



## National Curriculum Aims

The National Curriculum for Computing aims that children:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

## National Curriculum Purpose

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

The computing curriculum is planned in a sequenced way to build knowledge, skills, understanding. To support this, teachers use the *iCompute* scheme.

Our dynamic, creative computing curriculum motivates children to be inspired and imaginative in their use of technology. Computational thinking and reflective learning is encouraged through cross curricular opportunities.

As they move through school, children develop an understanding of how technology and digital systems work.

Children develop their digital literacy, showing that they know how to use technology respectfully and safely. They are able to apply these skills to their use of technology both in and out of school.

Children engage and develop a deep understanding of computer science. Thinking critically and knowing how to develop and create their programs for a range of purposes.

## Implementation

Teachers plan mostly using the *iCompute* scheme to support the effective implementation of the curriculum. *iCompute* provides a broad and balanced curriculum that is sequenced appropriately across the three areas of computing.

Children develop fluency in using technology for a range of purposes with cross curricular links available for them to apply their knowledge.

Staying safe online is integrated into all areas of the curriculum. In computing, it is planned using *Project Evolve* which uses the framework Education for a connected world and within PSHE (using *Jigsaw*)

Computing lessons focus on collaboration and creativity by providing extended periods of time to work independently and with others to solve problems and develop the knowledge and skills required to be computational thinkers.

## Impact

The impact and measure of this is to ensure that children at Pinner Park Primary School are equipped with a good grasp of the computing skills that they will need in a future world where technology plays an increasingly important role in our everyday lives and will be essential in almost every possible area of future employment.

Teachers will use formative assessment from their observations in the classroom and their evaluations of the activities children undertake.

What children say about their learning will also be a good measure of their success in learning from the Computing curriculum.

We also expect all children to be able to demonstrate a very sound understanding of how to keep themselves and others safe on-line through what they say and what they do.

## Knowledge & Skills

There are three aspects to the computing curriculum:

- **Computer Science (CS)** 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.
- **Information technology (IT)** pupils are equipped to use information technology to create programs, systems and a range of content.
- **Digital Literacy (DL)** digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology

While there are three aspects to the computing curriculum (computer science, information technology, and digital literacy) there is the 'golden thread' of computational thinking which underpins computer literacy. In order to develop as computational thinkers, children engage with computational concepts and approaches:

### Concepts

- Logic: predicting and analysing
- Algorithms: making steps and rules
- Decomposition: breaking down into parts
- Patterns: spotting and using similarities
- Abstraction: removing unnecessary detail
- Evaluation: making judgements

### Approaches

- Tinkering: experimenting and playing
- Creating: designing and making
- Debugging: finding and fixing errors
- Persevering: keeping going
- Collaborating: working together

## Creativity

Computing is an area of the curriculum that has many opportunities for children to demonstrate creativity through developing their own programs, systems and digital content whilst applying their developing computational thinking.

Computing has opportunities for natural cross-curricular learning; examples include presenting data in tables, researching in history or writing instructions in English.

## Assessment

Tracking children's progress throughout their school life is vital in order to establish their acquisition of knowledge and skills.

At Pinner Park Primary School, learning starts with the children's prior knowledge and any misconceptions they may have.

Misconceptions that arise throughout the unit are identified and addressed appropriately by the teacher. At Pinner Park Primary School we are trialling approaches to assessing children's recall of their learning to assess how effectively knowledge and skills have been embedded and mastered.

Children will keep a record of their learning in Computing by saving the work they create electronically. They may also use other means of recording their learning including printing work, video clips and photographs.