

Jerry Clay Academy



Computing Guidance Document

Updated September 2022



Introduction

At Jerry Clay Academy we the staff, children, trustees and parents are working together as a team to promote the development of secure, happy, well-adjusted individuals who are equipped for lifelong learning. The use of Computing is an integral part of our curriculum and is a pivotal subject to the develop for the future. Our aim is to ensure all our pupils are provided to a high quality, progressive curriculum to enable our children to become Computing proficient.

Intent

Aims and objectives

Computing has become an increasing part of our everyday lives and the way we all work and entertain ourselves. Almost everything we do at school now involves the use of ICT:

- online lesson research, teaching plans and resource materials;
- publishing writing/information;
- lesson delivery via either visualisers or interactive whiteboards;
- communication by e-mail;
- document distribution and storage;
- assessment information analysis;
- production and editing of reports.



Through teaching Computing we equip children to participate in a world of rapidly-changing technology. We enable them to find, explore, analyse, exchange and present information. We also help them develop the necessary skills for using information in a discriminating and effective way. This is a major part of enabling children to be confident, creative and independent learners.

The objectives of teaching Computing are to enable children:

- to develop ICT capability in finding, selecting and using information; for example, searching the Internet or databases.
- to use ICT for effective and appropriate communication; for example, Word processing, publishing and presentations.
- to monitor and control events, both real and imaginary; for example, control, sensing
- to apply their ICT skills and knowledge to their learning in other areas.
- to explore their attitudes towards ICT and its value to them and society in general for example, to learn about issues of security and personal safety, confidentiality and accuracy.

Implementation

Teaching and learning style

In order to equip children with the technological skills & knowledge to become independent learners, the teaching style that we adopt is as active and practical as possible. We use direct instruction on how to use hardware or software to ensure acquisition of skills; and combine this with cross subject opportunities to allow individuals or groups of children to use ICT to help them progress in whatever they are learning. We ensure all classes follow a progressive document to enable the children to develop basic computing skills as well as accessing a range of software.

We recognise that all classes have children with a wide range of ICT abilities. This is especially true when some children have access to ICT equipment at home, while others do not. We provide suitable learning opportunities for all children by matching the challenge of the task to the ability and experience of the child. We achieve this in a variety of ways:

- setting tasks which are open ended and can have a variety of responses;
- setting tasks of increasing difficulty (not all children complete all tasks);
- grouping children by ability in the room, and setting different tasks for each ability group;
- providing resources of different complexity that are matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children.



Computing curriculum planning

The school utilises the 'Rising Stars, Switched on Computing' scheme of work for Computing, alongside the JCA Computing progression document, as the basis for its curriculum planning.

We carry out the curriculum planning in Computing in three phases (long term, medium term and short term).

The long term plan maps the Computing themes and units that the children study in each term during each year group. The children often study Computing as part of their work in other subject areas. Our long term Computing plan shows how teaching units are distributed across the year groups, and how these fit together to ensure progression within the curriculum plan.

Our medium term plans, which we have adopted from the 'Rising Stars, Switched on Computing' scheme of work, give details of each unit of work for each half term. They identify the key learning objectives for each unit of work, list the specific learning objectives, and expected outcomes for each session. The Computing subject leader is responsible for keeping and reviewing these plans.

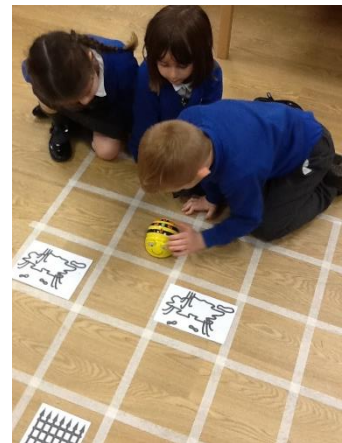
The units studied in Computing are planned to build on prior learning. While we offer opportunities for children of all abilities to develop their skills and knowledge in each unit, we

also plan progression into the scheme of work, so that the children are increasingly challenged as they move up through the school.

Parents are required to give signed authorisation before their child can use the Internet, either in guided or in independent school work. The parents are however assured that their child's use of the Internet at school is always supervised. A record of those children who do not have permission to use the Internet at school is held by each class teacher and by the school office.

KS1 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.



KS2 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.



The Early Years Foundation Stage

We teach Computing in the EYFS as an integral part as set out in the EYFS long term plan. Our Computing scheme for the EYFS is centred around play-based, unplugged (no computer) activities that focus on building children’s listening skills, curiosity and creativity and problem solving.

Technology in the Early Years can mean:

- taking a photograph with a camera or tablet
- searching for information on the internet
- playing games on the interactive whiteboard
- exploring an old typewriter or other mechanical toys
- using a Beebot
- watching a video clip
- listening to music

Allowing children the opportunity to explore technology in this often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in Key Stage 1 Computing.

Impact

The contribution of Computing to teaching in other curriculum areas

The teaching of Computing contributes to teaching and learning in all curriculum areas. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. For example, graphics work links in closely with work in art, and work using databases supports work in numeracy, while the Internet proves very useful for research in humanities and science subjects. Computing enables children to present their information and conclusions in the most appropriate way.

