



St Aidan's RC Primary School

Policy Statement for Computing

Introduction

This policy provides an overview to the new Computing Curriculum and a programme of study across the Key Stages. It should also serve as a glossary of terms allowing a clear understanding.

This policy links in with the On-line safety policy.

Aims of Computing teaching

By following the National Curriculum 2014 for Computing we aim for all pupils to:

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

The planning and teaching of Computing

We always aim to incorporate as much as we can of the computing curriculum into our termly topics, however where this is not possible lessons will follow an alternative scheme of work.

The core requirements of KS1 and KS2 computing programmes of study, such as coding/programming, will be delivered through our own schemes of work which have been adapted from a range of sources, during lessons based in our ICT suite.

Assessment

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.

Roles and responsibilities

The headteacher will:

Ensure that the policy is regularly reviewed and updated to take into account new developments, both to the primary computing curriculum and to ICT.

The computing subject leader will:

- Provide support, advice and resources to members of staff;
- Monitor the teaching of Computing, revising policies and supporting staff with planning of computing where necessary;
- Monitor the teaching of computing across the school highlighting the continuity and progression of the areas taught across the school;
- Attend relevant training and support staff in CPD needs.
- Monitor the use and need of resources throughout the school.
- Keep up-to-date with new developments in computing and communicate such information and developments to colleagues.

Teachers will:

- Plan and deliver the requirements of the KS1 and KS2 computing programmes of study to the best of their abilities.
- Set high expectations for all their pupils, including pupils with special educational needs and/or disabilities.
- Encourage pupils to apply their knowledge, skills and understanding of computers and iCT across the curriculum.
- Maintain up-to-date assessment records.

Monitoring

Computing is monitored by the subject lead and monitoring is carried out regularly through:

- Scrutiny of plans
- Monitoring of pupils' books
- Learning walks
- Pupil surveys
- Lesson observations

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 of 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
 - What steps are required to make a cup of tea?
 - Probots, around the rally track or to check points around the fairground.
 - Trip to a centre that uses controls
- Use sequence, selection and repetition in programs; work with variables and various forms of input and output
 - Probots, repetition to draw shapes

- 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
 - 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
 - Using the learning platform to chat to peers and to communicate on joint projects together.
 - Skype on the tablets, video links between the classes on a shared learning day.
 - 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
 - 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
- 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