Foxford Learning Plan

Autumn 1

Data Representation

Year 9

Key Vocabulary

Bitmap	A map of bits, whereby the image is made of pixels.
Pixels	The individual units (dots) that make up an image.
Colour Depth	The number of bits, which are used to represent each pixel in an image. Increased numbers of colours means more bits are needed.
Metadata	Data, which is stored about a file. Examples include the type of file, date and time created file size and geolocation.
Sample rate	The frequency at which you record the amplitude of a sound. Measured in Hertz.
Sampling	Method of converting an analogue sound signal into a digital file containing binary numbers.
Compression	The re-encoding of data so that less bits are used to store it. Usually done to increase speed of transmission.
Vector Image	An image represented using lines and shapes with specific properties such as line and fill colour. Data about each shape is stored in binary.

Key Skills

Over the course of the topic, I will be able to: -
Describe how digital images are composed of individual elements
Recall that the colour of each picture element is represented using a sequence of binary digits
Define key terms such as 'pixels', 'resolution', and 'colour depth'
Describe how an image can be represented as a sequence of bits
Describe how colour can be represented as a mixture of RGB
Explain how the manipulation of digital images amounts to arithmetic operations on their digital representation
Describe how sounds are represented as sequences of bits
Calculate representation size for a given digital sound, given its attributes





I will Understand

1. How to compute the representation size of a digital image, by multiplying resolution (number of pixels) with colour depth (number of bits used to represent the colour of individual pixels)
2. How to calculate representation size for a given digital sound, given its attributes
3. The difference between lossy and lossless compression
4. How to perform basic sound editing tasks using appropriate software and combine them in order to solve more complex problems
5. How to perform basic image editing tasks using appropriate software and combine them in order to solve more complex problems requiring image manipulation