The Curriculum Intent and Implementation for Computing
'Small Village, Big Horizons'

On the Road to Emmaus – Luke 24: 13 – 35
Two travellers are transformed and enriched by sharing their journey with a guide. We view our work to be similar in making a difference to future lives. We travel together on our journey of transformation and commit our school to always being supportive, nurturing and challenging.

Our distinctive Christian vision continues to underpin our aspiration to provide the highest educational standards possible in order to realise the potential of everyone in our school.
The school has a clear Christian vision, which is rooted in our statement: Two travellers are transformed and enriched by sharing their journey with a guide. We view our work to be similar in making a difference to future lives. We travel together on our journey of transformation and commit our school to always being supportive, enriching and challenging.

Intent

The aim of our Computing curriculum is to prepare the children for the future, both in education and in life. We want children to be masters of technology and not slaves to it. Our curriculum has deep and broad coverage and content and is brought to life through rich and vibrant cultural experiences – the cultural capital.

The ambitions for our curriculum:

- **High aspirations permeate across the school**
- **The school offers a host of cultural experiences and enrichment opportunities**
- **Our pupils develop a love of life-long reading**
- **British Values are an intrinsic part of the school**

We use the strap-line, "Small Village, Big Horizons" to articulate our vision for the school. This is because Lincolnshire is an isolated area in terms of transport, culture and location. We want our curriculum to expand the experiences and ambitions of our pupils.

At the Emmaus Federation the principal aim of Computing is to prepare our learners for their future by giving them the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. Knowledge and understanding of Computing is of increasing importance for children's future both at home and for employment.

Our computing curriculum focuses on a progression of skills in digital literacy, computer science, information technology and online safety to ensure that children become competent in safely using, as well as understanding, technology.

The intent of our computing curriculum is to deliver a curriculum which is accessible to all to ensure that all children have a deeper understanding of the importance of information technology; from where it is within our own lives to being able to program a micro-controller to perform a variety of functions.

Examples of the Intent for Computing in Practice	
High aspirations	• Using the National Centre for Computing Education – Teaching Computing curriculum teachers are more confident teaching computing to a deeper level. • High standards of expectations which are the same as core subjects. • Knowledge organisers ensure children are clear about their learning and the associated vocabulary for a deep understanding. • Questioning and allowing time for critical thinking throughout the lesson that extend knowledge and tests for reliability. • Encourage children to embrace challenge, question themselves and enjoy working hard.
Cultural experiences and enrichment	• Virtual Reality visit for Key Stage 2 to enhance learning across topic and Religious Education. (Sutterton and Swineshead). • E-Safety council – newly established council to aid with disseminating new information to their classes with regards to E-Safety. (Sutterton and Swineshead). • Safety Internet Day – activities throughout the day to help children understand the importance of staying safe online. (Sutterton and Swineshead).
Life-long love of reading	• Fiction books and texts linked to a variety of e-safety topics.
British Values • **Democracy** • **Rule of Law** • **Individual Liberty** • **Tolerance & Respect**	• Children's views count and that everyone is encouraged to value each other's opinion. • Children are encouraged to work together on projects to work out problems (debugging). • Computing is embedded across the curriculum as a tool to enhance learning. • E-safety lessons are taught at the start of every computing unit and taught as a unit in PSHE. • E-safety awareness sessions for pupils and parents.

Curriculum Knowledge

The computing curriculum is carefully structured and sequenced to ensure coverage and progression as the children move through the school. The curriculum is broken down into knowledge building blocks as the knowledge is sequenced and the built upon over time: what has been taught before and what the pupils' need to know to reach their end point – **spiral progression**. This is set out in more detail in our termly plans. The enquiry questions and the key vocabulary are implemented in our knowledge organisers and brought to life on working walls and within learning objectives for the lesson.

There are specific curriculum areas of knowledge that build together to enable our children to become successful masters of technology. These are:

1. Computing systems and impact of Technology
Understand what a computer is and how its constituent parts function together as a whole. Also, to understand how individuals, systems and society as a whole interact with computer systems.

2. Networks
Understand how networks can be used to retrieve and share information and how they come with associated risks.

2. Creating Media
Select and create a range of media including text, images, sounds and video.

3. Data and Information
Understand how data is stored, organised and used to represent real-world artefacts and scenarios.

