Falconer School

Curriculum Intent:

*We are committed to providing a personalised curriculum which allows students to grow in confidence, build resilience and realise their full potential; equipping them with the skills and knowledge needed for future success.*

| Course Information | | | |
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| **Year: 8** | | **Subject: Computing** | |
| **Subject** | Computing | **Subject Lead contact information** | c.patel@falconer.herts.sch.uk |
| **Exam Board** | n/a | **Specification code** | n/a |

**Subject Content Subject Content**

In computing, students will be introduced to demonstrates simple algorithms using loops, and selection. Detects and corrects errors i.e. debugging, in algorithms. Demonstrates data transmission between digital computers over networks, including the internet i.e. IP addresses and packet switching. Constructs static web pages using HTML.

To learn python and to use a range of operators and expressions e.g. Boolean, and applies them in the context of program control. Understands and applies parameter passing.
Understands and uses two dimensional data structures.

Uses a variety of software to manipulate and present digital content: data and information. Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience. Investigates the differences between different Operating Systems, and the advantages and disadvantages of these.

**Differentiation:**

Differentiation is the way the teacher adapts the classroom materials to provide the right kind of challenge to each student. This allows all students to access the same piece of work, at their own level. Some examples of differentiation used in Computing are:

- Visual aids
- Scaffolding
- Breaking tasks in to smaller chunks
- Check points/Project plans to check levels of progress
- Exemplars

**Technical Terms:**
Audience, Print layout, Graph types, Sprites, Objects, Properties, Events, Cell reference, Formula Function, Feedback Evaluation Filter and Queries

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| **Autumn 1** | **Computational Thinking - Turtle Programming and Algorithms (Self Led)**<br>Finds where information can be filtered out in generalising problem solutions (abstraction).<br><br>Uses logical reasoning to predict outputs, showing an awareness of inputs.<br>Selects similarities and differences in situations and uses these to solve problems (pattern recognition).<br><br>Constructs solutions (algorithms) that use repetition and two-way selection. Solves problems through decomposition. |

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| | Demonstrates simple algorithms using loops, and selection. Detects and corrects errors i.e. debugging, in algorithms.<br><br>**<u>Practical's will be based on Turtle Programming and Coding websites</u>** |
| **Autumn 2** | **Networking - Networking Basics**<br>Examines the importance of network security including simple security techniques such as strong passwords<br><br>Demonstrates data transmission between digital computers over networks, including the internet i.e. IP addresses and packet switching. Constructs static web pages using HTML.<br><br>Summarises the difference between the internet and internet service e.g. world wide web. Shows an awareness of, and can use a range of internet services e.g. VOIP.<br><br>Understands the importance of communicating safely and respectfully online, and the need for keeping personal information private. Understands how to effectively use search engines. Explains the difference between a web browser and a search engine. |
| **Spring 1** | **Programming - Further programming techniques in python**<br><br>Tests solutions thoroughly to determine the effectiveness of the solution. Appreciates the effect of the scope of a variable.<br><br>Uses a range of operators and expressions e.g. Boolean, and applies them in the context of program control. Understands and applies parameter passing. Understands and uses two dimensional data structures.<br><br>Designs, writes and debugs modular programs using functions. Selects appropriate variables and relational operators within a loop to govern termination. Establishes the difference between a while loop and a for loop.<br><br>Identifies the differences between, and appropriately uses if and if, then and else statements. Has practical experience of a high level textual language. |
| **Spring 2** | **IT - Graphic Design and Copyright (Photoshop)**<br><br>Uses a variety of software to manipulate and present digital content: data and information. Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience<br><br>Shows an awareness for the quality of digital content collected. Shares their experiences of technology in school and beyond the classroom. Talks about their work and makes improvements to solutions based on feedback received.<br><br>Demonstrates how to store and edit digital content using appropriate file and folder names.<br><br>Demonstrates use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online. Understands the legal frameworks governing the use of information. |
| **Summer 1** | **Computers - Software and Hardware** |

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| | Investigates the differences between different Operating Systems, and the advantages and disadvantages of these.<br><br>Uses a range of application software to carry out designated tasks.<br><br>Classifies a range of software including operating systems, utility and application software.<br><br>Explains the difference between hardware and software, and their roles within a computer system. Gives examples of how data is stored on a computer. |
| **Summer 2** | **IT - Using technology safely**<br><br>Makes judgements about digital content when evaluating and repurposing it for a given audience. Recognises the audience when designing and creating digital content.<br><br>Undertakes creative projects that collect, analyse, and evaluate data to meet the needs of a known user group. Effectively designs and creates digital artefacts for a wider or remote audience.<br><br>Uses a variety of software to manipulate and present digital content: data and information. Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience<br><br>Shows an awareness for the quality of digital content collected. Shares their experiences of technology in school and beyond the classroom. Talks about their work and makes improvements to solutions based on feedback received. |

| **Assessment Details** |
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| Assessment will take place each term at various points. Students will have the opportunity to reflect what they've learnt throughout each term either in a theory or a practical assessment. |

| **What can I do to support my child at home?** |
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| To work through material online on the google classroom, and use BBC Bite size.<br><br>Free online software available such as:<br><br>www.scratch.mit.edu<br>www.photopea.com<br>www.pixelart.com<br>www.wix.com<br>www.piskelapp.com<br>www.pivotanimator.net<br>https://www.python.org/<br>https://bournetocode.com/projects/8-CS-Turtles/index.html |

www.python.org
https://blockly.games/ (Puzzle coding)
https://turtleacademy.com/

| Recommended resources |
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| Python, Photoshop, Pivot, Scratch, Photopea, Dreamweaver, Microsoft Word, PowerPoint, Excel, and Publisher. |

| Teaching Staff Contact Details | | | |
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| **Name** | **Role** | **Email** | **Tel** |
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