

Year 9 summer 1 Computing: Representations – going audiovisual



A) Key knowledge		B) Key knowledge		C) Key knowledge		D) Key knowledge	
000101101 111000100 010110	Each of those 0s and 1s is called a binary digit or bit	Colour depth #1	The (fixed) number of binary digits used to represent each pixel's colour	Representation size	Resolution (number of pixels in an image) × Colour depth (number of bits per pixel)	Sampling rate	The number of samples taken per second is called the sampling rate
Digital image	A digital image is composed of individual elements, arranged in a rectangular grid	Increased representation size	More space required for storage, more effort required for processing, more time required for transmission	Sound wave	Vibrations can set particles in motion, generating variations in density (pressure)	Sampling size	The number of bits recorded per sample
Pixels	The elements of a digital image are called pixels (picture elements)	Bitmaps	Digital images that are formed using a binary representation of each pixel's colour are called bitmaps or raster images	Microphone	Microphones allow devices to capture sound as electricity. They convert variations in pressure to variations in electric voltage	Representation	Sampling rate X sampling size X Duration X Channels
Resolution	The number of pixels in a digital image is the image resolution	RGB colours	Commonly represented using 24 bits . The quantity of red, green, and blue in the mix is specified using 8 bits for each colour	Speakers	Speakers allow devices to generate sound from electricity. They convert variations in electric voltage to variations in pressure .	Vector image	Images can be represented as collections of geometrical shapes (each with its own attributes).
High resolution	Images with high resolution, i.e. a large number of pixels, have increased quality and more detail	Colour depth #1	A common value for colour depth in bitmap images is 24 bits per pixel.	Wave forms	Waveforms are analogue : continuous streams; individual points can have any value	MIDI files	Music can be represented as a sequence of musical notes (with information on how to play them).
Homework: Describe how (0,0, 255) represents the colour blue.		Homework: Describe a positive effect of manipulating images using software.		Homework: Describe a negative effect of manipulating images using software.		Homework: Describe how to calculate representation size.	