Computing Statement and Guidance

Aims and Scope

The National Curriculum for Computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles of computer science, including logic, algorithms, data representation, and communication.
- 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.

The school's aims are to:

- Provide a relevant, challenging and enjoyable curriculum for Computing for all pupils.
- Meet the requirements of the National Curriculum programmes of study for Computing.
- Use Computing as a tool to enhance learning throughout the curriculum.
- Respond to new developments in technology.
- Equip pupils with the confidence and capability to use Computing throughout their later life.
- Enhance learning in other areas of the curriculum using Computing.
- Develop the understanding of how to use Computing safely and responsibly.

The school believes that ICT, computer science, digital literacy and online safety:

- Are essential life skills necessary to fully participate in the modern digital world.
- Allow children to become creators of digital content rather than simply consumers of it.
- Provide immediate access to a rich and varied source of information and content.
- Communicate and present information in new ways which help pupils to understand, access and use it more readily.
- Can motivate and enthuse pupils.
- Can help pupils focus and concentrate.
- Offer opportunities for communication and collaboration through group working both inside and outside of school.
- Have the flexibility to meet the individual needs and abilities of each pupil.

Other linked Documents

- Online Safety Policy
- Keeping Children Safe in Education

Guidance

The use of information and communication technology is an integral part of the National Curriculum and is a key skill for everyday life. In an increasingly digital world, there now exists a wealth of software, tools and technologies that can be used to communicate, collaborate, express ideas and create digital content. At Red Oaks

Primary School, we recognise that pupils are entitled to a broad and balanced Computing education with a structured, progressive approach to the learning of how computer systems work, the use of IT and the skills necessary to become digitally literate and participate fully in the modern world. The purpose of this policy is to state how the school intends to make this provision.

Planning

The school will be using Purple Mash and the scheme of work that comes with the software. The scheme meets the objectives of the National Curriculum for Computing, outlined in a comprehensive coverage map, *see Appendix 2*.

The coverage map has been designed to enable pupils to achieve the stated objectives and allow for clear progression. Pupil progress towards these objectives will be recorded by teachers as part of their class recording system.

We recognise that all classes have children with widely differing Computing abilities. This is especially true when some children have access to 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.

Early Years

It is important in the foundation stage to give children a broad, play-based experience of ICT and Computing in a range of contexts, including off-computer activities and outdoor play.

Computing is not just about computers. Early years learning environments should feature ICT scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities such as 'programming' each other using directional language to find toys/objects, creating artwork using digital drawing tools and controlling programmable toys.

Outdoor exploration is an important aspect and using digital recording devices such as video recorders, cameras and microphones can support children in developing communication skills. This is particularly beneficial for children who have English as an additional language.

For curriculum aims, *see Appendix 1.*

Inclusion

We believe that all children have the right to access Computing. In order to ensure that children with special educational needs achieve to the best of their ability, it may be necessary to adapt the delivery of the Computing curriculum for some pupils.

We teach Computing to all children, whatever their ability. Computing forms part of the National Curriculum to provide a broad and balanced education for all children.

Through the teaching of Computing, we provide opportunities that enable all pupils to make progress. We do this by setting suitable challenges and responding to each child's individual needs. Where appropriate, Computing, especially the ICT strand, can be used to support SEND children on a one to one basis where children receive additional support.

The role of the class teacher

Individual teachers will be responsible for ensuring that the pupils in their classes have opportunities for learning Computing and using their knowledge, skills and understanding of Computing across the curriculum.

They will plan and deliver the requirements of the National Curriculum for Computing to the best of their ability. They will do this by following the scheme of work. We set high expectations for our pupils and provide opportunities for all to achieve, including boys and girls, pupils with educational special needs, pupils with disabilities, pupils from all social and cultural backgrounds and those from diverse linguistic backgrounds.

The class teacher's role is a vital role in the development of Computing throughout the school and will ensure continued progression in learning and understanding and create effective learning environments.

