photographs or videos showing children's work process or outcomes
- Peer- and self-assessments
- Work stored digitally (child's server folder, Scratch, Google Classroom, School360)
- Commentary or feedback provided digitally (Google Classroom)
- Swansfield Park Computing Progression Grids (Stage 0 – 6)

Marking and Feedback:

A large proportion of feedback provided to children in Computing is verbal, as part of the ongoing process of creating, manipulating, reasoning, programming or debugging. This discussion, feedback and questioning is vital so that children are able to review their work continuously, making changes and improvements as necessary.

In addition to verbal feedback, children may receive feedback digitally. For example, notes to individual children may be added to work produced in Google Drive, or feedback may be given to groups of children via Google Classroom. This allows children to participate in the marking process through responding to teacher's feedback, whether at school or at home.

Children are also encouraged to actively participate in the marking process through self- and peer-assessment. This may be verbal, written or provided digitally, for example via SeeSaw or Google Drive.

When work is cross-curricular, written feedback may be given in books from other subject areas. Teachers are responsible for ensuring that they record where evidence can be found that relates to the Computing curriculum.

Resources:

The school has a central Learning Hub with 18 thin-client computers. Each class is allocated a weekly session in the Hub and can book additional sessions via Google Calendar. Staff and children have individual login details and are provided with a folder on the school server to store their work.

The school also has a class set of Chromebooks which are allocated to Key Stages on particular days. These are stored in the Learning Hub.

In order to facilitate our blended learning approach, all children have access to a virtual learning environment (School360) which they can access both at school and home. The interface for Early Years is simplified, with children guided to a selection of resources chosen by their class teacher. Key Stage 1 and 2 children have access to a wider range of resources, including Google Drive and Classroom.

Programmable robots and devices, such as Roamer, Ozobot, BeeBots and Lego WeDo, are available. They are stored in the Learning Hub.

MaKey MaKeys, which allow users to connect everyday objects to computer programs, are available in the Learning Hub.

Raspberry Pis are available for teaching about hardware and coding. These come with a small screen and keyboard, and are stored in the Learning Hub.

Each class has an iPad and there is also a set of iPads available which have a range of age-appropriate apps installed. Resources to support the use of iPads, such as a green screen, are available in the Learning Hub.

In addition, each classroom is equipped with a PC connected to a projector

and interactive whiteboard, or an interactive screen. Apple TV is available to allow mirroring of iPads.

Other resources to support teaching and learning can be found in the Computing cupboard.

Resources are audited, checked and updated annually. Areas of need are monitored and equipment purchased in line with needs using the schools subject bidding process.

Continuing Professional Development:

All staff are encouraged to develop, assess and improve their teaching of Computing. Where a member of staff feels a need for particular INSET, discussions should take place with their line manager as part of their Performance Management.

At Swansfield Park Primary School, we encourage staff to attend school-based INSET as well as external training courses advertised through both the online E-Courier and Northumberland ICT Team Newsletter. We also involve staff with policy and decision making, as well as provide opportunities for in-school coaching where staff can both work with and observe other colleagues.

Monitoring and Evaluation:

It is the responsibility of the Computing subject leader to produce an annual action plan in order to effectively plan, monitor and evaluate the development of the subject across the school.

Within the classroom, monitoring of the standards of children's work and the quality of teaching in Computing is the responsibility of both the Computing subject leader and the senior leadership team. It involves lesson observations, work scrutinies, learning walks, pupil interviews and planning reviews.

This policy has been formally adopted by the governing body.

VERSION HISTORY

VERSION	DATE	DESCRIPTION
Initially adopted	September 2017	Adapted into Swansfield Park Primary School
Review	September 2020	Reviewed and updated
This Review	June 2021	Reviewed & Updated (Policy Statement, Planning, Assessment)

APPROVAL AND AUTHORISATION

	NAME	JOB TITLE	SIGNATURE	DATE
Approved	**Jenny Smith**	Head Teacher	J E Smith	November 2021
Approved	**Angela Jefferies**	Chair of Governors	A Jefferies	November 2021
DATE OF NEXT REVIEW			**Autumn 2024**	

Swansfield Park Primary School

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