

## SUBJECT: ICT/Computing

### Key Stage 3: Curriculum Intent (BRIEF):

Term	Year 7	Year 8	Year 9
Autumn 1	<p><b><u>Topic: Emails and E-safety</u></b></p> <p><b><u>Content covered, including knowledge and skills:</u></b></p> <ul style="list-style-type: none"> <li>- Organising files</li> <li>- Preparing folders for each unit being studied</li> <li>- Staying safe online</li> <li>- Social networking</li> <li>- Cyberbullying</li> <li>- Cloud Storage</li> <li>- Digital Footprint</li> <li>- Ethical Issues</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Previous work on E-safety in Primary school as well as Computing introductory session in Year 7 Summer School</p>	<p><b><u>Topic: Spreadsheets</u></b></p> <p><b><u>Content covered, including knowledge and skills:</u></b></p> <ul style="list-style-type: none"> <li>- Entering and Formatting Data</li> <li>- Basic Spreadsheet Formulas (SUM/MAX/MIN/AVERAGE)</li> <li>- Counting data (COUNT/COUNTIF)</li> <li>- Lookup tables (VLOOKUP)</li> <li>- Autofill and Absolute Cell Referencing</li> <li>- Conditional Formatting</li> <li>- Data Validation</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Previous knowledge using Excel including entering data and performing simple calculations.</p> <p><b><u>Links to British Values and SMSC:</u></b></p> <p>Spreadsheets are used extensively in Small and Medium-Sized Enterprises as</p>	<p><b><u>Topic: Websites and HTML</u></b></p> <p><b><u>Content covered, including knowledge and skills:</u></b></p> <ul style="list-style-type: none"> <li>- Website Design</li> <li>- Making a webpage</li> <li>- Styles and Lists</li> <li>- CSS</li> <li>- Images and Hyperlinks</li> <li>- Tables</li> <li>- Navigation</li> <li>- Domains and Hosting</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Links to Python programming unit at end of Year 8 as well as HT Stakeholder Project at end of Year 7 as this unit will see students develop a website around a theme.</p> <p><b><u>Links to British Values and SMSC:</u></b></p> <p>Students will be able to understand how websites need to cater to people of different</p>

**Links to British Values and SMSC:**

Developing a sense of understanding on the significance of staying safe online and awareness of a Digital Footprint.

Introduces pupils to the dangers of social networking websites and cyberbullying as well as other ethical issues in Computing such as the Digital Divide, Privacy and Piracy

**Career opportunities:**

- Programmer
- IT technician
- Teacher

**Literacy: Key words and terminology:**

- E-safety
- Social awareness
- Emails
- Cyberbullying
- Cloud Storage
- Ethical
- Archive
- Permanent
- Synchronise
- Backup

well as larger corporations. Students will see multiple case studies associated with the work and apply knowledge of spreadsheets to the workings of different types of businesses.

**Career opportunities:**

- Economist
- Statistician
- Teacher
- Entrepreneur

**Literacy: Key words and terminology:**

- Spreadsheet
- Cell
- Reference
- Formatting
- Formula
- Charts

accessibility needs. Students will also be developing around websites around food from their cultures which will allow students to learn about the food from their peers.

**Career opportunities:**

- Web Developer
- UI Designer
- Software Engineer
- Entrepreneur

**Literacy: Key words and terminology:**

- Navigation
- Menu
- URL
- Hyperlink
- HTML
- Webpage
- CSS
- Tag
- RGB Code/Hex Code
- Accessibility
- Domain
- Hosting
- Font
- Resolution
- TLD
- Registrar
- Server

Autumn  
2

**Topic: Hardware and Software**

**Content covered, including knowledge and skills:**

- Input and Output devices
- Computer Components
- Hardware and Software
- Operating Systems

**Links to prior learning:**

Understanding the safety of computers and how they work

**Career opportunities:**

- Software Engineer
- Hardware Technician
- Teacher

**Links to British Values and SMSC:**

Learning about how computers work and how they are a useful resource in today society. Using a range of social skills and considering the views of others.

