# Lingdale Primary School

## COMPUTING POLICY June 2014

*"Computers are now part of everyday life. For most of us, technology is essential to our lives, at home and at work. 'Computational thinking' is a skill children must be taught if they are to be ready for the workplace and able to participate effectively in this digital world." NAACE 2014*

**Rationale:**

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.

The new national curriculum for computing has been developed to equip young people in England with the foundational skills, knowledge and understanding of computing they will need for the rest of their lives. Through the new programme of study for computing, they will learn how computers and computer systems work, they will design and build programs, develop their ideas using technology and create a range of content.

**Aims:**

The national curriculum for Computing aims to ensure that all pupils:

- 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.

**Curriculum:**

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**Teaching and Learning in Computing**
All lessons need clear learning objectives which are shared and reviewed with the pupils effectively. A variety of strategiesare used to assess progress. The information is used to identify what is taught next.

Lessons must make effective links with other curriculum areas and subjects, especially Literacy , Numeracy and Science.

Activities should be challenging, motivating and extend pupils' learning.

As they move through school pupils have more frequent opportunities to develop their skills and select and use appropriate multimedia tools, and combine these for a given purpose with confidence.

**Making Cross Curricular Links**

At Lingdale Primary School we believe that making links between curriculum subjects and matters, skills and processes will deepen the children's understanding by providing opportunities to reinforce and enhance learning. A majority of our formative assessment will be taken from cross curricular work where children are applying taught matters, skills and processes.

**Continuity and progression**

The school ensures curriculum continuity by close liaison between staff and the planning stages.

### Key stage 1

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

### Key stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration

- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

**Inclusion**

Planning at all levels ensures that the interests of boys and girls are taken into account. At Key Stage 1 the pupils are grouped in mixed ability age groups and gender groups for all activities. In Key Stage 2 pupils may be grouped by ability within their age group.

The pupils work individually, in pairs, as part of a small group and as a whole year group each term. They use a variety of means for communicating and recording their work.

All pupils, including those with special educational needs, undertake the full range of activities. Teacher assessment determines the depth to which individuals and groups go during each unit of work.

**Organisation**

Computing is taught discretely for one hour per week with the children then being provided with opportunities to develop their skills in cross curricular activities.

**Assessment, Recording and Reporting in Computing**
**Types of Assessment**

**Formative** – assessment for learning – allows the teacher to see what the child knows, understands and can do

**Summative** – assessment of learning – records overall achievement of the child
**Diagnostic** – identifies areas of strength and weakness
**Evaluative** – allows teachers and school leaders to see the effectiveness of teaching in terms of performance

**Formative Assessment**

Formative assessment is embedded in the teaching and learning process of Computing at Lingdale Primary School.

It involves:

1. Evaluating pupils level of knowledge
2. Setting explicit learning intentions
3. Sharing learning intentions and success criteria with pupils
4. Questioning effectively
5. Pupils evaluating their own and peers performance against success criteria
6. Teacher s and pupils reflecting and reviewing performance and progress
7. Effective oral feedback to inform pupils what they should do next
8. Children responding to feedback

**Self-Assessment and Peer Assessment**

Peer and self-assessment are ways of engaging children in understanding their progress in learning and identifying next steps in their learning that can be used in addition, and to support, oral feedback from teachers and Support Staff. The aim is to involve children in the analysis and constructive criticism of their own and others work.

Learners use the success criteria to make judgements on their own, and peers, learning and identify areas for development – next steps.

**Day to Day Assessment**

The main focus involves teachers using their professional skills to observe a child to see if the work provided for them is sufficiently challenging to ensure progress or that misconceptions or 'gaps' are not impacting on progress. The assessments are recorded on the planning sheets and used to inform future planning.

This may be achieved through:

- Questioning
- Observing
- Discussing
- Analysing
- Checking children's understanding
- Engaging children in reviewing progress

**Assessment <u>of</u> Learning – Summative Assessments**

At the end of a unit of work summative assessments are made about each child's achievements throughout the unit and are they recorded on the Summative assessment sheet. Each statement that the child has achieved throughout the unit is highlighted and dated. Teachers should also note where evidence for each achievement can be found. Strengths and areas for development are identified and this informs future learning of the skills matters and processes for the next unit of work.

