Computing

"Computer science empowers students to create the world of tomorrow." (Satya Nadella, CEO of Microsoft)

Intent - We aim to...

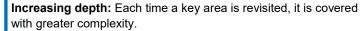|				
Prepare our pupils for a rapidly changing world through the use of technology.	Provide our pupils with the knowledge and skills of **computer science**, including the principles of information and computation, digital systems, and programming.	Equip our pupils to use, evaluate and apply **Information Technology** to solve problems and become content creators.	Ensure that pupils become **digitally literate** - responsible, competent, confident and creative users of information and communication technology.	Equip pupils with the **online safety skills** and awareness of risk linked to: conduct, content, contact and commerce that will enable them to participate effectively and safely online.

Implementation - How do we achieve our aims?

A consistent approach

At The Good Shepherd, we use the Kapow programme of study to ensure a consistent approach to the teaching of computing. The Kapow scheme has been designed as a spiral curriculum with the following key principles in mind -

Cyclical: Pupils revisit the five key areas throughout EYFS, KS1 and KS2.

Increasing depth: Each time a key area is revisited, it is covered with greater complexity.

Prior knowledge: Upon returning to each key area, prior knowledge is utilised so pupils can build on previous foundations, rather than starting again.

Key concepts

Computing systems and networks	Programming	Creating media	Data handling	Online safety
Identifying hardware and using software, while exploring how computers communicate and connect to one another.	Understanding that a computer operates on algorithms, and learning how to write, adapt and debug code to instruct a computer to perform set tasks.	Learning how to use various devices — record, capture and edit content such as videos, music, pictures and photographs.	Ensuring that information is collected, recorded, stored, presented and analysed in a manner that is useful and can help to solve problems.	Understanding the benefits and risks of being online — how to remain safe, keep personal information secure and recognising when to seek help in difficult situations.

E-Safety

Every year group, from Year 1 to Year 6, study a progressive online safety module using the Kapow programme of study. In EYFS, e-safety is explicitly taught through the use of stories and role-play, at least once a term.

In addition to this, e-safety is covered through the PSHE curriculum during Anti-bullying Week in November and Safer Internet Day in February. We use the Safer Internet Day materials to deepen our pupils understanding based on current themes.

Parents have been invited to download the 'Safer Schools' APP to help them to enhance their children's online safety at home. We also send out regular online safety information in newsletters to parents to support their understanding of current e-safety concerns, and how to monitor popular games to ensure their children are

Strong Foundations

In Nursery, technology and computing involves exploring objects through play. Mechanical toys, objects that encourage the exploration of cause and effect and imaginative play resources all aid the children's understanding of computing and its real-world applications. The Nursery pupils also have weekly access to a range of age-appropriate apps on the iPads.

In Reception, the Kapow EYFS lessons are a natural precursor to the Year 1 Computing modules. They are play-based, hands-on and fun. Regular adult inputs lead to child-led exploration of enhanced resources in provision, during discovery time.

Implementation (continued)

Timetabling

In EYFS, computing opportunities are always available through the continuous provision. These are enhanced through adult inputs and specific resources linked to the unit being studied or learning focus. In KS1 and KS2 computing is taught explicitly every other week in 5 module blocks. Computing is also used to enhance other curriculum areas.

Recording work

In EYFS, some computing activities will be recorded in the pupils' learning journals or books. In KS1 and KS2, each unit of work has a computing booklet, containing the topic knowledge organiser, the objectives for each lesson, key resources or information needed to complete the tasks. 'Tech Talk' key vocabulary is also recorded along with examples of the pupils' work.

Strong vocabulary development

Our intent highlights the key vocabulary taught during each unit of work. In addition to this, each unit of work has core 'Tech Talk' vocabulary which is discussed in more detail and recorded in the pupils' computing booklets. The 'Tech Talk' vocabulary is then recapped throughout the unit and revisited across year groups.

Assessment

Teacher assessment in EYFS, KS1 and KS2 is carried out through observations, questioning and discussions with the pupils. In KS1 and KS2, there are also end of unit assessments which take the form of a quiz. These end of unit assessments are recorded either by the teacher or in the pupils' computing booklets. At the end of each academic year, the pupils' attainment in Computing is reported to parents via their written report.

Our Values

Be joyful— Computing at GSA is all about having fun, whether it is creating your own joke or animated story on Scratch, or programming the Bee-Bots to follow the route you have designed!

Show respect— We instil in our pupils the importance of treating others online as they would want to be treated. Through our e-safety lessons, we promote treating people online in the same way as we would if we were face-to-face.

Serve Others and Be generous—Our pupils are generous with their time when supporting their peers with new computing activities and are always willing to help each other.

Achieve our best— We promote perseverance through systematic trial and error, debugging of code and working together to solve problems or improve our work in Computing.

Show mercy— We encourage the virtue of forgiveness towards those who have been unkind to us online and the importance of compression towards those who need our understanding.

Be courageous—We encourage our pupils to have a go at new computing challenges and to always stand up for others if they see them being mistreated online.

Show gratitude—We are thankful for all of the resources we are lucky to have in Computing. We reinforce the importance of collectively looking after these resources.

Computer Scientists

From Year 1 to Year 6, pupils have the opportunity to learn about computer scientists who have made a significant contribution to the world we live in today. The computer scientists are specifically linked to the unit of work being studied and comprise of scientists from a range of different backgrounds and periods in history, e.g. Katherine Johnson, Ada Lovelace and Tim Berners-Lee.

Links to the future

The Kapow scheme of work uses Scratch and then Python for coding, which are also used in many of our local secondary schools. It also uses Microsoft Office applications such as Word, Excel and PowerPoint, which our pupils are likely to use in their future education and adult-life.

Impact— How will we know we achieved our aims?

| Pupils are confident in using technology, resources and Apps in their daily lives, and they are prepared for their next stage in Computing learning in our modern, digital world. | Pupils are able to demonstrate their programming skills using resources and Apps such as Bee-Bots and Scratch. | Pupils can use technology to showcase their ideas and creativity, using different hardware and software to achieve their aims. | Pupils talk about their learning in Computing using appropriate and technical vocabulary. | Pupils have an understanding of their digital footprint and the impact of this. | Pupils understand how to be safe online and in the digital world. |