**Topic: Algorithms**

**Content covered, including knowledge and skills:**

- Creating Algorithms
- Search Algorithms
- Sorting Algorithms

**Links to prior learning:**

Being able to use previous knowledge of the influences of how computers work or knowledge of programming from Primary School (e.g. Scratch)

**Links to British Values and SMSC:**

Encouraging students to think computationally and logically by understanding how tasks can be broken down and simplified to make them easier to complete.

**Career opportunities:**

- Software Engineer
- Teacher
- Project Manager

	<p><b><u>Literacy: Key words and terminology:</u></b></p> <ul style="list-style-type: none"> <li>- Memory</li> <li>- Graphics Card</li> <li>- Hard drive/SSD</li> <li>- Monitor</li> <li>- Printer</li> <li>- Application Software</li> <li>- Utility Software</li> <li>- CPU</li> <li>- RAM</li> <li>- Motherboard</li> <li>- Open Source Software</li> <li>- Operating System</li> </ul>	<p><b><u>Literacy: Key words and terminology:</u></b></p> <ul style="list-style-type: none"> <li>- Computational Thinking</li> <li>- Algorithm</li> <li>- Decomposition</li> <li>- Abstraction</li> <li>- Linear Search</li> <li>- Binary Search</li> <li>- Iteration</li> <li>- Swap</li> <li>- Pass</li> <li>- Efficiency</li> <li>- Bubble Sort</li> <li>- Insertion Sort</li> </ul>	
Spring 1	<p><b><u>Topic: Binary</u></b></p> <p><b><u>Content covered, including knowledge and skills:</u></b></p> <ul style="list-style-type: none"> <li>- Converting Binary to Decimal</li> <li>- Converting Decimal to Binary</li> <li>- ASCII and Extended ASCII</li> <li>- Unicode</li> <li>- File Sizes</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Maths skills including place values, multiplication, division and exponents.</p>	<p><b><u>Topic: Computer Networks</u></b></p> <p><b><u>Content covered, including knowledge and skills:</u></b></p> <ul style="list-style-type: none"> <li>- Wired and Wireless Connections</li> <li>- Network Hardware</li> <li>- Types of Networks</li> <li>- Network Topology</li> <li>- The Internet</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Knowledge of computer hardware and software in Year 7. Knowledge about how</p>	<p><b><u>Topic: Data Representation</u></b></p> <p><b><u>Content covered, including knowledge and skills</u></b></p> <ul style="list-style-type: none"> <li>- Converting Hexadecimal</li> <li>- Representing Images</li> <li>- Representing Sound</li> <li>- File Compression</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Knowledge of Binary number systems in Year 7, existing knowledge of images and sound from other subjects such as Art, Music and Science.</p>

