Computing Policy

INTENT

Rationale

At Lyng Primary School we encourage computational thinking and creativity in their understanding of the digital world through practical experiences of using technology. We equip the children to be able to use information technology to create programs, systems and a range of digital content. Through the progressive curriculum, the children are able use their previous knowledge and apply it in different scenarios to solve problems. The children are encouraged to be curious about technology in a way which instills a lifelong passion for learning about programming and other information technology which will aid them in their future in a connected world. We strive for the children to become digitally literate and know how to express themselves safely, respectfully, confidently and responsibly with technology.

Bert our Computing expert

Following the Chris Quigley curriculum enables teachers to recognise the key characteristics of programmers in their lessons. These are then presented through Lyng Learning Animals to allow the children to access these in a fun and engaging manner. As chose by the School Council, Bert the slug is our expert programmer in school.

Our Computing Curriculum is designed to allow pupils to develop the following key characteristics for a programmer:

KS1	KS2
I can follow simple codes to achieve an outcome	I can follow algorithms to achieve an outcome
I can create simple codes to achieve an outcome	I can create algorithms to achieve an outcome
I can connect with others	I can connect with others safely
I understand that some devices are connected	I can explain why I need to act safely and respectfully online
I can use devices to communicate ideas	I understand that some devices are connected
I can collect and organise data	I can use different applications and devices to communicate ideas

	I can collect, organise and manipulate data effectively

IMPLEMENTATION

Planning

We follow the Twinkl PlanIt scheme of work alongside Kapow units. These chosen as they give the children a range of coding skills using different software but also provides them with IT skills required to use a computer. The lessons link to the Chris Quigley Milestones so we can ensure the skills the children are learning are progressive and prepare them for the future.

All resources and PowerPoints needed are ready prepared or listed for the lessons. This was done in an effort to reduce teacher workload. There are some lessons where scaffolding resources may be needed to tailor to the children or to give the lesson and skill more purpose to other areas of the curriculum. For example, the 'Computer Art' unit which Year 2 learn about has been adapted so that the art they produce links to their topic of 'Bostin' Black Country.

Online Safety units are also in a folder on the shared drive and class teachers complete at least 1 lesson per half term. This is to ensure both staff and child online safety knowledge is up to date. We also ensure that these link to the 'Education for a Connected World' documentation to provide the children with a well-rounded online safety curriculum. We combine this with the National Online Safety website which provides updated curriculum content at age appropriate levels.

Through the year, in addition to Online Safety lessons, we take part in Safer Internet Day to show our whole school involvement in the wider community of online safety. We also plan an annual 'Safeguarding Week' which has a day where parents will also be involved to support them with Online Safety at home to ensure they know what they can do to help their children.

Efforts are made to ensure regular LOTC (Learning outside the classroom) opportunities are planned for where appropriate.
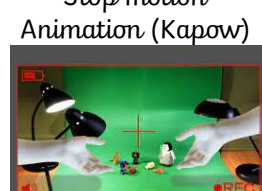
Early Years Foundation Stage (EYFS)
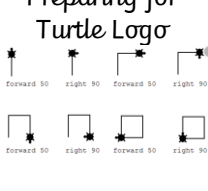
Computing is delivered in Reception as part of Understanding the World learning outcomes. It is an integral part of text led work through child-initiated and adult led activities. The children are given the opportunity to explore technology in their own lives through use of devices such as camera, Beebots and programmable toys.

KS1

Year 1

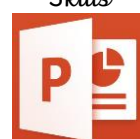| Programming ScratchJr	Programmable Toys (Kapow)	Computer skills	Painting (Twinkl) Digital Images (Kapow)	Word Processing	Data Handling (Kapow)
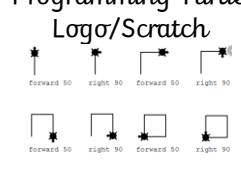
Year 2

Preparing for Turtle Logo	Programming Turtle Logo/Scratch	Presentation Skills	Computer Art	Stop motion Animation (Kapow)	Data handling (Kapow)
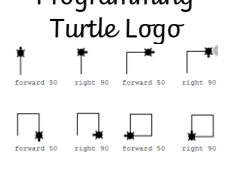
KS2

