# Computing Curriculum Statement

***Our curriculum is designed for sustained memory. It is inspired by the work of Chris Quigley.***

## Intent

Computing is an integral part of the National Curriculum and is a key skill for everyday life. Computing now includes such a large range of software and hardware that can be used to acquire, organise, store, manipulate, interpret, communicate and present information. At Gorse Covert Primary School we recognise that children are entitled to quality hardware and software and a structured and progressive approach to the learning of the skills needed to enable them to become computing proficient. Through our Computing curriculum we aim to provide opportunities to develop children's knowledge and understanding of the following areas:-

● Code
● Connect
● Communicate
● Collect

A coherently planned academic curriculum underpinned by the curriculum driver, our academic curriculum sets out:

a) A clear list of the breadth of topics that will be covered;
b) The 'threshold concepts' children should understand;
c) Criteria for progression within the threshold concepts;
d) Criteria for depth of understanding.

The diagram below shows the model of our curriculum structure:

| a | Curriculum breadth for Years 1 & 2 | | | | Curriculum breadth for Years 3 & 4 | | | | Curriculum breadth for Years 5 & 6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| b | Threshold Concepts | | | | | | | | | | |
| c | Milestone 1 | | | | Milestone 2 | | | | Milestone 3 | | |
| d | B Year 1 | A Year 2 | D Year 2 | | B Year 3 | A Year 4 | D Year 4 | | B Year 5 | A Year 6 | D Year 6 |

a) The **curriculum breadth** for each year group ensures each teacher has clarity as to what to cover, as well as providing the key knowledge needing to be taught.

b) **Threshold concepts** are the key disciplinary aspects of each subject, the essence of the subject. They are chosen to build conceptual understanding within subjects and are repeated many times in each topic.

c) **Milestones** define the standards for the threshold concepts. They identify progression in the threshold concepts.

d) **Depth:** we expect pupils in year 1 of the milestone to develop a **Basic (B)** understanding of the concepts (the fundamental foundations) and an **Advancing (A)** or **Deep (D)** understanding in year 2 of the milestone. Phase one (Years 1, 3 and 5) in a milestone is the knowledge building phase that provides the fundamental foundations for later application. Learning at this stage must not be rushed and will involve a high degree of repetition so that knowledge enters a child's long term memory.

**Basic (B)** 'Acquiring' skills: name, describe, follow instructions, complete tasks, recall information, ask basic questions, use, match, report, measure, list, illustrate, label, recognise, tell, repeat, arrange, define, memorise.

**Advancing (A)** – 'Practising' skills: apply skills to solve problems, explain methods, classify, infer, categorise, identify patterns, organise, modify, predict, interpret, summarise, make observations, estimate, compare.

**Deep (D)** – 'Deepening understanding' of the skills: solve non-routine problems, appraise, explain concepts, hypothesise, investigate, cite evidence, design, create, prove.

## Importance of Computing

In the fast-paced, electronic world that the children now live in, computing gives children immediate access to a rich source of materials. It is a great tool for motivating and enthusing children and can help them to focus and concentrate better. Technology helps children to present information in new ways which help them to understand access and use it more readily. Computing ensures that children 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.

## Computing in Early Years

It is important in EYFS to give children a broad, play-based experience of Computing in a range of contexts, including outdoor play. Computing is not just about computers. EY learning environments should feature Computing scenarios based on experience in the real world, such as in role play. Children will recognise that a range of technology is used in places such as homes and schools. They will also select and use technology for particular purposes. Children gain confidence, control and language skills through opportunities to explore using non-computer based resources such as controllable toys, telephone sets and listening centres. Recording devices can support children to develop their communication skills.

# Implementation

Our curriculum design is based on evidence from cognitive science; three main principles underpin it:

1. Learning is most effective with spaced repetition.
2. Interleaving (deliberate leaving and coming back to through beginning with exposure then keep returning to explore further) helps children to discriminate between topics and aids long term retention.
3. Retrieval of previously learned content is frequent and regular, which increases both storage and retrieval strength.

In addition to the three principles we also understand that learning is invisible in the short term and sustained mastery takes time. Some of our content is subject specific, whilst other content is combined in a cross-curricular approach. Continuous provision, in the form of daily routines, replaces the teaching of some aspects of the curriculum and, in other cases, provides retrieval practice for previously learned content.

## Management of Computing

Governors and the Headteacher will ensure:

- That Computing is taught as part of the school's basic curriculum, following the school's scheme of work
- All pupils make progress in achieving the learning objectives of the Computing curriculum
- The subject is well led and effectively managed and that standards and achievement in Computing and the quality of the provision are subject to regular and effective self evaluation
- Teachers are aware of Computing's contribution in developing childrens' understanding of technology, software and keeping safe online and its impact on their lives and society.

The STEM team will monitor and evaluate the teaching and learning of the Computing curriculum.

# Impact

## Assessment

The impact of our curriculum is that by the end of each milestone the vast majority of children have sustained mastery of the concept. That is, they remember it all and are fluent in it. Some children have a greater depth of understanding. Children have developed a connected understanding of our curriculum content. We track carefully to ensure children are on track to reach the expectations of our curriculum.

Completed computing work does not always need to be printed out and can be saved to individual pupil's folders. Children's folders will move through school with them so

there is a continuous record of their time at Gorse Covert Primary School. Sometimes work may be printed and filed within the subject folder.  This work should **not** be sent home at the end of each year.

During subject monitoring the children will have access to their folder to act as a prompt during pupil interviews about the subject.  The impact of our curriculum is evident through a variety of sources, such as their A4 wallet, personal electronic folder, cross curricular and displays around school. However, the most accurate impact will be measured by talking to the children about what they know and can do. The STEM team meet with children termly for this purpose, to see what they can remember from the previous term and before.  These findings are then fed back to teachers to inform future planning so they can consolidate 'forgotten' learning if necessary.