Curriculum Policy:	**Computing**
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Intent

At Cleves, we aim to empower our students to be confident and responsible digital citizens by providing them with a solid foundation in computing concepts, skills, and knowledge. Through engaging and hands-on learning experiences, our students will learn to use technology safely and effectively to communicate, create, and solve problems. Our computing curriculum not only meets the national curriculum requirements but goes above and beyond to provide opportunities for our students to develop their computational thinking, digital literacy, and coding skills.

We strive to ensure that all students have access to the technology and resources required, and that they leave our school with the skills they need to succeed in an increasingly digital world.

Implementation

To meet our vision for computing at Cleves, we need to take several actions, including:

Provide students with opportunities to engage in hands-on, collaborative, and project-based learning activities that allow them to apply their computing knowledge and skills to real-world problems.

Provide students with access to a range of technology resources, including computers, tablets, and other digital devices, as well as software and online resources that support the curriculum.

Ensure that teachers have the necessary knowledge and skills to teach computing effectively, and provide them with ongoing professional development opportunities to keep them up to date with the latest technological developments and teaching strategies.

Incorporate e-safety education into the computing curriculum and ensure that students are aware of the potential risks and dangers associated with using technology, and how to use it safely and responsibly.

Continuously evaluate and improve the computing curriculum and teaching methods, by using data and feedback from students, teachers, and other stakeholders to identify areas of strength and areas that need improvement.

Ensure that the curriculum is aligned with the latest technological developments and trends and that the school has appropriate policies and procedures in place to ensure the safety, security, and confidentiality of student data.

Impact

Our curriculum for Computing at Cleves is designed to provide children with the foundational knowledge, skills, and understanding they need to become confident and responsible digital citizens. The curriculum is intended to have a positive impact on children by helping them to:

Develop their computational thinking and problem-solving skills, which are transferable to other areas of their lives.

Improve their ability to understand and use technology effectively and safely, and to appreciate the benefits and opportunities that technology provides.

Enhance their communication, creativity, and collaboration skills by using technology to express themselves, create digital content, and work with others.

Increase their digital literacy and understanding of how technology is used in the world around them, including how to evaluate and use digital resources appropriately.

Develop their e-safety awareness and skills to protect themselves from the potential risks and dangers associated with using technology.

Prepare them for future education and career opportunities in a world that is increasingly digital.

Encourage children's curiosity and willingness to explore, experiment, and take risks with technology, which can have a positive impact on their overall learning and development.

Overall, the curriculum is designed to equip children with the skills they need to navigate the digital world and to be able to take advantage of the opportunities it offers.

Equality, Diversity & Inclusion
All pupils will be given equal access to the entire Computing curriculum, including projects and educational visits. Where required, pupils with SEND will be provided with additional support in order to fully engage with the Computing curriculum. Where it is inappropriate for a pupil to participate in a specific lesson because of reasons related to any protected characteristics, the lesson will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary. It is important that as potential Computing pioneers of the future, our students leave education with a well-defined moral and ethical compass to enable them to shape a desirable digital world that is inclusive of all. The school aims to provide more academically able pupils with the opportunity to extend their computing studies by deepening their understanding through problem solving, investigative work and computing research.

Cleves Primary School recognises the importance of Computing education in teaching pupils to use computational thinking and creativity to understand and change the world. This policy will ensure the school complies with the national curriculum and help pupils have a solid grounding in Computing, a positive attitude towards the changing digital age, and a strong understanding of everyday software and digital devices suitable for future work places.

The strands in Computing are:

- Programming
- Computational thinking
- Creativity
- Computer Networks
- Communication and Collaboration
- Productivity

This policy has due regard to all relevant legislation and statutory guidance including, but not limited to, the following:

- DfE (2013) 'National curriculum in England: Computing programmes of study'
- DfE (2017) 'Statutory framework for the early years foundation stage'

This policy operates in conjunction with the following school policies:

- Educational Visits and School Trips Policy
- Health and Safety Policy

Roles and responsibilities

The governing board will be responsible for:

- Ensuring a broad and balanced computing curriculum is implemented in the school.
- Ensuring the school's computing curriculum is accessible to all pupils.

The headteacher will be responsible for:

- The overall implementation of this policy.
- Ensuring the school's computing curriculum is implemented consistently.
- Ensuring appropriate resources are allocated to the computing curriculum.
- Ensuring all pupils are appropriately supported.
- Appointing a member of staff to lead on the school's approach to teaching computing.

The Computing lead will be responsible for:

- Preparing policy documents, curriculum plans and schemes of work for computing.
- Reviewing changes to the national curriculum and advising on their implementation.
- Monitoring the learning and teaching of computing, providing support for staff where necessary.
- Organising the deployment of resources and carrying out an annual audit of all computing resources.
- Leading staff meetings and providing staff members with the appropriate training.
- Advising on the contribution of computing to other curriculum areas.

Computing teachers will be responsible for:

- Acting in accordance with this policy.
- Liaising with the computing lead about key topics, resources and supporting individual pupils.
- Ensuring that all relevant statutory content is covered within the school year.
- Monitoring the progress of pupils in their class and reporting this during ELT meetings.
- Reporting any concerns regarding the teaching of the subject to the computing lead or a member of the SLT.
- Undertaking any training that is necessary to teach the subject effectively.

The National Curriculum

At Cleves, we run an impactful and creative Primary Computing curriculum however we use the national curriculum for Computing as the basis for our curriculum planning. We have tailored our curriculum to the local circumstances of our school, i.e. we make use of the technology suitable for our local community and environment.

Our curriculum planning is in three phases (long-term, medium-term and short-term). Our long-term plan maps the computing topics studied in each term during each key stage. The computing subject leader works this out in conjunction with SLT and teaching colleagues in each year group. In some cases, we combine the computing study with work in other subject areas, especially at Key Stage 2. At other times we arrange for the children to carry out a computing study independently, such as using digital devices at home to create presentations and displaying research finding.

All curriculum areas are designed as a progressive model where pupils build on previous learning through their knowledge and application of clear and concise composite goals. Pupils know more and remember more through rehearsal, which leads to a deep and secure knowledge of the key components. At Cleves we strive to deliver exceptional lessons where all children are expected to meet the learning objective and achieve mastery. We recognise the fact that there are children of widely different abilities in all classes and we provide suitable pathways for all children to achieve the learning objective. These pathways include:

• Adaption

• Support

• Deepening Understanding

• Lowest 20% Toolkit

Adaption: is the altering or changing of the task so it is accessible for SEND children. The adaption of task should take into consideration the learning objective, stage of computing learning the child is at and barriers to learning a child may encounter.

Support: Support is any resource which may assist a pupil in achieving the learning objective. This may take the form of assistance from an adult (teacher or teacher or teaching assistant), a modelled example of what is needed to succeed in the lesson or any other pictorial or concrete resource that can help the children achieve mastery.

Deepening Understanding: Children who have met the objective of the lesson can deepen their understanding of the component or composite goal by completing a task that encourages a child to apply or explain the knowledge and skills they have acquired.

Lowest 20% toolkit: These are strategies aimed at the lowest 20% children in your class. They are strategies to enable children working within the lowest 20% to access and meet the demands of our mastery curriculum. These strategies include; Live Modelling, Support or scaffold, variated questions, setting the 'Bigger Picture', key vocabulary, 1:1 support, 1:2 support and carefully planned independent learning time.

Foundation Stage

We teach Computing in the Nursery and Reception classes as an integral part of the topic work covered during the year. As these classes are a part of the Foundation Stage of the National Curriculum, we relate the computing aspects of the children's work to the objectives set out in the 'Statuary Framework for Early Years Foundation Stage 2021' which underpins the curriculum planning for children aged three to five. Computing makes a significant contribution to the of developing a child's knowledge and understanding of the world through activities such as taking and collecting pictures, recognising various digital devices, understanding the use of digital devices, using Bee-bot to code and program.

Key Stage 1

During Key Stage 1, pupils explore what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. They also begin to create and debug simple programs. They use logical reasoning to predict the behaviour of simple programs. In doing this, use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children taught and trained to recognise common uses of information technology beyond school and to 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

During Key Stage 2, pupils progress to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into

smaller parts. They use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Through test and trails and discussions, they use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. They grow their understanding in 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. Pupils become confident to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content such as researching and taking notes on the ancient Egypt. Pupils also partake in projects where they 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. Children are carefully made aware how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Assessment

Throughout the school, Computing will be taught both as a discrete lesson and cross-curricular. At our school we teach Computing to all children, whatever their ability. Computing is a part of the school curriculum policy. This helps to provide a broad and balanced education to all children. Through our Computing teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs.

Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. We assess the children's work in Computing by making informal judgements as we observe the children during lessons. Once the children complete a piece of work, we mark and comment as necessary. Once they complete a unit of work, we make a summary judgement of the work of each pupil in relation to the National Curriculum expected standards. We record the attainment grades on Educator and we use these to plan future work with that pupil, to provide the basis for assessing the progress of the child, and to pass information on to the next teacher at the end of the year. As well as this, the Computing leader will plan quizzes for each year group which will take place on the penultimate week of each half term. Teachers will use these quizzes to assess what knowledge the pupils have attained and will recap on any learning the teacher feels the children need to revisit in order to progress at the rate expected.