During KS2 the children will be deepening their understanding by developing and applying skills from previous years in different situations.
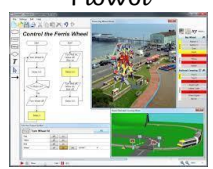
Year 3

Programming Turtle Logo/Scratch	Drawing and publishing	Online searchers and surfers	Word processing	Presentation Skills	Database (Kapow)

Year 4

Programming Turtle Logo	Animation	Scratch quiz	Word processing	Communication and collaboration	Data handling (Weather)

Year 5

Programming Scratch	Programming: music	3d modelling	Flowol	Robotics	Databases (Kapow)

Year 6

Spreadsheets	Programming Scratch	Network	Robotics	Film	Kodu

Lyng Computing Learning Journey EYFS to KS2
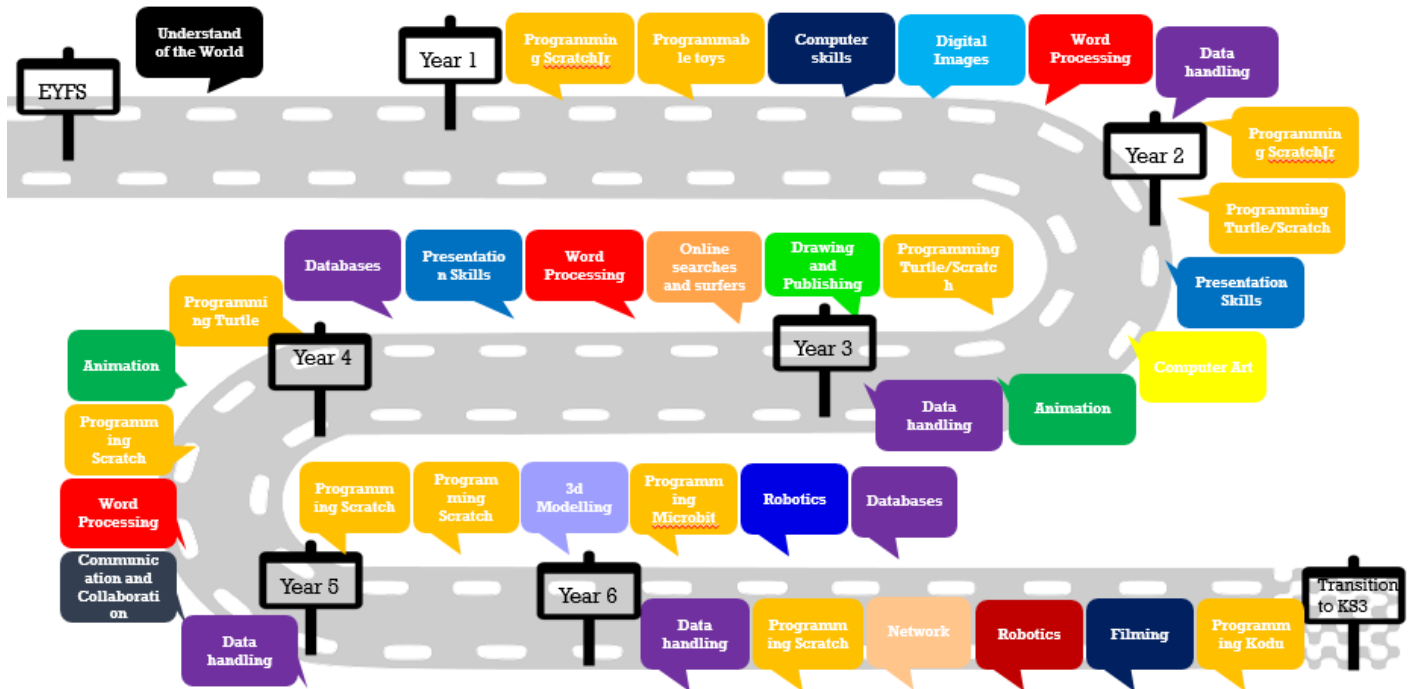
Progression of skills

The Chris Quigley Essentials Curriculum which Lyng Primary School has adopted includes all National Curriculum subjects and through this approach the key computing and information technology skills are grouped under four key concepts:

