



**Rowde C of E Academy**

## **Computing Policy**

**Date agreed: October 2020**

**Review Date: July 2022**

## **National Curriculum Aims in Computing**

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.

### **1. Intent:**

At Rowde we strive for all children to become fluent in the fundamentals of Computing which will develop their confidence when interacting with technology in the real world beyond the school curriculum. Our vision is to support children in becoming creative, independent learners and ensure they develop a healthy relationship with technology. At Rowde we value and recognise the contribution that technology can make for the benefit of all pupils, staff, parents, governors and society. We strive to provide safe opportunities in computing to motivate, inspire and raise standards across the curriculum. We aim for everyone in our school community to be equipped with the digital skills to meet developing technology with confidence, enthusiasm and to prepare them for a future in an ever-changing world.

Children are taught to understand that technology is an integral part of modern life and the key to the future is to harness and understand technology's potential. Computing is a constantly evolving subject that involves solving complex problems, being able to collaborate with others, learn from mistakes and refine solutions.

We follow the Knowsley computing curriculum, which is designed to be easy to follow, and has logical sequenced steps that will equip all children with the essential skills and knowledge they need to use technology safely and creatively.

Here at our school we believe safety is paramount. We promote and model a balanced digital life, recognising that amongst the many positives that technology has to offer, risks exist and children need to be taught to manage their digital lives properly. Children are encouraged to use technology creatively, positively, responsibly and safely. The curriculum supports the key aims of the government's Internet Safety Strategy (Digital Literacy / UK Council for Child Internet Safety (UKCCIS) framework) of supporting children to stay safe and make a positive contribution online, as well enabling teachers to develop effective strategies for understanding and handling online risks. Linked to this, we provide termly information for parents to support their children's online work safely and responsibly.

### **The Computing Scheme Of Work**

The Knowsley Computing Scheme is a curriculum that meets the needs and interests of all learners. It contains a range of fun, exciting and creative activities, all based on the essential requirements of the computing program of study. It ensures full coverage of the National Curriculum and allows for a broad and deep understanding of the three areas of Computing: Computer Science, Information Technology and Digital Literacy.

These are the core digital skills that we believe children must possess if they are to meet our school's vision of independence, creativity and a healthy digital life;

- Children must have a basic understanding of coding and how the web works.
- Children must be able to evaluate online information and be social media savvy.
- Children must understand online safety rules and know how to report and block.
- Children must be proficient with word processing and be able to use cloud storage.
- Children must be able to create visually engaging content/presentations in order to present learning to others.
- Children must have experience of online collaboration and using communication tools.
- Children must be taught the concept of personal archiving and possess their own digital portfolio of work.

### **The Teaching Model**

The termly units are organised into a series of hour long whole-class lessons, with the children working together on the same lesson content at the same time. Every unit have reflection and assessment points, which ensures that all children can process and articulate the concepts within the lesson before moving to the next activity, with no pupil left behind. The children create their own digital learning journals that record their understanding and tell their own story of the content they create. These journals and the content the children create illuminate their progression as digital storytellers, problem solvers and showcase mastery of computing. The journals have the potential to be shared with parents and carers via Seesaw.

### **Planning and Delivering the Lesson**

When planning, teachers are able to ensure that children can build on their understanding, as each new concept is taught with opportunities for children to consolidate and reapply their skills and knowledge throughout the year. Each computing unit is planned to provide new challenges and variety, to ensure we keep the child's interest at a maximum. There is a strong emphasis on improving computing/digital vocabulary, core fundamental digital skills and computational concepts.

## **2. Implementation**

At Rowde, the requirements of the Computing Curriculum are taught through units of work, where the children have access to their own computer/laptop or iPad. The curriculum is carefully mapped out to ensure that pupils acquire knowledge, vocabulary and skills in a well-thought out and progressive manner, with each teacher following the Knowsley Computing Scheme of Work and progression document. The Knowsley scheme highlights the knowledge, skills and vocabulary for each year group and is progressive from year to year. New learning is based upon what has been taught before and prepares children for what they will learn next. Every unit has a clear end point and an end product which children work towards on their learning journey.

Our Computing units and progression model is broken down into four strands that make up our computing curriculum. These are Essential Skills, Computer Science, Information Technology and Digital Literacy.

**Essential Skills:** ensure the children have the core basic skills to use multiple devices, this is designed to promote independence.

**Computer Science:** underlines the knowledge and skills relating to computational thinking, coding, algorithms and networks.

**Information Technology:** underlines the knowledge and skills relating to digital communication, creating multimedia content and data representation/handling.

**Digital Literacy:** underlines the knowledge and skills relating to online safety and technology in society.

We participate in annual events such as national Computing week, safer Internet day, anti-bullying week and technology themed competitions. We invite experts to come into school for assemblies and workshops to allow children to be inspired and see how these skills can be transferred into careers.



