L.E.A.D. Academy Trust
Lead • Empower • Achieve • Drive

Forest Lodge Academy

Computing Policy

Review frequency: Annually

Approval: Governing Body

Date: April 2018

Forest Lodge Academy

Computing policy

Introduction

This policy document sets out the school's aims, principles and strategies for the delivery of Information and Communication Technology. It will form the basis for the development of ICT in the school.

The significance of computing

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.
(National Curriculum for England 2013)

The school's aims for computing

The overall aim for Computing is to enrich learning for all pupils and to ensure that teachers develop confidence and competence to use Technology in the effective teaching of their subject.

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.

We also want to:

- Develop capability and understand the importance of information and how to select and prepare it.
- Develop skills in using hardware and software so as to enable them to manipulate information.
- Develop good Health and Safety attitudes and practice.

The school's curriculum organisation

Computing will be linked with the Year group topics where it fits. If it does not fit naturally, year groups will do discreet lessons to demonstrate and apply the computing vocabulary. Every year group will take part in hour of code each year.

Each year group is allocated a bank of computers as a mobile suite to accomplish their computing needs.

Individual class desk-top machines and interactive white boards or LED screens in all classrooms enable the teachers to engage and model particular aspects for the children in all subjects. This medium allows for the creative use of computing in all subjects.

Curriculum Management

The Subject Leader will facilitate the use of Computing in the following ways:

- By updating the policy and scheme of work;
- By ordering/updating resources;
- By providing INSET so that all staff are confident in how to teach the subject and have sufficient subject knowledge;
- To keep staff abreast of new developments;
- By taking an overview of whole school planning to ensure that opportunities occur for pupils to develop a computing capability and that progression is taking place;
- By supporting staff in developing pupils' capability;
- By attending appropriate courses to update knowledge of current developments, and by keeping links with the Advisory Team for computing- By contributing to the School Improvement Plan on an annual basis
- By management of the technician.
- Making sure all staff understands system for logging faults and use of the Internet/email
- Monitoring the curriculum
- Maintaining records of software licenses and their deployment.

Access to ICT

The school has multiple laptop trolleys with laptops, that serve each year group. Each class is equipped with a computer linked with an interactive whiteboard which are also linked to the main network.
All computers are equipped with hard disks on which a suite of core software is installed.

Inclusion

All pupils, regardless of race or gender, shall have the opportunity to develop computing capability. The school will promote equal opportunities for computer usage and fairness of distribution of computing resources. Children with a computer at home are encouraged to use it for educational benefit and parents will be offered advice about what is appropriate usage.
Positive images of computer use by people of both sexes will be promoted. The school recognises the advantages of the use of computers by children with special educational needs.
Using computers can:

- address children's individual needs
- increase access to the curriculum
- enhance language skills

Staff should structure their teaching materials to match a learning difficulty. If the situation arises, the school will endeavour to buy appropriate resources to suit the specific needs of the child.

Recording, assessment and reporting

By the end of each Key Stage, pupils are expected to know, apply and understand the matters, skills and processes outlined in the relevant programme of study.

Key Stage 1

By the end of Key Stage 1 children should be able to:

- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
    - Think of a cup tea, what steps need to be taken to make it? What decisions have to be made? Do you want milk? Do you want sugar?
    - Program a Bee-Bot through a maze, right down the instructions first, plan the instructions.
    - Program a Pro-Bot to travel to a specific point. What instructions do you need to include in order for it to get there? Links to maths, measuring, angles, turns.

- Create and debug simple programs
  - Why does my cup of tea not taste right? Is it too sweet, too milky?
  - Bee-Bot and Pro-Bot, where has it gone wrong, where does it need to change?
- Use logical reasoning to predict the behaviour of simple programs
  - If I put in two spoons of sugar will I like my cup of tea?
  - If I put in these instructions where will the Bee-Bot/Pro-Bot end up?
  - Scratch. Where will the cat end up?
  - Logic. Moving the turtle?
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
  - Create a folder and save work
- Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet. Use resources from:
  - Ceop
  - Hector the Protector
  - Digi duck

- Recognise common uses of information technology beyond school
  - Make links as to where computers are used in everyday life.
  - Create a poster on publisher for all the technology they use at home

Key Stage 2

By the end of Key Stage 1 children should be able to:

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
  - What steps are required to make a cup of tea?
  - Probots, around the rally track
- Use sequence, selection and repetition in programs; work with variables and various forms of input and output
  - Probots, repetition to draw shapes
  - Scratch – make various games linked to their topic
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
  - Draw out the algorithms (processes) for making a cup of tea, the tea is too sweet because the decision to add sugar wasn't given a chance to follow on so it kept on adding.
- Understand computer networks including the internet; how they 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
  - Using advanced searches
  - Google is not the internet. It is simply a search engine and there are others (Bing has a simple list of short cuts for advanced searches)
- Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour
  - CEOP training
  - Hector the Protector
  - Internet safety week
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information
  - Minibeast search – photograph the minibeast, upload to a computer. Another child views the uploaded images and creates a spreadsheet of what has been found. This has been analysed
  - Tablets to find facts
  - Internet to retrieve images
  - Cameras to create a digital image

Staff will assess children with use of simplified descriptors. They will be highlighted termly to show progression and coverage. The steps will be uploaded onto Target Tracker.

Glossary of Terms

Abstraction

Only focusing on the details relevant to the task, in computing this may be by using a database to handle data. In doing this the data can be looked at in specific groups. An example is using Target Tracker to show the progress of pupils on Pupil Premium.

Logic

The non-arithmetic operations performed by a computer, such as sorting, comparing, and matching, that involve yes-no decisions. This might be completed using programs such as Excel

Algorithms

The step-by-step procedure for a machine to complete a task, for example the instructions given to a pro-bot to guide it round a track, or the instructions put into a bee-bot to guide it through a maze.

Data Representation

The way in which information is presented. In its simplest form this could be representing a data set as a graph. However it is also using the appropriate software for the task. Not everything has to be done in Word or PowerPoint.

Monitoring and review

Monitoring will be carried out by senior management and the Computing leader, in the following ways:

- Informal discussion with staff and pupils
- Collection of class computing samples
- Classroom observation and learning walks

Health and Safety/Security

Children will be made aware of the correct way to sit when using the computer and the need to take regular breaks if they are to spend any length of time on computers.

The school also has a 'Responsible Use of The Internet Policy' document.