	<p><b><u>Career opportunities:</u></b></p> <ul style="list-style-type: none"> <li>- Software Engineer</li> <li>- Network Manager</li> <li>- Hardware Engineer</li> <li>- Statistician</li> <li>- Interpreter/Translator</li> </ul> <p><b><u>Links to British Values and SMSC:</u></b></p> <p>Learn about how different number systems exist not just for computers but also between different cultures around the world. ASCII/Unicode also allows students to understand how English language as well as other languages around the world are displayed on devices</p> <p><b><u>Literacy: Key words and terminology:</u></b></p> <ul style="list-style-type: none"> <li>- Binary</li> <li>- Decimal</li> <li>- Conversion</li> <li>- Exponent</li> <li>- Characters</li> <li>- Symbols</li> <li>- Metric</li> <li>- Kilobyte</li> </ul>	<p>mobile technologies work such as mobile data, Wi-Fi and Bluetooth</p> <p><b><u>Career opportunities:</u></b></p> <ul style="list-style-type: none"> <li>- Network Manager</li> <li>- IT Technician</li> <li>- Hardware Engineer</li> <li>- Programmer</li> <li>- Cyber Security Specialist</li> <li>- Cloud Infrastructure Specialist</li> <li>-</li> </ul> <p><b><u>Links to British Values and SMSC:</u></b></p> <p>Students are able to understand the process of how telecommunications allow us to connect with people around the world as well as how developing countries are approaching telecommunications.</p> <p><b><u>Literacy: Key words and terminology:</u></b></p> <ul style="list-style-type: none"> <li>- Network</li> <li>- Copper Wire</li> <li>- Fibre Optic</li> <li>- Bluetooth</li> <li>- Broadband</li> <li>- Hub</li> <li>- Switch</li> <li>- Wireless Access Point</li> </ul>	<p><b><u>Career opportunities:</u></b></p> <ul style="list-style-type: none"> <li>- Software Engineer</li> <li>- Network Manager</li> <li>- Statistician</li> <li>- Graphics Designer</li> <li>- Audio Technician</li> </ul> <p><b><u>Links to British Values and SMSC:</u></b></p> <p>Students will recall that different number systems exist for computers as well as people from different cultures. Students will understand the advancements in image and audio technologies.</p> <p><b><u>Literacy: Key words and terminology:</u></b></p> <ul style="list-style-type: none"> <li>- Hexadecimal</li> <li>- Decimal</li> <li>- Binary</li> <li>- Place Value</li> <li>- Pixel</li> <li>- Bitmap</li> <li>- Colour Depth</li> <li>- Resolution</li> <li>- Metadata</li> <li>- Analogue</li> <li>- Digital</li> </ul>
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	<ul style="list-style-type: none"> <li>- Megabyte</li> <li>- Gigabyte</li> <li>- Terabyte</li> </ul>	<ul style="list-style-type: none"> <li>- Client Server Model</li> <li>- Peer to Peer Model</li> <li>- Topology</li> <li>- Mesh Network</li> <li>- Telecommunication</li> <li>- Packet Switching</li> <li>- IP Address</li> <li>- Ethernet</li> </ul>	<ul style="list-style-type: none"> <li>- Sampling</li> <li>- Frequency</li> <li>- Amplitude</li> <li>- Lossy</li> <li>- Lossless</li> <li>- Compression</li> </ul>
Spring 2	<p><b><u>Topic: Computer Security</u></b></p> <p><b><u>Content covered, including knowledge and skills:</u></b></p> <ul style="list-style-type: none"> <li>- Malware</li> <li>- Protecting your Computer</li> <li>- Social Engineering</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Knowledge of emails, E-safety as well as Hardware and Software</p> <p><b><u>Career opportunities:</u></b></p> <ul style="list-style-type: none"> <li>- Hardware Engineer</li> <li>- Software Engineer</li> <li>- Network Manager</li> <li>- Cybersecurity</li> </ul> <p><b><u>Links to British Values and SMSC:</u></b></p>	<p><b><u>Topic: Ethics and Law</u></b></p> <p><b><u>Content covered, including knowledge and skills:</u></b></p> <ul style="list-style-type: none"> <li>- Computer Misuse Act</li> <li>- Copyright, Designs and Patents Act</li> <li>- Environmental Impact of IT</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Knowledge of different types of malware and criminal activity that can be used to get information and money from victims as well as copyright.</p> <p><b><u>Career opportunities:</u></b></p> <ul style="list-style-type: none"> <li>- Lawyer</li> <li>- IT Infrastructure Analyst</li> <li>- IT Procurement</li> <li>- Software Engineer</li> </ul>	<p><b><u>Topic: User Interface Design</u></b></p> <p><b><u>Content covered, including knowledge and skills:</u></b></p> <ul style="list-style-type: none"> <li>- Types of User Interfaces</li> <li>- Audience Needs</li> <li>- Design Principles</li> <li>- Making an efficient UI</li> </ul> <p><b><u>Links to prior learning:</u></b></p> <p>Recalling work done for the Year 7 HT Stakeholder Project as well as Year 9 Website Project in developing an interface that is suitable for all people to understand.</p> <p><b><u>Career opportunities:</u></b></p> <ul style="list-style-type: none"> <li>- Web Developer</li> <li>- UI Designer</li> <li>- Software Engineer</li> </ul>

Students are able to look at the different methods criminals use to damage computers as well as ways to protect them. Students will also be aware of different techniques criminals use technology to steal money and information such as phishing through texts and emails.