The class teacher will also:

- Secure pupil motivation and engagement.
- Provide equality of opportunity using a range of teaching approaches and techniques.
- Use appropriate assessment techniques and approaches.
- Maintain up-to-date assessment records.

Assessment and record keeping

Teachers regularly assess progress through observations and evidence. Key objectives to be assessed are taken from the National Curriculum to assess Computing each term. Any piece of work they complete will be saved within Purple Mash, where it can be assessed and a response can be sent back to the child. This allows for the pupil to be challenged or supported upon returning to their marked work in the following lesson.

We assess the children's work in Computing by making informal judgements as we observe the children during lessons. Once the children complete a unit of work, we make a summary judgement of the work for each pupil by using the lesson overviews, noting which children are working below or above. At the end of each unit an overall judgement will be made for each child which will then be added onto the final assessment spreadsheet.

We record the results on our year group Computing assessment spreadsheets. These results then inform future planning, intervention and greater opportunities for more

able children. Evidence of children's work can be saved on shared media drives and through the children's individual logins on Purple Mash. These can be used for reference and as indication of the assessment result submitted.

Monitoring and Reviewing

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. The subject leader is also responsible for supporting colleagues in the teaching of Computing, for keeping informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The subject leader will be responsible for carrying out the vital task of reviewing samples of the children's work and for visiting classes to observe the teaching.

Cross Curricular Links

Computing contributes to teaching and learning in all curriculum areas. For example, graphics work links in closely with work in art and work using databases supports work in maths, while the Internet proves very useful for research in humanities 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. Through the development of keyboard skills and the use of computers, children learn how to edit and revise text. They learn how to improve the presentation of their work by using desktop publishing software. New apps can be used to encourage Speaking and Listening, as well as Talk for Writing.

Maths

Many Computing activities build upon the mathematical skills of the children. Children use Computing in mathematics to collect data, make predictions, analyse results and present information graphically. They also acquire measuring techniques involving positive and negative number and including decimal places. New apps, such as Times Table Rock Stars, are used to enhance the provision of Maths teaching.

SMSC and Citizenship

Computing makes a contribution to the teaching of SMSC and citizenship as children learn to work together in a collaborative manner. They develop a sense of global citizenship by using the Internet and email. Through the discussion of moral issues related to electronic communication, children develop a view about the use and misuse

and they also gain a knowledge and understanding of the interdependence of people around the world.

The role of the Computing Lead

The Computing lead is responsible for the implementation of Computing policy across the school. Their role is to:

- Offer help and support to all members of staff (including teaching assistants) in the teaching, planning and assessment of Computing.
- Provide colleagues opportunities to observe good practice in the teaching of Computing.
- Maintain resources and advise staff on the use of digital tools, technologies and resources.
- Monitor classroom teaching or planning.
- Monitor the children's progression in Computing, looking at examples of work of different abilities.
- Keep up-to-date with new technological developments and communicate information developments with colleagues.
- Lead staff training on new initiatives.
- Attend appropriate in-service training.
- Have enthusiasm for Computing and encourage staff to share this enthusiasm.
- Keep parents and governors informed on the implementation of Computing in the school.
- Feedback to the Computing Link Governor three times a year.

Staff training

The Computing lead will assess and address staff training needs as appropriate and in response to individual needs and requests throughout the year.

Individual teachers should attempt to continually develop their own skills and knowledge, identify their own needs and notify the subject leader.

Teachers will be encouraged to use Computing to produce plans, reports, communications and teaching resources.

Resources and access

The school acknowledges the need continually to maintain, update and develop its resources and to make progress towards a consistent, compatible IT system by investing in resources that will effectively deliver the strands of the national curriculum and support the use of Computing across the school. Teachers are required to inform the IT Helpdesk of any faults as soon as they are noticed. Computing network infrastructure and equipment has been sited so that:

- Every classroom from nursery to Year 6 has at least 2 desktops connected to the school network, staff desktop and BVS Ecotouch TV. These are fully interactive.

