Priestnall
educating for life

Subject: Computing & Computer Science

Curriculum Intent and Vision

At Priestnall, we have adopted the KS3 NCCE Scheme of learning, therefore our curriculum has been designed to allow students to develop in five main areas:

- Know information as a Computer Scientist - knowledge of Computing systems, a range of software packages, how to stay safe in a digital world
- Think as a Computer Scientist - understanding that Computers follow instructions written by humans
- Study as a Computer Scientist - competence in a range of skills including programming, software skills and logical reasoning
- Apply ideas as a Computer Scientist - apply Computing knowledge, understanding and skills to real world contexts
- Communicate as a Computer Scientist - develop well-planned solutions drawing on their Computing knowledge and understanding

These areas align with the KS3 Computing National Curriculum as well as the Edexcel Computer Science specification that is followed in KS4. All of our curriculum is completed online using Microsoft teams, to allow the curriculum to be taught within in a classroom or remotely, if needed. The pupils complete their work using Teams Assignments and Class Notebooks.
The KS3 curriculum is mapped out in two sets of documents, the first our progression framework documents and scheme of learning for each year and the second set of documents include lesson plans and resources for all of the lessons.

Challenge in Computing and Computer Science:

Super Challenge activities available within all topics

Super curriculum loaded to each individuals Notebook with a space available to provide evidence

Staff in Computing and Computer Science:

Mrs Helen Drury – Curriculum Leader

Mrs Hayfa Farhat – Teacher of KS3 Computing

Mr Scott Hugill – Teacher of KS3 Computing & KS4 Computer Science

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Subject Frequency over 2-week timetable KS3/KS4

Computing at Priestnall is taught throughout the year with students receiving 2 hours per fortnight at KS3 and 5 hours a fortnight at KS4(Computer Science) (adapted for Y11 2021-22 due to Covid)

Homework Frequency for KS3/KS4

KS3 – 2-3 per half term

KS4 – Year 10 – 1 per fortnight

KS4 – Year 11 – 2 per fortnight

Edexcel GCSE Computer Science

Computer Science provides students with an exciting, practical focus on real life programming, developing skills relevant to the future. Students have the opportunity to.

- Understand and apply the fundamental principles and concepts of CS, including abstraction
- decomposition, logic, algorithms, and data representation
- Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and
- debugging programs. Think creatively, innovatively, analytically, logically and critically.
- Understand the components that make up digital systems and how they communicate with one another and with other systems.
- Understand the impact of digital technology on wider society, including issues of privacy and cybersecurity. Apply mathematical skills relevant to CS.

Component 1: Principles of Computer Science Students will develop their knowledge, skills understanding within the following topics

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- Computational thinking.
- Binary for data representation
- Computers (Hardware/Software)
- Networks
- Issues and the Impact of computers

Component 2: Application of Computational Thinking Students learn to:

- 6a Develop code
- 6b Identify structural components of programs
- 6c Write programs using primitive data types/structures
- 6d Enable inputs/outputs using validation and accessing arrays/text files
- 6e Make use of arithmetic operators
- 6f By creating functions

Breakdown of Examination Components:

- Paper 1: Principles of Computer Science Written paper 1 hr 30 mins. 5 questions, 1 for each of the topic areas and include multiple choice, short, medium and extended open responses, and tabular and diagrammatic items
- Paper 2: Application of Computational Thinking 2 hours. On-Screen Examination covering topic 6 problem solving with programming. The exam consists of 6 compulsory questions where students will code Python 3 using an Integrated Design Environment (IDE)

Extra-Curricular Clubs and Trips

Code Club – Thursdays in B8 3:15- 4:15

Raspberry Pi competition

Subject: Computing & Computer Science

Turin challenge

Astro Pie

Empower Cyber week

SEND Provision in Computing & Computer Science

- Help sheets available for all topics within MS Teams and also available printed if needed
- Links to skills videos in all topics
- Practical demonstrations
- Closed Captions on all videos provided
- Glossary for each topic
- Collaboration with learning support assistant
- Checklists
- Task lists
- Use of MS Notebooks
- Help sheet how to use MS Teams

Useful Links/ Additional Information

Code.org.uk

Codeclub.org.uk

Trinket.io

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Photopea.com

W3schools.com

Scratch.mit.edu

Sololearn.com

Canva.com

Blender.org

Inkscape.org

microsoft.com/en-us/makecode