PACA Computer Science Curriculum Intent

Why is Computer Science Important?

In the modern world, digital skills are essential for navigating and thriving in various aspects of life. Learning computer science equips students with how to be safe and inquisitive online, ensuring they are prepared for the demands of the 21st century. By studying programming languages such as Python, students not only learn to read and write in a new language but also enhance their resilience and problem-solving abilities. Given the significant role technology plays in society today, we believe that computational thinking is a critical skill for effective and safe participation in the digital world. Our goal is for students to be digitally literate upon completing the curriculum, enabling them to express themselves and develop their ideas using information and computer technology. This level of digital literacy is essential for the future workplace and for active participation in the digital world.

What learning Computer Science looks like at PACA

- The ability to break down complex tasks using tools like **computational thinking** abstraction, pattern recognition and expressing solution in an algorithmic format.
- Using key programming constructs to follow, debug, fix and create **code** in a variety of languages including block language and Python language.
- Understand how a computer represents **data** in a variety of formats including binary.
- Using physical computer **hardware** to support identifying and understanding computer hardware purposes.
- Developing an understanding of how devices communicate across a **network** and how the internet works.
- Using a range of **software** from Operating Systems to Photoshop to understand the purpose of software to complete tasks.
- Developing **digital literacy** that will enable learners to thrive safely in the digital world.

As students become more competent, we see progress through students

- Expressing thoughts and ideas in a way a computer could follow.
- Using a variety of coding languages (text and blocks) to complete tasks.
- Articulating key terminology through expression of how computers work and how devices communicate.
- Being able to use a range of software effectively to design and create their own ideas in a digital space.
- Having a sound understanding of threats that exist in the digital world and how to access and navigate digital spaces safely.

Attributes that help children achieve success in Computing

- **Teamwork:** Having the opportunity to see complex software and coding techniques being modeled.
- **Resilience & Risk-taking:** Being able to try a number of techniques when encountering a problem, realising that a failed attempt is a step closer to success.
- **Passion:** An interest in the subject that leads to a desire to do well and work hard.
- **Creativity & Problem-solving:** The ability to see that every problem has many possible solutions and being able to organize work in an efficient way.
- **Determination:** Thinking outside the box and using all resources available to complete work set.