English

Computing is a major contributor to the teaching of English. Children's reading development is supported through talking stories, e-books and access to a variety of texts available from the Internet. As the children develop mouse and keyboard skills, they learn how to edit and revise text on a computer. As suggested from pupil voice, children across school now use laptops as a format to publish the end of unit writing. They also learn how to improve the presentation of their work by using desktop publishing software. There is in addition a variety of software and online resources which targets specific reading, grammar and spelling skills. They learn how to create short video sequences, with movie editing software. Purple Mash software also has numerous engaging templates for children to use to enhance their English work.

Maths

Children use Computing in Maths to collect data, make predictions, analyse results, and present information graphically. Screen robots allow pupils to give exact instructions for a particular route, or to use their knowledge of angles to draw a range of polygons. The Teaching Maths, Purple Mash and Primary Games software supports numeracy across the school and are used frequently in all classrooms. Children also access a range of apps such as Times Table Rock Stars to develop key maths skills and fluency.



Science

Software is used to animate and model scientific concepts, and to allow children to investigate processes which it would be impracticable to do directly in the classroom. Data loggers are used to assist in the collection of data and in producing tables and graphs.

Personal, social and health education (PSHE) and citizenship

Computing makes a contribution to the teaching of PSHE and citizenship in that children in ICT classes learn to work together in a collaborative manner. They also develop a sense of global citizenship by using the Internet and email. Through discussion of safety and other issues related to electronic communication, the children develop their own view about the use and misuse of ICT. E Safety (see separate policy) is a core thread running throughout PSHE & Computing.

ICT and inclusion

At our school we teach Computing to all children, whatever their ability and individual needs. Computing forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Computing teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details see separate policies: Special Educational Needs; Disability Non Discrimination and Access.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively (for example, a lot of software can be differently configured for different ability ranges). Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.



We enable pupils to have access to the full range of activities involved in learning Computing. Our hardware can accept a range of input devices catering to pupils with specific difficulties. Where children are to participate in activities outside the classroom, for example, a visit to Computing exhibition, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

Strategies to support children with SEN

In Computing, we use a number of evidence-based strategies to support children with SEN. Strategies include:

Scaffolding

- Small, simple steps to success are modelled and displayed to help children complete tasks independently.
- Visual prompts; this may include graphics of icons and tools.
- Support for SEN children with learning vocabulary; this may include flash cards.
- Games/songs to support vocabulary learning.

All scaffolding follows a 'I do, you do, we do' approach.

Explicit Instruction

- All steps, processes and algorithms are modelled first.
- Teacher to use a think out loud when problem solving e.g when dealing with a pop up.
- Pupils may be supported in their thought process in Computing.
- Pupils will be given specific opportunities by adults to practise specific skills that are barriers to learning.
- Visual aids and concrete examples (where necessary) will be used to support learning.

Cognitive and Metacognitive Strategies

- Tasks may be 'chunked' into smaller steps.
- Vocabulary prompts may be used to support sentence work.

- Depending on ability, children with SEN may be asked to evaluate their own progress and discuss what they can do to move their learning forward.

Flexible Grouping/Fading

- Temporary groups may be established to support learning a particular concept.
- Pre-teaching and support with new processes, programs, vocabulary etc.
- Children may be paired in mixed ability to support needs.
- Prompt sheets may be used to support with ideas and planning.
- Checklists may be established to help with different processes. E.g logging on or accessing a new program.

Use of technology

- Tasks set may include using different devices to meet needs.
- Speech generating apps may be used for recording ideas/processes.
- A visualizer may be used to model and magpie ideas.

Assessment for learning

Teachers will assess children's work in Computing by making informal judgements during lessons in relation to the JCA Computing progression document. On completion of a piece of work, the teacher assesses the work, and uses this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress. Older children are encouraged to make judgements about how they can improve their own work.

Resources

Our school has the appropriate computer to pupil ratio, and Internet access. All software is already installed on laptops. We have a class set of ipads for use during lessons too. We contract a technical support company weekly to keep our equipment in good working order. Members of staff report faults online through the support website. The technician will also set up new equipment, and install software and peripherals. Each member of teaching staff has their own laptop & ipad.



In order to keep our school computers virus free, no software from home will be installed on school computers.

Along with desktop and laptop computers, the school has the following:

Hardware

- network, including switch, router and server PC;
- network shared resources, including printers;

- interactive whiteboard and screen projection equipment;
- scanner;
- 30 laptops & ipads contained in one mobile trolley;
- digital stills cameras;
- digital microscope;
- data logger and sensors;
- video recorders;
- calculators;
- floor robot;
- control interface with buzzers etc.;
- headphones and microphones;
- overhead projector;
- keyboard (musical)
- visualisers in every classroom

Software

- word processing and desktop publishing programs;
- painting and drawing software;
- multimedia presentation program;
- spreadsheet and database programs;
- control program and models;
- simulations;
- encyclopaedia reference material;
- virus protection.

Online material

- school website
- school email accounts.

Monitoring and review

The monitoring of the standards of the children's work and of the quality of teaching in Computing is the responsibility of the subject leader, alongside Senior Leaders. The Computing subject leader is also responsible for supporting colleagues in their teaching of Computing, for keeping informed about current developments in the subject, and for providing a strategic lead and direction for Computing in the school. An annual summary report is discussed with leadership team and priorities acted upon in order to improve further attainment and Computing facilities.

A Mitchell- Computing Subject Leader