4. Programming
Create software to allow computers to solve problems.

5. Coding
The process or activity of writing computer programs.

Implementation

The computing curriculum is carefully structured and sequenced to ensure coverage and progression as the children move through the school. The curriculum is broken down into knowledge building blocks and the knowledge is sequenced and then built upon over time: what has been taught before and what the pupils' need to know to reach their end point - spiral progression. The application of knowledge for each area of the computing curriculum is identified and how the knowledge is applied across the whole of the curriculum so our children leave our school 'knowing more and being able to do more'.

Our computing curriculum follows the National Centre for Computing Education Teaching Computing scheme. Through this curriculum the children are given opportunities to explore computing not just through a laptop but through other technological equipment: Beebots, data loggers, crumble microcontrollers and micro-bits.

We have identified the application of knowledge that we will implement to enable our pupils to become successful masters of technology. This is set out in more detail in our termly plans.

- **Investigation**
- **Expression**
- **Interpretation**
- **Reflection**
- **Commitment**
- **Application**
- **Discernment**
- **Analysis**
- **Synthesis**
- **Evaluation**

The Application of Knowledge:
To enable our children to become successful masters of technology, we have identified the application of knowledge that will be needed. The application of knowledge for each area of computing studied is identified and this knowledge can then be applied across the whole curriculum so our children leave our school 'knowing more and being able to do more'. This is set out in more detail in our termly plans.

- **Investigation**
- **Expression**
- **Interpretation**
- **Application**
- **Analysis;**
- **Synthesis**
- **Evaluation**

INVESTIGATION – in computing this includes:
- asking relevant questions;
- using different approaches to problem solving, how something can be created or works debugging.

EXPRESSION – in computing this includes:
- the ability to explain processes, concepts and practice, rituals and practices;
- the ability to identify and articulate computational thinking.

INTERPRETATION – in computing this includes:
- the ability to understand computing theories;
- the ability to suggest meanings.

REFLECTION – in computing this includes:
- the ability to reflect on why their process may not have worked and use resilience to problem solve.

APPLICATION – in computing this includes:
- making the association between computing, maths, technology and science.
- the ability to apply a range of computational knowledge and skills in a variety of contexts and subjects.

DISCERNMENT - in computing this includes:
- seeing clearly for themselves how they use computing in their daily lives and in future employment.

ANALYSIS – in computing this includes:
- distinguishing between prediction and fact;
- distinguishing between the feature's methods of different investigations.

SYNTHESIS – in computing this includes:
- linking digital literacy, computer science and information technology together to deepen understanding of a variety of processes.

EVALUATION – in computing this includes:
- the ability to evaluate how a computing system works.
- understand what can be done differently and what impact this may have on the outcome.

Processes for Effective Learning in computing

1. Identify questions
These covers identifying questions and defining enquiries, using a range of methods, media and sources. It includes the skill of investigation.

2. Plan and carry out enquiries
This includes carrying out and developing enquiries by gathering, comparing, interpreting and analysing a range of information, ideas and viewpoints.

3. Present and explain findings
This involves expressing and explaining ideas and feelings, suggesting interpretations of findings and analysing the range of information.

4. Empathise and reflect
This involves using empathy, critical thought and reflection to consider their learning and how they feel about it.

5. Evaluate
This involves evaluating their learning and considering how it might apply to their own lives.

Personal Qualities for Effective Learning in computing

- **Independent enquirers**
- **Creative thinkers**

- **Team workers**
- **Reflective learners**
- **Self-managers**
- **Effective participators**

The Daily Implementation of computing at the Emmaus Federation

- Knowledge Organisers: Children have access to key knowledge, language and meanings to understand computing and to use these skills across the curriculum.
- Subject specific vocabulary: Identified through knowledge organisers and highlighted to the children at the beginning of and during lessons.
- Use of information technology: A range of technological equipment is available to specific year groups for the children to apply their knowledge of different operating systems to new technology.
- Teachers assess children's work in computing by making formative and summative assessments throughout the school year. All pupils are encouraged to evaluate their own learning and to suggest ways to progress further with their declarative and process knowledge.
- Teachers record the progress made by the children against the learning outcome for each unit: below expected for age, at expected, or greater depth. Teachers record this information on our bespoke assessment tracker on OTrack. These records also enable the teacher to make an annual assessment of progress for each child, and to pass this assessment information on to the child's next teacher at the end of the year.
- Progress in computing is reported to parents.

Impact

Computing will:
- Develop increasingly independent enquirers;
- Develop increasingly critical thinkers;
- Develop the use of skills in computational thinking, information technology and problem solving;
- Increase their understanding of the technological world around them and how it fits into their lives