- There are portable trolleys containing laptops and iPads.
- There are at least 3 class iPads available from Nursery to Year 6

Along with the computers, the school has a range of hardware and software. New apps are agreed and updated regularly by members of the IT team.

Technician

A qualified technician team is provided by a maintenance contract with the Parks Academy Trust. They are responsible for the installation of new software, maintenance of hardware and offers support to staff where difficulties arise. Any ICT problems should be logged using the school email system (helpdesk@redoaks.org.uk).

Health and Safety and Safeguarding

The school is aware of the health and safety issues involved in children's use of Computing. All electrical appliances in school are tested accordingly. It is advised that staff should not bring their own electrical equipment in to school but if this is necessary, then the equipment must be PAT tested before being used in school. This also applies to any equipment brought in to school by, for example, people running workshops, activities, etc. and it is the responsibility of the member of staff organising the workshop, etc. to advise those people. All staff should visually check electrical equipment before they use it and take any damaged equipment out of use. Damaged equipment should then be reported to the ICT technician, subject leader or Head Teacher who will arrange for repair or disposal.

Please refer to the Red Oaks Child Protection and Online Safety policies for further information on safeguarding and Computing. Link - KSIE

Security

- The ICT and Computing technician will be responsible for regularly updating anti-virus software.
- Use of Computing will be in line with the school's 'acceptable use policy'. All staff, volunteers and children must sign a copy of the school's AUP.
- Parents will be made aware of the 'acceptable use policy'.
- All pupils and parents will be aware of the school rules for responsible use of Computing and the Internet and will understand the consequence of any misuse.
- The agreed rules for safe and responsible use of Computing and the internet will be displayed in all Computing areas.

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Appendices

Appendix 1

Area	Key Stage 1 Aims	Key Stage 2 Aims
Computer Science (CS)	1. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions 2. Create and debug simple programs 3. Use logical reasoning to predict the behaviour of simple programs	4. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 5. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output 6. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 7. Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web 8. Appreciate how [search] results are selected and ranked
Information Technology (IT)	1. Use technology purposefully to create, organise, store, manipulate and retrieve digital content	2. Use search technologies effectively 3. 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

Area	Key Stage 1 Aims	Key Stage 2 Aims
Digital Literacy (DL)	1. Recognise common uses of information technology beyond school	3. Understand the opportunities [networks] offer for communication and collaboration
	2. 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	4. Be discerning in evaluating digital content
		5. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Appendix 2

YEAR 1						
	Term 1 Online safety starter in every lesson	Term 2 Online safety starter in every lesson	Term 3 Online safety starter in every lesson	Term 4 Online safety starter in every lesson	Term 5 Online safety starter in every lesson	Term 6 Online safety starter in every lesson
Units:	1.1:Online Safety and Exploring Purple Mash – 4 weeks 1.2:Grouping and Sorting –2 weeks (2DIY)	1.3:Pictograms – 3 weeks (2Count) 1.4:Lego Builders – 3 weeks (2DIY)	1.5:Maze Explorers– 3 weeks(2Go) Animated 1.6:Animated Stories – 3 weeks plus 2 lesson linked to English (2Create A Story)	1.7:Coding – 6 weeks (2Code)	1.8:Spreadsheets – 3 weeks (2Calculate) 1.9:Technology Outside of School – 2 weeks	Assessment for Learning based intervention. Online safety

YEAR 2						
	Term 1 Online safety starter in every lesson	Term 2 Online safety starter in every lesson	Term 3 Online safety starter in every lesson	Term 4 Online safety starter in every lesson	Term 5 Online safety starter in every lesson	Term 6 Online safety starter in every lesson
Units:	2.1:Coding – 6 weeks (2Code)	2.2:Online Safety – 2 weeks 2.3:Spreadsheets – 4 weeks (2Calculate)	2.4:Questioning – 6 weeks (2 Question and 2 Investigate)	2.5:Effective Searching – 3 Weeks (Browser) 2.5:Creating Pictures – 3 weeks (2Paint a Picture)	2.5:Creating Pictures (cont) – 2 weeks (2Paint a Picture) 2.8:Presenting Ideas – 4 weeks	2.7:Making Music – 3 weeks (2Sequence) Assessment for Learning based intervention. Online safety

