Holy Family Catholic School – Faculty of Mathematics and Technology

Subject – Computing Half-Term 2 Year 8

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone	Hinge Questions
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.	**In your own words, explain why computers use binary numbers.**	**Why do computers use binary?** **A. It uses only two reliable states** **B. It uses fewer files** **C. It makes every number shorter** **Answer: A**
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.	**Convert 10101101 to decimal. Convert 142 to binary.**	**What is 00001010 in decimal?** **A. 8** **B. 10** **C. 12** **Answer: B**
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.	**Add: 0101 + 0110 = ? Explain what happens if there is overflow.**	**What is 0101 + 0011 in binary?** **A. 1000** **B. 0110** **C. 1010** **Answer: A**
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.	**Write your name in binary using ASCII codes.**	**How does a computer store the letter A?** **A. As a pixel** **B. As a sound sample** **C. As a binary character code** **Answer: C**

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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.	**Draw an 8×8-pixel image using binary (1 = black, 0 = white).**	**Which change usually increases bitmap file size?** **A. Lower resolution** **B. Higher colour depth** **C. Fewer pixels** **Answer: B**
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.	**Explain how a microphone captures sound and converts it into binary data.**	**What happens when the sampling rate increases?** **A. More sound samples are taken each second** **B. The sound becomes longer** **C. Fewer bits are stored** **Answer: A**
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.	**Create a digital poster or presentation explaining how computers represent text, images, and sound.**	**Which statement is correct?** **A. Text uses pixels and images use ASCII** **B. All digital data is stored as binary** **C. Sound cannot be stored as binary** **Answer: B**