		Autumn		Spring		Summer	
		1ST Half Term	**2nd Half Term**	**1ST Half Term**	**2nd Half Term**	**1ST Half Term**	**2nd Half Term**
Year 1	**Units**	1.1 We are treasure hunters Solving problems using programmable toys	1.2 We are TV chefs *Filming the steps of a recipe*	1.3 We are digital artists Creating work inspired by great artists	1.4 We are publishers Creating a multimedia eBook about our achievements	1.5 We are rhythmic Creating sound patterns in Scratch Jr and GarageBand	1.6 We are detectives Using data to solve clues
		Programming	**Computational thinking**	**Creativity**	**Computer networks**	**Communication/Collaboration**	**Productivity**
	Progression	Unit 2.1 – We are astronauts Unit 2.2 – We are game testers	Unit 3.3- We are presenters Unit 3.4 - We are who we are	Unit 1.5 – We are storytellers Unit 2.3 - We are photographers Unit 2.4	Unit 2.3 - We are photographers Unit 3.3- We are presenters	Unit 2.1- We are astronauts Unit 4.3 - We are musicians	Unit 2.3 – We are photographers Unit 3.1 – We are programmers
Year 2	**Units**	2.1 We are astronauts Programming on screen in Scratch Jr	2.2 We are games testers Working out the rules for games	2.3 We are photographers Taking, selecting and editing digital images	2.4 We are safe researchers Researching a topic	2.5 We are animators Creating a stop-motion animation	2.6 We are zoologists Collecting data about bugs

		Programming	Computational thinking	Creativity	Computer networks	Communication/Collaboration	Productivity
	Progression	Unit 2.2 – We are games testers Unit 3.1 – We are programmers	Unit 4.1 – We are software developers Unit 5.1 – We are game developers	Unit 2.6 - We are zoologists Unit 3.3- We are presenters	Unit 3.3 – We are presenters Unit 3.6 – We are opinion pollsters	Unit 3.1- We are programmers Unit 3.2 - We are bug fixers	Unit 3.6 – We are opinion pollsters Unit 4.6 – We are meteorologists
Year 3	**Units**	3.1 We are programmers Programming an animation (AF1, AF3)	3.2 We are bug fixers Finding and correcting bugs	3.3 We are presenters Videoing a presentation against a green screen (AF1, AF3)	3.4 We are who we are Creating presentations about ourselves (AF1, AF2)	3.5 We are co-authors Producing a wiki– (AF1, AF3)	3.6 We are opinion pollsters Collecting and analysing data (AF1, AF2)
		Programming	**Computational thinking**	**Creativity**	**Computer networks**	**Communication/Collaboration**	**Productivity**

	Progression	Unit 3.2 – We are bug fixers Unit 4.1 – We are software developers	Unit 4.1 – We are software developers Unit 5.1 – We are g games developers	Unit 4.6 – We are meteorologists Unit 6.5- We are advertisers	Unit 4.4- We are bloggers Unit 6.3- We are publishers	Unit 4.4- We are bloggers Unit 5.4 -We are web developers	Unit 4.6 – We are meteorologists Unit 6.2- We are computational thinkers
Year 4	**Units**	4.1 – We are software designers. Developing a simple educational game. (AF1, AF3)	4.2 We are makers Coding for micro:bit (AF1, AF2)	4.3 We are musicians Creating a piece of music in GarageBand (AF1, AF3)	4.4 We are bloggers Sharing experiences and opinions (AF1, AF2)	4.5 We are artists Fusing geometry and art (AF1, AF3)	4.6 We are meteorologists Presenting the weather (AF1, AF2)
		Programming	**Computational thinking**	**Creativity**	**Computer networks**	**Communication/Collaboration**	**Productivity**

	Progression	Unit 5.1 – We are game developers Unit 6.1 – We are toy makers	Unit 5.1 – We are game developers Unit 6.1- We are toy makers	Unit 4.5 -developers Unit 5.6- We are VR designers	Unit 5.4 – We are web developers Unit 5.6 - We are VR designers	Unit 5.6- We are VR designers Unit 5.3- We are architects	Unit 6.2- We are computational thinkers Unit 6.4- We are connected
Year 5	**Units**	5.1 We are game Developers. Developing an interactive game	5.2 – We are cryptographers. Cracking codes (AF1, AF2)	5.3 We are architects Creating a virtual space (AF1, AF2)	5.4 We are web developers Making sense of the Internet and building a website	5.5 We are adventure gamers. Creating an interactive adventure using presentation software (AF1, AF3)	5.6 We are VR designers Experimenting with virtual and augmented reality (AF1, AF2)
		Programming	**Computational thinking**	**Creativity**	**Computer networks**	**Communication/Collaboration**	**Productivity**

	Progression	Unit 5.5- We are adventure gamers Unit 5.6 -We are VR designers	Unit 6.6- We are AI developers	Unit 5.4- We are web developers Unit 5.6 - We are VR designers	Unit 5.6- We are VR designers Unit 6.4- We are connected	Unit 5.6 -We are VR designers	Unit 6.6- We are AI developers
Year 6	**Units**	6.1 We are toy makers Coding and physical computing	6.2 We are computational thinkers Mastering algorithms for searching, sorting and maths	6.3 We are publishers Creating a yearbook or magazine	6.4 We are connected Developing skills for social media	6.5 We are advertisers Creating a short television advert	6.6 We are AI developers Learning about artificial intelligence and machine learning
		Programming	**Computational thinking**	**Creativity**	**Computer networks**	**Productivity**	**Communication/ Collaboration**