Jotmans Hall Primary School

Computing Policy

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Approved by the Governors: ……

Introduction

Computing is embedded throughout all curriculum subjects. Children will, where possible, cover computing objectives through their cross-curricular work, as well as in timetabled computing lessons. They have opportunities to use and develop their skills on both desktop and laptop computers, as well as using a variety of other equipment that is available. All staff and pupils must adhere to the 'E-Safety and Acceptable Use Policy', to ensure learning is an enjoyable and safe experience.

Purpose of Study

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.

Aims and Objectives

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.

For more information on e-safety and the acceptable use of ICT, please see the 'Jotmans Hall Primary School E-Safety and Acceptable Use Policy (July 2015)'. A copy can be found on the Safeguarding Notice Board in the staff corridor.

The National Curriculum Programme of Study for Computing

Subject content

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.

Organisation

To ensure effective coverage of skills and progression across the year groups, Computing objectives are taught using the Scholastic '100 Computing Lessons' scheme of work. This provides objectives, planning documents and paper-based / digital resources for teaching the 2014 Curriculum in each year group.

Copies of planning documents and resources can be found on the Teacher Drive. Master copies of the books are held by the Computing Co-ordinator.

Mixed Year Classes

Class teachers will assess children's prior knowledge and skills in Computing, in order to ensure objectives are covered and skills are developed.

Teaching and Learning Style

Computing at Jotmans Hall can be taught as an explicit subject, but where possible, is linked to other curriculum subjects. Teachers explore ways of covering computing objectives through cross-curricular work.

Assessment

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

For more information, please refer to the Jotmans Hall Assessment Policy.

Monitoring and Review

A regular audit of resources is carried out by the Computing co-ordinator, along with audits of work and lessons.

The Computing Policy will be reviewed periodically.

Inclusion Statement

At Jotmans Hall Primary School, we are aware that some children have difficulty accessing the curriculum. Therefore, in line with the Disability and Discrimination Act of 2005, and the SEN and Disability Policy of 2001, resources and materials will be adapted and reasonable adjustments made to make sure that this subject is accessible to all the children in our care.

Cross-Curricular Project Work

In the Foundation Stage and Key Stage 1, the foundation subjects are taught through a topic based approach, making cross-curricular links where possible. 'The Learning Journey' (or wheel) can be used as a long-term planning tool. A new topic is covered each term, from a rolling programme.

In Key Stage 2, the foundation subjects are taught as separate units, but cross-curricular links are made wherever possible. These refer to a subject-based rolling programme.

During the Summer Term, the class teachers are free to choose a topic, through which the children will have the opportunity to apply skills learnt in the previous terms.

It is the responsibility of the class teachers to ensure that the key objectives are covered and that there is a progression of skills. The subject co-ordinator should check that this is happening through the school.

Thinking Skills

Thinking skills are essential in 'learning how to learn'. When teachers focus on creative and well tries ways of thinking, standards rise, learning is accelerated and pupils grow in confidence and self-esteem.

At Jotmans Hall Primary School, we are using 'Let's Think' materials to develop thinking skills. Learners will be encouraged to share a common language and perception, respond to challenge, think better in groups, think about their own learning and use their thinking in different situations across the curriculum.

In the Foundation Stage and Key Stage One, Thinking Skills will be taught through Literacy, Maths or Science, or taught as a discrete Thinking Skills lesson. In Key Stage Two, years 3 – 5, Thinking Skills will be taught through Science. In year 6, Thinking Skills will be taught through Literacy, Maths or Science, or be taught as a discrete Thinking Skills lesson.

Problem-Solving Across the Curriculum

Effective problem-solving and investigating is an important part of learning and teaching throughout the whole curriculum.

Children should explore types of problem solving and investigating to prompt previous knowledge, probe understanding and promote and extend their thinking.

Problem-solving activities or investigations:

- are effective (natural) strategies for learning;
- are active approaches to learning;
- give children responsibility for their learning.

Problem-solving should permeate through all learning objectives and should not be seen as a 'bolt-on' activity.

In shared work, teachers can use short problem-solving or investigative activities to:

- refer to previous work and pose questions to assess children's prior knowledge;
- demonstrate and scaffold investigations and problem solving, making explicit the key strategies applied;
- use an investigation or problem to teach the objective;
- model the various methods of recording (e.g. tabulation, diagrams etc.);
- develop children's strategies for solving problems in a variety of contexts;
- teach children how to interpret, select and use information;
- encourage opportunities for thinking aloud and communicating with others.

In independent time, teachers can provide short or extended problem-solving or investigative activities to:

- support children in drawing out patterns, principles, conclusions, justifying answers or identifying relationships;
- promote the social context for positive dialogue;
- support children in developing a wide range of strategies, in order to develop the skills of working systematically, including finding all possibilities;

- help children record their thinking in a variety of ways including diagrammatic representation and simple algebraic notation.

In the plenary, the teacher may use a problem-solving or investigative activity to:

- assess children's understanding of the objectives being taught;
- prepare children for the next lesson or series of lessons;
- provide opportunities to communicate children's different approaches to the specific problem solving activities in order to address any misconceptions.