

Area of Study 3: The development of recording and production technology

3.1 Software and hardware: digital

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Digital hardware/software attributes	PCM			
	Sample rate			
	Nyquist			
	Aliasing			
	Bit depth			
	Bytes, Kilobyte, Megabyte, Gigabyte, Terabyte			
	The differences between digital and analogue recordings			
	The advantages and disadvantages of digital hardware/software			
	Graphical user interfaces (GUI)			
	Sampling theory and converters			
DAW	Core and advanced functions of a DAW			
	Real-time (native) processing; software instruments			
	Non-destructive and non-linear editing			
	Convolution reverb			
	Amp modelling			
Digital consumer formats	CD; mp3/m4a; high definition masters			
	Emerging technologies			
Digital recording and sampling hardware	Digital multitrack formats			
	Sampling with limited available memory			

3.2 Harware: analogue

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Analogue hardware attributes	The advantages and disadvantages of analogue recordings			
	Valves			
	Soft clipping			
	Tape saturation			
	Solid state (transistor) amplifier			
	Distortion for hard clipping			
	Maintenance issues			
Tape machines	Editing and splicing			
	Multitrack tape formats			
	Wow & flutter; variations in pitch			
Analogue consumer formats	Vinyl			
	Cassette tape			
	Mono and stereo releases			
	Mixing and mastering priciples for analogue formats			
Analogue effects	Delay: Tape, bucket brigade			
	Mechanical reverbs: plate spring			
	Rotary speaker (Leslie cabinet)			
	Vinyl scratching			
	Pitch changes and reversing using vinyl and tape			
Analogue synthesisers	Advantages and disadvantages			
	Modules and patching			
Electric instruments	Electric guitar; bass guitar			
	Theremin; Mellotron; electric organ; electric piano; Clavinet			