Then at the end of each year a summative judgement is made as to whether individual children are emerging, expected or exceeding their year group expectations in Computing.

**Assessment <u>for</u> Learning – Formative Assessments**

The skill, matter or process objectives and success criteria are made explicit in all planning. Key questions and cross-curricular opportunities are identified on weekly planning.

Assessment opportunities are identified in weekly foundation planning and these form the basis planning for learning for the next lesson.

Teachers make brief notes in the assessment note column on planning to inform subsequent teaching and learnings. It is best practice to be constantly be revising planned learning.

**Success Criteria**

Success criteria are shared with all children and displayed throughout the lesson to be used by the learner, peers or teacher. These should be differentiated where appropriate.

**Target Setting**

Target setting involves staff and children identifying challenging and measureable targets. These are realistic and manageable and aim to raise self-esteem through success.

By evaluating tasks that activate children's prior knowledge, teachers can then plan a set of challenging but achievable targets/learning objectives for the unit of work in Computing.

The performance of each child is monitored during and recorded at the end of each unit.

## Marking and Feedback

**Rationale**

We are committed to providing relevant and timely oral feedback to pupils. Feedback intends to serve the purposes of valuing pupils' learning, helping to diagnose areas for development or next steps, and evaluating how well the learning task has been understood. Feedback

should be a process of creating a dialogue with the learner, where questions can be asked; the learner is actively involved in the process.

At Lingdale Primary School, we aim to:

- Improve standards by encouraging children to give of their best and improve on their last piece of work;
- Develop children's self-esteem through praise and valuing their achievements;
- Create a dialogue which will aid progression.

**Effective Feedback Strategies**

The following strategies can be used to assess and provide feedback:

**1. Verbal Feedback**

This means the discussion of work in direct contact with the child/ group of children. It is particularly appropriate with younger, less able or less confident children.

**2. Success Criteria Checklists**

Success Criteria checklists can be used in all subjects and may include columns for self/peer assessment and teacher assessment. These should be differentiated where appropriate.

For example:

| **Success Criteria Checklist** |
| --- |
| Learning Objective: To put sounds over an animation. |

| | |
|---|---|
| 1. Record a sound using Audacity | |
| 2. Save the sound file | |
| 3. Attach sound file to chosen image | |

## Moderation

Moderation is the process of bringing individual judgements into line with general standards and those throughout school and nationally. Moderation is carried out annually for Computing.

## Monitoring and Evaluation of the Computing Policy.

Teaching and learning of Computing at Lingdale Primary will occur yearly alongside moderation of work.

Monitoring and evaluation of teaching, learning and the curriculum enable us to:

- Find out about the quality of teaching and learning and standards of achievement
- Identify strengths and areas for development
- Identify areas for development and take appropriate action
- Ensure consistency in continuity and progression
- Provide appropriate support and resources
- Ensure the needs of all groups or children are addressed
- Share good practice

The Headteacher monitors:

- Long term, medium term and short term planning
- Co-ordinates and monitors moderation of judgements
- Scrutinises assessment notes
- Ensures policy is implemented

Subject Leaders monitor:

- Long term, medium term and short term planning
- Annual assessments when a summative judgement is made.
- Co-ordinates and monitors moderation of judgements
- Ensures policy is implemented
- Supports and guides teachers in teaching and learning of Computing.
- Monitors and evaluates practices in school
- Keeps up to date with latest initiatives, research and resources and communicate these to staff
- Attends relevant CPD
- Prepares, organises and delivers appropriate CPD

All staff:

- Complete weekly planning that indicates assessment focus
- Assess pupils work in each lesson and provide notes on planning
- Plan learning that is in response to assessment information
- Highlights children's achievements on the Summative assessment sheets at the end of a unit of work.
- Makes a summative judgement at the end of the year or upper/lower key stage for each child.