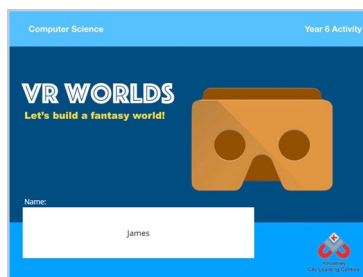
This is an example from the (CS) Coding section of a progression document which supports the subject leader when planning and ensuring progression and National Curriculum coverage;

<b>(CS) Coding:</b> Key Stage 1: Create and debug simple programs. Key Stage 2: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
The children learn:  to experiment controlling a range of 'toys' using remote controls and do this with purpose and direction.	The children learn:  to create a simple program and correct mistakes (debug).	The children learn:  to independently identify and fix a 'bug' in multiple programs.  to create a simple program that includes a repeat/times loop.  the difference between inputs and outputs.	The children learn:  to create their own sprite in Scratch/Scratch Jr.  about sequencing commands and adding a repeat command in a program.  how to refine/improve a program by using the repeat command.  how to create a variable.  to create a program that contains selection, inputs and outputs.	The children learn:  about the structure of a program and learn to plan in logical, achievable steps.  to write a complex program, incorporating features such as selection, inputs, repetition, variables and procedures.  attempt to debug their own programs and corrects/debugs errors in code.	The children learn:  to create their own complex game within Scratch or other block based coding app that uses variables, event handling, selection ("If" and "Then"), procedures and repetition (loops) to increase programming possibilities.	The children learn:  about complex programs and are encouraged to persevere when solving difficult problems even if the solution is not obvious.  about executing and adapting commands using a text-based language e.g. Python/JavaScript/Swift/Playground.

### 3. Impact

In our Computing curriculum the children revisit each objective several times, via different themes helping to ensure the best results are achieved. There are grids to support the monitoring of children's learning expectations. At Rowde we encourage discussions between staff and pupils to help the children best understand their progress and their next steps. We also encourage pupils to document their own learning in pupil journals. These journals can also be used to showcase and

celebrate computing work as well as providing evidence of the pupil's knowledge and digital skills.



*This is an example of a pupil journal in Year 6, which pupils access in Book Creator.*

We constantly monitor to ensure the children have learnt the things we've taught them and if they are struggling, we can introduce additional support the next time they encounter that objective. If children are keeping up with the curriculum, they are deemed to be making good or better progress.

We measure the impact of Computing through the following methods:

- Pupil discussions and interviewing the pupils about their learning (pupil voice).
- Pupil journals and assessment/feedback on content creation.
- Moderation staff meetings with opportunities for dialogue between teachers.
- Photo evidence of the pupil's practical learning.
- Pupil self-reflection.
- A reflection on standards achieved against the planned outcomes (progression/what to observe in learning).
- Learning walks and reflective staff feedback (teacher voice).
- Dedicated Computing leader time.
- Formative and summative approaches.

### **Cross-curricular Links**

Whenever possible and relevant, cross-curricular links are made and Computing skills are applied within other areas of the curriculum e.g. creating information booklets and posters as a result of research during English and creating graphs and tables in Mathematics. Efficient and appropriate use of Computing should be utilised to build subject knowledge being taught e.g. interactive white boards, laptops, iPads and a range of software. There are numerous opportunities to make and build cross circular links with art, mathematics, science and design and technology.

### **Special Needs**

All children are encouraged to participate in Computing activities, appropriate for their ability. All pupils learn in whole class lessons within the classroom to complete their Computing work. Teachers provide quality first teaching within the classroom and through this, differentiate to cater for the range of abilities in each class.

Disadvantaged pupils and those with SEND and EAL will receive additional support. This may include dedicated time with TAs and access to specialist resources and equipment where required. TAs will be deployed within lessons strategically so that they can assist with pupils who require additional help. Planning will be used to

identify any possible difficulties within the curriculum and will break down barriers to learning. Classrooms are organised so that pupils have full access to resources and equipment. They are provided with a rich and varied learning environment that will enable them to develop their skills and abilities.

### **Assessment and Record Keeping**

Assessment in the foundation subjects is completed through exemplification or outcomes of pupils following a unit of work. The principle form of assessment in the foundation subjects is formative, with the teacher making adaptations to subsequent lessons.

Teachers assess children in a variety of ways including, marking, observations, discussions and specific assessment activities. Evaluation of the weekly plans and end of unit summative assessments help to identify areas in need of future reinforcement. The subject leader, including Governors regularly review and quality assure the Computing curriculum to ensure that it is being implemented well and coverage and breadth and balance is adequate. Scrutiny of work is carried out during the year by the subject leader to ensure consistency and progression. Teacher's assessment and record keeping should follow procedures within the Assessment Policy and the Staff Handbook.

### **Resources**

Classes have access to laptops and tablets for their computing work. Teachers plan from the Knowsley Scheme of work using their interactive website for lesson plans and to ensure progression throughout the year. Children work in pairs and individually, depending on the task and outcomes needed. Children's computing work is kept in the Shared Pupil Drive, clearly labelled in class folders. This forms a record of progression and tasks achieved, as children move from class to class.

### **Equal Opportunities**

All children will be given equal opportunities to access the Computing curriculum. Our curriculum will be delivered in accordance with the Equality Act 2010. Our aim is that every child will access the curriculum in its entirety, with content, access and expectations adapted for pupil's developmental needs.