Year 7 Curriculum Goals Overview

Intro to Systems & Digital Responsibility

1. Identify Characteristics of a strong password
2. Explain the importance of a strong password
3. Create and use an appropriate folder structure in your documents
4. Send a professional email with attachment
5. Use TEAMS and key network areas effectively including file saving
6. Understand the acceptable use policy, computing classroom expectations
7. Define 'digital footprint' and steps to improve and reduce it
8. Define grooming & recognise the risks and methods of protection against grooming
9. Identify age limits and risks of social media platforms
10. Define cyberbullying & recognise the risks and methods of reporting of bullying
11. Develop key digital skills including touch typing

Computational Thinking

1. Define the 4 cornerstones of compuational thinking
2. Practice carrying out each cornerstone to solve a series of problems
3. Particpate in the National Computational Thinking Competition
4. Recognise flowchart symbols and understand their use
5. Create a flowchart solution to operate a set of traffic lights
6. Create a flowchart solution to operate a 2 way traffic light system
7. Create a flowchart solution to operate a log flume ride

Spreadsheets

1. Use a variety formatting techniques to change how data is displayed e.g. borders, merge
2. Use the replication function to accurately repeat data or recognise data patterns
3. Use basic formulae operations to manipulate data
4. Use a range of basic functions to manipulate data e.g. SUM, COUNT, AVERAGE
5. Use conditional formatting to manipulate data
6. Use data validation to reduce data errors
7. Create graphs and charts to represent different types of information
8. Sort and filter data to answer a series of questions

Programming

1. Predict the outcome of a series of programs
2. Identify and fix errors in a series of programs
3. Modify a series of programs to solve a presented problems
4. Develop sequential algorithms to solve a series of problems
5. Understand the benefits of pattern recognition and the use of iteration
6. Implement count controlled and condition controlled iteration to efficiently solve problems
7. Understand the concept and need for selection in programming
8. Implement selection with a variety of conditionals to efficiently solve problems

History of Computing

1. Explain the contribution of Alan Turing to modern day computer science
2. Understand and use ciphers and encryption
3. Explain the contribution of Tim Bernes Lee to the modern day world wide web
4. Develop advanced searching skills for more reliable and accurate web results
5. Explain the contribution of key female pioneers in the world of computer science
6. Understand the timeline of computer developments
7. Understand how computers work using binary
8. Convert up to 8 bit binary into denary

Year 8 Curriculum Goals Overview

Digital Responsibility

1. Define malcious software, with examples and impacts
2. Define phishing with examples and impacts
3. Define antivirus and how it functions
4. Define firewall and how it functions
5. Define encyryption and practice decoding and encoding messages
6. Describe the advantages and disadvantages of encryption
7. Identify age limits and risks of social media platforms
8. Define cyberbullying & recognise the risks and methods of reporting of bullying

Computational Thinking

1. Recap on the 4 cornerstones of Computational Thinking
2. Particpate in the National Computational Thinking Competition

1. Use tools to draw, modify and position shapes
2. Use tools to align, distribute, combine and group shapes
3. Understand that vectors are made of paths and create and modify these
4. Create a logo for a given purpose
5. Investigate how vector images are stored and modify markup values
6. Develop images based on teacher and peer feedback against assessment criteria

Data Representation

1. Understand the binary and denary number systems and why they are used
2. Convert to 8 bit binary and back to denary
3. Add 8 bit binary sequences following addition rules
4. Define and identify overflow errors
5. Explain and perform left and right shift binary
6. Identify data storage units and abbrieviations from byte to terabyte
7. Perform basic data storage conversions
8. Explain the rules of AND, OR and NOT logic gates, including truth tables
9. Solve basic logic gate diagrams

Programming with Python Turtle

1. Predict the outcome of a series of programs written in python
2. Use the turtle module to draw a series of objects in Python
3. Use iteration to simplify repetitve tasks
4. Develop use of iteration to create complex geometric patterns and shapes
5. Develop use of selection to create complex graphics
6. Develop use of attribute features to enhance turtle drawings
7. Develop use of functions to create organised programs
8. Understand event handling in python to create user interactive graphics

Hardware & Software

1. Understand what a computer system is
2. Identify input, output and storage devices and their uses
3. Identify key internal hardware and explain their function
4. Undertand the difference between application and system software
5. Understand operating systems and user interfaces
6. Interact with a command line operating system to solve a series of problems
7. Identify and explain the key features of utility software
8. Define and explain a series of embedded systems

Year 9 Curriculum Goals Overview

Digital Responsibility

1. Understand copyright legislation and how to credit creators and find sources
2. Understand creative commons licencing and its associated symbols
3. Recognise the difference between immoral and illegal technology scenarios
4. Evaluate their digital footprint identify methods of reduction
5. Discuss the impacts of technology on the environment
6. Create a digital infographic
7. Understand data protection laws and recognise when they have been breached
8. Evaluate the moral dilemas when automated technology fails
9. Recognise the concept of the digital divide and the impact that it has
10. Develop awareness of youth produced sexual imagery and strategies to manage these situations

Computational Thinking

1. Recap on the 4 cornerstones of Computational Thinking
2. Particpate in the National Computational Thinking Competition

1. Predict the outcome of a programming sequences
2. Manipulate programming sequences to identify common errors
3. Understand and implement variables and constants
4. Create programming sequences to solve simple problems
5. Understand and use the iteration programming construct
6. Understand and use the selection programming construct
7. Identify and use common programming data types
8. Recognise and implement arthimetic and boolean operators within programs

Advanced Presentations - Escape Room

1. Develop an understanding of a digital escape room through exploration
2. Develop advanced animation skills such as on trigger, timed and kiosk mode
3. Develop advanced design skills within powerpoint by utilising attribute changes
4. In groups select a theme and develop a storyline for the overall escape room
5. Create escape room slides that implements advanced skills to create an advanced presentation
6. Implement and test a series of hyperlinks to successfully navigate the escape room
7. Create accompanying documentation to allow others to complete your escape room
8. Implement updates to escape room following teacher and peer feedback to assessment criteria

Business

1. Understand the concept of business, goods and services
2. Identify and describe a series of business entrepreneurs and their achievements
3. Explain the term marketing and the 4 Ps of the marketing mix
4. Recognise the key components to strong branding
5. Explain the difference between primary and secondary market research and their methods
6. Identify and describe the 4 basic business ownership structures
7. Understand the difference between limited and unlimited liability
8. Develop your own cereal brand, using market research and branding concepts

Data Representation

1. Define and understand the uses of the hexadecimal number system
2. Convert from binary, to hex to denary
3. Describe and demonstrate how binary is used to represent images
4. Describe and demonstrate how binary is used to represent sounds
5. Calculate file sizes of image and sound
6. Understand and explain the impacts of bit depth, resolution & sampling on file size
7. Explain the difference between lossy & lossless compression