**Review and Evaluation of the Policy**

The policy will be reviewed annually, to ensure it is kept in line with any curriculum changes that take place within the school or externally.

**Equal Opportunities and Differentiation**

It is important when planning work in Computing that the teacher pays close attention to equal opportunity in respect of gender, race , the needs of the most able children and those children with special educational needs.

**Points for consideration by teachers when planning Computing work are**

- Am I promoting Computing equally to both sexes?
- Is the material I am using attractive to all children- particular care should be taken when using illustrations in books or worksheets
- Take care when planning work so that racial ethics are given consideration, especially in work connected with the human body and food
- Am I catering for the needs of the most able and those with learning difficulties? Will the work provided enable all children to feel that they are achieving and progressing?
- If there is evidence of underachievement by any group, positive corrective action must be initiated.

**Activating Prior Knowledge**

Using prior assessment information to guide activities and strategies this enables teachers to accurately identify the start point for learning. A record of the activity or strategy outcome is kept in each child's workbook.

**Learning Intentions/ Objectives**

Based on prior assessment information and outcomes from the activation of prior knowledge teachers identify ordered learning objectives for each group within the class to ensure that progress in learning is made.

Learning objectives and success criteria are to be shared with the children at the beginning of each Mathematics lesson so that children know their learning steps throughout the lesson.

See Appendix A for year group objectives and curriculum overview.

**Differentiation**

There are a number of different forms of differentiation:

- By outcome – where a task is given and the children respond at different levels
- Different tasks around the same topic matched to the needs of the children
- Variety of input for the same task
- Variety of questioning
- Completing different tasks

**Contribution of Mathematics to other areas of the curriculum**

Mathematics is used to extend learning and to enable the pupils to practise their skills in other areas of the curriculum, particularly Science, Geography and History.

Appropriate vocabulary (and the correct use of this vocabulary) should be encouraged both orally and when recording, both in Numeracy and across the curriculum.

**Science**
At both key stages the pupils are expected to use their knowledge and understanding of measurement and data handling at appropriate levels. In science, they should be applying their Numeracy skills at levels similar to those which they are using in their mathematics lessons, particularly when interpreting data. In this respect the two subjects are very closely linked- pupils need to be able to interpret data effectively in order to form valid conclusions for their science investigative work.

**Information and Communications Technology**

The pupils' ICT skills are applied as identified in the medium term planning. At both key stages this involves the pupils using ICT to ; locate and research information (CD Rom, internet); record findings (using text, data and tables); log changes to the environment over time (sensing equipment); gain confidence in using calculators, VCR, video cameras,

digital cameras, and tape recorder as well as the computer. The use of this equipment is indicated in medium term planning and must be used. It forms an important part of the entitlement of all pupils in ICT.

**Financial Commitment**

The financial commitment for Mathematics will differ each year, details of which will be found in the SDP. However, in order that staff can deliver the Mathematics Curriculum effectively, the following financial commitment is envisaged.

- an annual maintenance budget
- a budget for staff development
- bids for specialised amounts of funding
- a financial commitment for Mathematics will be presented each year to the Head teacher for discussion and approval.

**Role of the Mathematics Co-ordinator**

The role of the Mathematics co-ordinator is

- to co-ordinate the teaching of mathematics within the school
- to be involved in the induction of new staff
- to monitor the use of the policy and scheme of work
- to ensure continuity and progression of the teaching and learning of Mathematics across the Key Stages
- the review the Policy and Scheme of Work
- to make staff aware of Mathematics courses on offer and encourage them to attend when appropriate
- to provide, where necessary, staff training and development
- to show by example and good Mathematical practice

**Monitoring and Review**

Monitoring of the standards of children's work and the quality of teaching in Mathematics is the role of the Mathematics Co-ordinator and the Senior Leadership Team in the following ways:

- systematic analysis of medium and short term plans
- classroom observations
- through samples of children's work gathered for formative assessment

- through areas of Mathematics identified for development through the School Development Plan.

**This policy was revised and updated in July 2014 by C Gallagher**

**Next review is July 2016**