- Code
- Connect
- Communicate
- Collect

These are then broken down further into three milestones. Milestone 1 for Year 1 and Year 2, Milestone 2 for Year 3 and Year 4 and Milestone 3 for Year 5 and Year 6. In each milestone, pupils demonstrate their learning under 3 different cognitive domains which they are assessed against:

BASIC	ADVANCING	DEEP
Low-level cognitive demand. Involves following instructions.	Higher level of cognitive demand. Involves mental processing beyond recall. Requires some degree of decision making.	Cognitive demands are complex and abstract. Involves problems with multiple steps or more than one possible answer. Requires justification of answers.

Progression of knowledge and retention quizzes

- All year groups start with programming using Scratch or ScratchJr (other than Y6 due to links with maths)

Year 1

- Programmable toys are used to applying the coding skills practiced in the previous unit to physical programming.
- Basic computer skills so developed so the children are able to access the other units later in the year. Lots of our children are able to use an iPad/tablet as they have them at home, but struggle with typing and mouse control as they don't use computers or laptops.
- The Painting unit requires the children to use mouse skills to create work which builds on the computing skills they have just been learning.
- Our children have not all had access to computers so word processing is required. It is introduced later into year 1 when more children are able to read and write, and they have more knowledge to write.
- Data handling is towards the end of the year as the lessons have an LOTC link as they go looking for minibeasts – the summer months should allow for a wider variety. They will have also experienced more learning in maths lessons linked to data handling – pictograms.

Year 2

- Preparing Turtle Logo is introduced at the beginning of Year 2 to build on coding skills form Year 1 and develop them ready for when the children begin using Scratch software with additional blocks of code in unit 2.
- Presentation skills is the next unit which introduced PowerPoint software. A more complex software than Word, which is why it is placed later in the year. It also helps children develop their typing skills that were introduced in Year 1.
- Computer Art has been placed next to progress the children's use of 'Paint' from Year 1 and show different art based features on varying software (Microsoft Word/Paint)
- Stop Motion follows this as an animation link to digital art.
- Data handling is towards the end of the year to allow the children to have a better understanding of maths and make real life links.

Year 3

- Building on Year 2 skills, Year 3 begin with turtle logo where they begin abbreviating code to progress further into becoming efficient programmers.
- Drawing and Desktop publishing allows the children to refine skills from Year 2's computer art unit and try other software techniques.
- The children now begin using the internet to research and see how different key words can be searched to provide different responses. The children need to have an understanding of using the internet safely and how words can impact results.
- Word processing is building on typing skills that have been started in Year 1 with typing sentences about a topic and Year 2 where the children have to contribute to a blog.

Year 4

- 2 units of Year 4 centre around Turtle logo and Scratch so that the children are reflecting on the skills they have previously learned and applying those skills and new ones to the unit.
- Year 4 introduces the children to a more complex piece of software to animate – Pivot Animation and the children have to create stop motion animations.
- Word processing now builds on skills like aligning text and adding bullet points/numbers, to help the children add tables and check spelling.

- Communication and collaborating is a unit that introduces children to email so the children need to have a good understanding of online safety related to safety, responsibility and respectfulness.
- The data handling unit links to weather so having the unit in the summer months helps when children need to measure rainfall, hours of sunshine and temperature so they are able to experience a wider range of variables.

Year 5

- For the first unit of Scratch, Year 5 create a game which needs costume changes, backgrounds changes and a variable to keep score.
- The second unit enhancing skills learned to enable to children to use sounds in their projects linked to their learning in other areas.
- SketchUp has been placed later in the year to try and link with the topics that the children will be learning about. The children use the software to create a house/room which is 3d.
- Flowol is placed prior the the robotics unit as it robotics software which enables the children to explore automatic systems that are used in the real world.
- For the robotics unit – linking to STEM, the children will begin to use physical objects to create robots or mechanisms that can be programmed. The project use software similar to Scratch to enable the movements.