**Literacy: Key words and terminology:**

- Malware
- Virus
- Trojan
- Ransomware
- CAPTCHA
- Two Factor Authentication
- Phishing

- Cybersecurity
- Content Creator

**Links to British Values and SMSC:**

Students are able to understand the law behind misuse of computers, including the different categories of hacker. Students would be able to understand copyright law and how to use content responsibly. Finally, students will be able to understand how IT can be harmful to the environment as well as how IT can be beneficial to the environment.

**Literacy: Key words and terminology:**

- Misuse
- Ethical
- Malicious
- Morality
- Copyright
- Patent
- Public Domain
- Open Source
- Closed Source
- E-waste
- Pollution
- Renewable

- Entrepreneur
- Graphics Designer
- Video Producer
- Content Creator

**Links to British Values and SMSC:**

Students will learn more in depth the advancement in technologies In User Interfaces, notably in how best to cater to different accessibility needs as well as different design techniques used to produce professional user interfaces.

**Literacy: Key words and terminology:**

- Text-based User Interface
- Graphical User Interface
- Menu-based User Interface
- Accessibility
- Motor
- Cognitive
- Whitespace
- House Style
- Serif
- Sans-serif
- Navigation

Summer 1  
and 2

**Topic: HT Stakeholder Project**

**Content covered, including knowledge and skills:**

- Planning
- Storyboard
- Creating Presentations
- Testing and generating feedback
- Evaluation

**Links to prior learning:**

- Decision making skills
- Functional skills on computer software
- Presentational skills
- Social interaction
- Effective communication

**Links to British Values and SMSC:**

Promoting enjoyment and fascination learning about how to successfully create a pitch for a potential new stakeholder of Haileybury Turnford. Recognising the key skills that are needed when presenting ideas. Using a range of social skills and considering the views of others.

**Topic: Python Programming**

**Content covered, including knowledge and skills:**

- Boolean Logic
- Python Input and Output
- Python Arithmetic
- Python Selection Statements
- Python Random Number Generator
- Python Iteration
- Python Subroutines

**Links to prior learning:**

Link to prior work on Hardware and Software as well as Algorithms. Primary School work with Scratch leading into programming with Python.

**Links to British Values and SMSC:**

Students will be able to further understand how to create simple computer programs being able to think logically using their knowledge of algorithms. Students will be able to think creatively when solving problems that are given to them.

**Topic: User Interface Project**

**Content covered, including knowledge and skills:**

- Project Proposal
- Gantt Chart
- UI Draft
- Developing UI Prototype
- Evaluation

**Links to prior learning:**

Link to prior project work in Year 7 and 9 as well as previous term's work on User Interface Design in order to produce a high-quality User Interface for a client.

**Links to British Values and SMSC:**

Students will be able to produce work for a given client and meet their needs

**Career opportunities:**

- Researcher
- Marketing
- UI Designer
- Advertising
- Entrepreneur



**Career opportunities:**

- Researcher
- Marketing
- UI Designer
- Advertising
- Entrepreneur

**Literacy: Key words and terminology:**

- Pitching
- Persuasion
- Success Criteria
- Target Audience
- Demographics
- Storyboard
- House Style
- Hyperlink
- Animation
- Transition
- Evaluating
- Researching

**Career opportunities:**

- Software Engineer
- IT Consultant
- Teacher
- Lecturer
- Video Game Design
- Network Manager

**Literacy: Key words and terminology:**

- Variable
- Print
- Input
- Selection
- RNG (Random Number Generator)
- Modulo Function
- Integer
- String
- Float
- Else If
- Subroutine
- Decomposition

**Literacy: Key words and terminology:**

- Pitching
- Persuasion
- Success Criteria
- Target Audience
- Demographics
- Storyboard
- House Style
- Hyperlink
- Animation
- Transition
- Evaluating

