

Computing at Princess Frederica

Overview

The computing curriculum at Princess Frederica covers the four main strands in the national curriculum (e-safety, digital literacy, information technology and computing science) through the use of a range of programs. The children from years 1 to 6 have weekly computing lessons in our computing suite. Every child has their own desktop computer on which they can access different software and safely explore the internet. Each year group builds on the knowledge gained in the previous year and revisits key terms and information linked to each computing strand.

The topic of e-safety is discussed at the start of each lesson where the children have the opportunity to talk about the importance of staying safe online. This is particularly focussed on throughout e-safety week and on safer internet day whereby the children have an assembly on the importance of keeping their personal information safe. There is also a focus on the issue of cyberbullying in key stage 2 and how this can be prevented.

The school is subscribed to Purple Mash, which is a creative educational website for children as well as being an effective cross curricular resource. Your child can access Purple Mash from home on a laptop, desktop or a tablet using their Mathematics login

Vision

Engage children with cross-curricular learning by interacting with a variety of programs and software.

- Endeavour to provide computing opportunities throughout each area of the curriculum to provide a stimulus for learning.
- We aim to develop confident, independent learners who are able to plan, design, create, program and evaluate information through the use of ICT.
- Prepare our children to stay safe online through the use of e-safety awareness lessons, assemblies and an e-safety focus week.

Intent

By the end of Year 1, children should be able to:

- **Log in and out safely**
- Use drawing and text tools to create a story
- Know that an algorithm is a set of instructions
- Use direction keys to create a simple algorithm
- Understand that data can be represented in picture form
- navigate around a spreadsheet
- Understand what coding means

By the end of Year 2, children should be able to:

- **Search the internet safely**
- Identify the steps that can be taken to keep personal data secure
- **Create art by repeating patterns**
- Explore edit and combine sounds
- Make a presentation
- Use a spreadsheet to total rows and columns
- Construct a binary tree to identify items
- Create a computer program using simple algorithms

- Debug simple programs
- Predict what objects will do in programs

By the end of Year 3, children should be able to:

- Know what makes a safe password
- Consider if everything on websites is true
- Open and respond to an email safely
- Add an attachment to an email
- Create a branching database
- Create pie charts and bar graphs in a spreadsheet
- Solve an investigation and present the results in graphic form
- Know what a simulation is and its purpose
- Work through and evaluate a complex simulation
- Know the vocabulary for coding
- Design and write a program that simulates a simple physical system

By the end of Year 4, children should be able to:

- Understand that leaving a digital footprint can aid identity theft
- Identify the positive and negative influences of technology on health and the environment
- Understand what plagiarism is
- Use search effectively to find out information
- Create an algorithm modelling the sequence of a simple event
- Know how font size and style can affect the impact of a text
- Know the function of different computer parts
- Know how animations are created by hand
- Add formulae and explore formatting cells in a spreadsheet
- Create a line graph in a spreadsheet
- Use a spreadsheet for budgeting
- Know the structure of the language of Logo
- Use and build procedures in Logo

By the end of Year 5, children should be able to:

- Understand the impact that sharing digital content can have
- Understand the idea of concept mapping
- Create a collaborative concept map and present it to an audience
- Design a 3D model for a purpose
- Print a 2D net and make a 3D model
- Use formula to convert measurements in a spreadsheet
- Use a spreadsheet to model a real life situation
- Know how to search for information in a database
- Create own database
- Review and analyse a computer game
- Create a game environment and game quest
- Design and write a program that simulates a complex physical system
- Explore and use number and text variables in coding
- Create a game with a timer countdown and scorepad

By the end of Year 6, children should be able to:

- Identify the benefits and risks of giving out personal information
- Understand the importance of balancing screen time with other parts of life

- Know the difference between the World Wide Web and the internet
- Create a picture based quiz for young pupils
- Make a quiz that requires the player to search a database
- Use a spreadsheet to explore probability
- Create a formula in a spreadsheet to solve a problem
- Debug a program and organise code functions into tabs
- Include user interactivity in programming
- Use flowcharts to test and debug a program
- Create, test and debug a story based text adventure
- Code a map based text adventure
- Identify the purpose of a blog
- Plan the theme and content for a blog
- Understand how to contribute to an existing blog

Implementation

- Weekly computing lessons.
- Starters based around keeping safe.
- An e-safety week annually with a focus on staying safe while online.
- E-safety units within every year group so children focus on issues in greater depth.
- E-safety links within the PSHE curriculum including assemblies.
- Coding and other computing based clubs available on the school site to support children's continued development.

Impact

- Children will have acquired the necessary skills and knowledge to be able to tackle what is rapidly becoming a technology based society.
- Children will be digitally literate.
- Children will be aware of how to stay safe on the internet using the school's SMART motto (safety, meeting, accepting, reliable, telling) and how to report anything that they are not comfortable with.
- Children will be able to code for a variety of purposes

Supporting all learners

Children are supported through differentiation where this is needed. SEND Pupils are supported by additional scaffolding in the lesson. This might be through personalised templates for written work, word mats, visuals, overlays or personalised visuals such as focus slides. More able children are encouraged to apply their knowledge with less confident children so they are using and applying. There is also an expectation that SEND children will succeed against targets outlined in bold on the end of year expectations for what a child has achieved. These act as an overriding focus through the unit for SEND children (This is a minimum expectation and any SEND children who show confidence and success in a particular area will be challenged with our areas).

Assessment

Children broadly move through the curriculum at the same pace. In lessons, there is an expectation that the teacher focuses on the bottom 20% of the class ensuring they are supported within the moment and over the shoulder feedback to support them with succeeding. At the end of the unit, progress is measured against the assessment question and against the unit targets which link to the expectations for what children will be able to do by the end of the year.

E-Safety: Supporting children and parents/carers

Children are supported with their E-Safety through various subjects in school such as PSHE, computing and in assemblies. We support parents and carers through updates in the school newsletter and through half-termly workshops which are open to parents and carers with children in any year group (although the content and discussions are aimed predominantly at Key Stage 2).

E-Safety Week

Annually, the school holds an e-safety week with the sole purpose of enhancing children's knowledge of how to keep themselves safe online. This is done by working with children on consolidating and building on their knowledge of e-safety and introducing them to new issues and dilemmas that are now appropriate given latest research and their age. E-safety week also incorporates involvement with parents and carers. There are sessions run for parents and carers on warning signs around e-safety and what they can do to help keep their child safe online and how they can ensure their child has a high level of understanding of the risks.