Year 6

- Year 6 will then begin using spreadsheets to plan an event. This gives the children experience of using different Microsoft Office software and links with their maths skills.
- Scratch animation helps build on the skills that have been learned when they were using Pivot and the Scratch skills such as costume and background changes, to make short animations based on their current topic.
- For the robotics unit – linking to STEM, the children will begin to use physical objects to create robots or mechanisms that can be programmed. The project use software similar to Scratch to enable the movements.
- Film making has been placed next as the children will have written a play script in their topic lesson which is going to be the stimulus for this unit. The children will enhance the plan to include filming techniques, interviews and then edit to create their own short films. May be adapted based on end of year production
- Programming using Kodu provides the children with the chance to code with a different software to Scratch.

Retrieval quizzes are then used in lessons to encourage the pupils' retention of information over time.

CPD
Where appropriate, members of staff, usually the coordinator, are sent on relevant courses. The content of these courses is then shared with the rest of the teaching staff. The impact of this training is then monitored and recorded through the subject leader's leadership log.

Staff meeting have been carried out to share ideas on what could be done to incorporate Cross Curricular computing and following learning walks, good practice was shared with other staff. In addition to the CPD staff are encouraged to seek help from computing lead.

Marking and feedback

As the work that the children complete is on the computers or a practical activity the children, all receive verbal feedback throughout the lessons. During lessons which take place on the computer, examples of work can be checked via the shared area. Work completed practically is photographed as evidence. Work from a high attainer, middle attainer and a lower attainer is printed off and stuck into a book as evidence to show progression in the unit and how different learners have achieved in the lesson. Experts are named and scaffolds/challenges are stuck in.

Resources

There are resources in school to enhance the teaching all the computing unit that we study. We keep these resources in a central location for all staff to access. The school regularly purchases new technology and devices to provide the children with more experience and a range of input and output methods.

Monitoring

Computing is part of the foundation subject monitoring cycle, as part of this cycle lessons and evidence are monitored. Pupil voice is also captured.

Observations are to gauge the quality of teaching and learning taking place at Lyng. Areas to develop are then identified and suggestions given and shown on how to improve. During follow-ups, we are able to see AfD being acted upon.

Alongside drop ins, evidence is monitored. Using this information and checking the tracker, we are able to see skills being taught and applied by the children.

Pupil conferencing is also conducted to gain a better understanding of the children's perspective on computing lessons and feedback can be shared with staff.

SEND

At Lyng Primary we ensure that all pupils have access to a broad and balanced curriculum. SEND pupils may be supported through the practical activities which can be done to achieve the learning intention. As much of the curriculum is based on programming and using 'Scratch' type software, handouts of script which are colour coded are provided which aid the independence of the SEND children. Additional modelling using the screen in the suite is used to visual show what might need to be done. Alongside this, class experts are also used to support children who might need additional support. Where possible visits and trips are organised to provide pupils with hands on experiences of the units which are being studied.

G&T

Gifted and Talented pupils are identified and recorded by class teachers on the whole school template The record include those who are considered Gifted and Talented with regard either their historical knowledge and/or skills. These are the pupils who teachers regularly challenge through their teaching and application of 'Step On' vocabulary as part of our Word Aware approach, through becoming expert programmers in lessons and sharing their understanding with the class. They are also challenged through killer questions that include questions or activities that challenge the pupil's thinking.

IMPACT

Assessment and Moderation

Children's progress in computing is assessed through success criteria in lessons with the progress against these informing the feedback of that child's work. In addition to this at the end of every term the class teacher is expected to upload judgements of their progress and attainment to the SIMS tracker. Progress and retention of knowledge is monitored through regular quizzing and revisiting skills and vocabulary through the word wallets in every classroom.

Children are assessed as one of the following:

Code	Meaning	Support
U	Unable to assess	Not sufficient evidence to make a judgement.
E	Emerging	Heavily scaffolded – accessing the objective with resources.
D	Developing	Uses age appropriate scaffolding.
S	Secure	Independent application.
M	Mastered	Application outside the lesson independently.

Moderation of computing work occurs on a termly basis. Children's work is moderated against the BAD grids as per the Chis Quigley approach.

Celebration of learning through celebration assemblies and museum artefacts

Impact is measured through the learning journey on computers and by pupil voice. The journey should reflect both the progress in skills and knowledge.

The impact of the computer leader is monitored through the leadership log template which is shared with a senior leader on a half termly basis.