YEAR 3						
	Term 1 Online safety starter in every lesson	Term 2 Online safety starter in every lesson	Term 3 Online safety starter in every lesson	Term 4 Online safety starter in every lesson	Term 5 Online safety starter in every lesson	Term 6 Online safety starter in every lesson

Units:	3.1:Coding – 6 weeks (2Code)	3.2:Online Safety – 3 weeks 3.3:Spreadsheets – 3 weeks (2Calculate)	3.4:Touch Typing – 4 weeks (2Type) 3.5:Emails – 2 weeks (2Email, 2 Connect and 2 DIY)	3.5:Emails (cont) – 4 weeks (2Email, 2 Connect and 2 DIY) 3.6:Branching Databases – 2 weeks (2Question)	3.6:Branching Databases (cont) – 2 weeks (2Question) 3.7:Simulations – 3 weeks (2Simulate and 2Publish)	3.8:Graphing – 3 weeks (2Graph) Assessment for Learning based intervention. Online safety

YEAR 4

	Term 1 Online safety starter in every lesson	Term 2 Online safety starter in every lesson	Term 3 Online safety starter in every lesson	Term 4 Online safety starter in every lesson	Term 5 Online safety starter in every lesson	Term 6 Online safety starter in every lesson
Units:	4.1:Coding – 6 weeks (2Code)	4.2:Online Safety – 4 weeks 4.3:Spreadsheets – 2 weeks (2Calculate)	4.3:Spreadsheets (cont) – 4 weeks (2Calculate) 4.4:Writing for Different Audiences – 2 weeks (2Email, 2Connect, 2 DIY)	4.4:Writing for Different Audiences (cont) – 3 weeks (2Email, 2Connect, 2 DIY) 4.5:Logo – 3 weeks (reduced by 1) (2Logo)	4.6:Animation – 3weeks (2Animate) 4.7:Effective Search - 3 weeks (Browser)	4.8:Hardware Investigators – 2 weeks. Assessment for Learning based intervention. Online safety

YEAR 5

	Term 1 Online safety starter in every lesson	Term 2 Online safety starter in every lesson	Term 3 Online safety starter in every lesson	Term 4 Online safety starter in every lesson	Term 5 Online safety starter in every lesson	Term 6 Online safety starter in every lesson
Units:	5.1:Coding – 6 weeks (2Code)	5.2:Online Safety – 3 weeks 5.3:Spreadsheets – 3 weeks (2Calculate)	5.3:Spreadsheets (cont) – 3 weeks (2Calculate) 5.4:Databases – 3 weeks (reduced by 1 week).	5.5:Game Creator - 5 weeks (2DIY 3D)	35.6:D modelling – 4 weeks (2Design and Make)	5.7:2 Concept Maps (cont) – 2 weeks (2Connect) Assessment for Learning

			(2Question, 2 Investigate)		5.7:2 Concept Maps – 2 weeks (2Connect)	based intervention. Online safety
YEAR 6						
	Term 1 Online safety starter in every lesson	Term 2 Online safety starter in every lesson	Term 3 Online safety starter in every lesson	Term 4 Online safety starter in every lesson	Term 5 Online safety starter in every lesson	Term 6 Online safety starter in every lesson
Units:	6.1:Coding – 6 weeks (2Code)	6.2:Online Safety – 3 weeks 6.3:Spreadsheets – 3 weeks (2Calculate)	6.3:Spreadsheets (cont) – 2 weeks (2Calculate) 6.6:Networks – 3 weeks	6.5:Text Adventures – 5 weeks (2Code, 2 Connect)	6.4:Blogging – 5 weeks (2Blog)	6.7:Quizzing – 6 weeks (2Quiz, 2 DIY, Text toolkit, 2Investigate)