Music Tech A Level - Personal Learning Checklist

Area of Study 2: Principles of audio and sound technology

2.1 Acoustics		R	A	G
How live room acoustics affect the recording	Room size; absorption; reflection; diffusion			
	Isolation booths for vocals, drums and amps			
Acoustics parameters - Describing a reverb tail:	Pre-delay time			
	Early and late reflections			
	Reverberation time (RT60)			
	Resonant frequencies			

2.2 Monitor speakers		R	A	G
Monitor speakers	The frequency ranges handled by tweeters, woofers and subwoofers			
	How speakers work by electromagnetic induction			
How different monitor speakers affect mix translation	Checking mixes on different monitoring systems			

2.3 Leads and signals		R	A	G
Leads and signals	Balanced and unbalanced connections			
Connectivity including signal path and signal types	Aux sends			
	Insert points			
	Sub groups			
	Mixer channel strips			
Different types of leads	Jack			
	XLR			
	MIDI			
	Digital ins/outs			
	Firewire			
	USB			
	Advantage of Balanced cable			
	DI boxes			
Impedance	Signal level			
	Mic			
	Line			
	Instrument			

2.4 Digital and analogue		R	A	G
The differences between digital and analogue technologies	Frequency response			
	Signal to noise ratio (dynamic range)			
	Headroom			
	Digital vs Analogue clipping			
	How components such as valves and transistors affect the sound			

2.5 Numeracy		R	A	G
How to display and interpret information graphically	Waveforms			
	EQ curves			
	Compressor responses			
	Amplitude envelopes			
	Interpreting frequency response and polar response graphs to undersand how sound quality is affected			
Technical numeracy	Decibels			
	Frequency in Hertz			
	Delay time in miliseconds/note value			
	Tempo in bpm			
	Synthesiser octave settings in feet			
	Coarse tuning in semitones			
	Fine tuning in cents			
	Feedback and effects mix percentages			
	Understanding how binary, formulae and logarithms and how they are used in music technology			
How to make calculations to describe sound waves	Waveform frequency, phase and amplitude			
2.6 Levels		**R**	**A**	**G**
Levels	Management of levels to prevent distortion and maximise signal-to-noise ratio			
Levels and metering scales	Decibel scales: when to use peak and RMS metering			
	Psycho-acoustics related to perceived volume			
The specifications of digital audio and how they affect sound quality	A/D and D/A converstion			
	Sample rate			
	Bit depth			
	Streaming bit rate			
	Uncompressed PCM audio formats			
	Data compressed formats e.g. mp3			