Computing Policy

St Anne's Fulshaw CE Primary School

Computing Policy

The aim of this document is to provide an overview of the computing curriculum and a programme of study across Key Stages 1 and 2.

The national curriculum for computing has four main 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.

Planning and Delivery

Computing is taught through a thematic, topic based approach enabling the possibility for very good cross curricular links. This fulfils the requirements of the National Curriculum ensuring breadth, balance, continuity and progression of the knowledge, skills and understanding required. Throughout the early years, KS1 and KS2 our topics are planned on a rolling programme. This is reviewed annually due to class changes each year.

Assessment
The children's work is monitored by the class teacher. The teacher is then clear what each child knows, understands and can do. The teacher reports this to parents in termly parents' evenings and at the end of the year in the annual school report. The subject leader for computing will observe teaching of the subject and collect samples of work from each year group in the early years, KS1 and KS2 to give an overview of the subject. They will check what is being taught, its standards and the levels of achievement.

Differentiation/S.E.N

All children have needs that are individual, special and ever changing. Classes contain children of mixed ability, so a wide range of activities are planned to incorporate different learning styles and abilities.

Equal Opportunities

All children will be given equal access to the computing curriculum regardless of ability, race or gender. Class management takes account of such issues and appropriate resources. Differentiation and appropriateness of the task will give all children access to the curriculum.

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Glossary of Terms

Abstraction

Only focussing 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 or Flowol.

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.

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?
  - Flowol 4. Why are the lights not working?
- 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
  - Ceop
  - Hector the Protector
- Recognise common uses of information technology beyond school
  - Learning Platform
  - 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
    - o What steps are required to make a cup of tea?
    - o Probots, around the rally track or to check points around the fairground.
    - o Trip to a centre that uses controls
- Use sequence, selection and repetition in programs; work with variables and various forms of input and output
    - o Probots, repetition to draw shapes
    - o Flowol, using mimics such as the greenhouse – when the temperature reaches a set point the water needs to come on, when the light drops below a set reading the lights need to come on.
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
    - o 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
    - o Using the learning platform to chat to peers and to communicate on joint projects together.
    - o Skype on the tablets, video links between the classes on a shared learning day.
    - o Use the learning platform to save work to, retrieving it and editing it in a variety of locations e.g. home and school.
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
    - o Using advanced searches
    - o 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
    - o CEOP training
    - o Hector the Protector
- 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