Holy Family Catholic School – Faculty of Mathematics and Technology

Subject – Computing Half-Term 2 Year 8

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Question	Red Zone
Week 1 I will understand why computers use binary and what binary means.	Binary, Bit, Byte, Data, Storage	Data & Data Representation	What does binary mean? Why do computers use 1s and 0s instead of decimal?	I can explain what binary is and why computers use it. I can identify the difference between bits and bytes.	Why do computers use binary numbers (1s and 0s)? A) Because humans find binary easier to read B) Because computers are built from electronic circuits that can only be on or off C) Because binary numbers are shorter than decimal numbers D) Because binary is the same as decimal	**In your own words, explain why computers use binary numbers.**
Week 2 I will learn how to convert between binary and decimal numbers.	Decimal, Conversion, Place Value, 8-bit	Data & Data Representation	How do you convert from binary to decimal? What is the value of each binary position?	I can convert numbers from binary to decimal and vice versa.	What is the decimal value of the binary number 10101101? A) 142 B) 173 C) 205 D) 128	**Convert 10101101 to decimal.** **Convert 142 to binary.**

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Week 3 I will learn how to perform binary addition.	Binary Addition, Carry, Overflow	Data & Data Representation	What happens when you add two 1s in binary? What is overflow?	I can add binary numbers accurately. I can explain what overflow means.	What happens when you add 1 + 1 in binary? A) The answer is 1 B) The answer is 2 C) The answer is 10 (carry to the next column) D) The answer is 0 with no carry	**Add: 0101 + 0110 = ? Explain what happens if there is overflow.**
Week 4 I will understand how text is represented using binary (ASCII).	ASCII, Character Set, Encoding, Unicode	Data & Data Representation	What does ASCII stand for? How are letters stored in binary?	I can explain how computers represent characters using ASCII. I can decode and encode simple ASCII messages.	What does ASCII stand for? A) American Standard Code for Information Interchange B) Advanced System for Character Input Integration C) Automated Storage Code for Internet Information D) Alphabetic Symbol Coding for International Interchange	**Write your name in binary using ASCII codes.**

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Week 5 I will understand how bitmap images are stored and represented.	Pixel, Resolution, Colour Depth, Bitmap	Data & Data Representation	What is a pixel? What happens when you increase resolution or colour depth?	I can explain how images are represented using pixels and binary. I can describe how resolution and colour depth affect file size.	What happens when you increase the colour depth of a bitmap image? A) The image becomes smaller in file size B) The image can display more colours but uses more storage C) The image resolution decreases D) The pixels become larger	**Draw an 8×8-pixel image using binary (1 = black, 0 = white).**
Week 6 I will understand how sound is represented on a computer.	Sample, Sampling Rate, Bit Depth, Waveform	Data & Data Representation	What does sampling mean? What happens when you increase sample rate?	I can explain how computers convert sound into binary data. I can describe the effects of sample rate and bit depth.	What effect does increasing the sampling rate have on a digital sound file? A) The sound becomes quieter B) The sound quality improves but the file size increases	**Explain how a microphone captures sound and converts it into binary data.**

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					C) The sound becomes louder D) The sound plays faster	
Week 7 I will consolidate my understanding of binary, text, images, and sound representation.	Binary, ASCII, Pixel, Sample, Encoding	Data & Data Representation	How do computers store data for text, images, and sound?	I can demonstrate a full understanding of how different data types are represented in binary. I can present my understanding clearly.	Which of the following is **NOT** represented in binary on a computer? A) Text characters B) Images C) Sound D) Human handwriting on paper	**Create a digital poster or presentation explaining how computers represent text, images, and sound.**