

Computing Curriculum

Knowledge Informed; Skills Rich.

Our Vision

Penpol pupils are **curious**, **creative** and **courageous** learners. Our school community believes in **authenticity** as the foundations of **deep-rooted learning**. Through our **rich** and **relevant Computing** curriculum, we nurture **community-minded, forward-facing international citizens** of the future.

Intent:

Why do we teach Computing at Penpol?

At Penpol we realise that Computing is about far more than just learning how to make text bold or how to create a slide presentation. Yes, these are key skills - but at its core Computing is about preparing our students for the world of tomorrow by embracing and celebrating the technology we have today. These students are growing up into a world where computers won't necessarily exist like we know them now, instead replaced by new and unimaginable technologies. So we firmly believe that we need to set our children up to succeed in this rapidly-changing world by delivering an innovative, dynamic and hands-on Computing curriculum that goes above and beyond to ensure every child feels confident and excited about using technology safely in the future.

We approach this subject in a creative and practical manner, encouraging students to embrace technology at every turn. We aspire to help them discover a love of problem solving through their coding lessons and to give them the ability to explore a wealth of digitally creative lessons and topics across a variety of different devices and technologies.

At Penpol School we know the transformative impact this subject can have on our students. Digital technologies have the power to break down boundaries - both geographically and socio-economically. We are able to reach out and interact with the world and this creates dynamic and exciting opportunities for our students going forwards. They are living in a world where technology is improving at record pace and when they are seeking employment in the future it is certain that technology will form a bit part of their roles.

Implementation:

How is Computing taught at Penpol?

Computing is taught by a subject specialist at Penpol School during the class teachers PPA release time. This approach ensures that each class is given a high-quality and specialised curriculum with a focus on the year-by-year progression.

Through a wide variety of dynamic projects and lessons the children will be faced with problems and challenges which will require their problem solving and critical thinking skills to solve. Creating safe opportunities for children to make mistakes and then to re-attempt the challenge is a key part of Computing and is something we actively encourage at Penpol. Lessons are brought to life by using real-world examples, discussions and scenarios which the children can relate to and enjoy.

We embrace the creativity of every child and know that each problem and challenge will have multiple different solutions. We encourage children to really consider the best tool for the job and to not be afraid of trying a different approach if one particular method doesn't work as they had hoped.

Learning in Computing will take a variety of forms - whether it be whole class learning in our dedicated Mac Suite or outside creating content with our iPads. We encourage smaller group tasks, projects and activities where children are able to support and learn from their peers. We also aspire to offer more in-depth and extra-curricular activities such as our FIRST LEGO League teams which give the children even more opportunities to solve real world and relevant problems with their critical thinking skills.

Impact:

What will we see from the teaching of Computing at Penpol?

Children will develop hugely important skills in critical thinking, problem solving, resilience, teamwork and precision through their Computing lessons. They will be encouraged to understand mistakes and bugs in their programs - and to share this learning with their peers. They will be able to solve complex challenges without a second thought and create content that looks professional and meets a purpose, unaware that they are working well beyond the standard expected of them at this level. They will be excited and enthused about technologies of all types and will be imagining a future career which involves the skills they are learning every lesson at Penpol.

We are preparing our students for the future by ensuring they leave us as forward thinking, creative and confident individuals who aren't afraid of technology, who understand that it is a tool for them to embrace and that they can use it to create things we can only begin to imagine.

Key Concepts for Computing



Digital Safety

Using the Internet and related technologies safely and responsibly. Understanding the potential risks and discovering how to use the internet effectively to help with research, communication and other key activities.



Digital Programming

Using instructions to solve problems, complete challenges and automate tasks. Problem solving to understand where and why existing programs aren't working and developing ideas and systems to create the desired outcomes in both digital and physical applications.



Digital Creativity

Using a variety of technologies (both hardware and software) to create meaningful and relevant content that fits a brief. Discovering how multimedia can play a key part in sharing messages or conveying information and how technology allows for interactive experiences.



Digital Technologies

Using physical hardware to understand the fundamental building blocks of computer and digital networks. Realising how hardware works on our own devices as well as in larger networks opens up a greater understanding, including that the internet is a global network which connects us all.

National Curriculum:

Attainment Targets for Computing

Key Stage One

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

Key Stage Two

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact