RAYNES PARK SIXTH FORM

Welcome to KS5 Music Tech Essential work

1. Microphone Theory Research (Powerpoint)

Task A)

A microphone is a scientific device that converts real audio waveforms into a digital format. As you can imagine there are many different microphones that are available on the market to suit a range of situations and budgets. As well as knowing the key manufacturers, it's vital to know how a microphone works and how it reacts to sounds in different ways to ensure you make the best selection for your need.

You should research the following elements of microphone theory, using images to support your finding. Please only write in your own words:

a) Polar Response
   a. Cardioid
   b. Hyper-cardioid
   c. Omni-directional
   d. Figure-8/bi-polar

b) Power
   a. Dynamic
   b. Condenser
   c. Ribbon

c) Frequency Response
   a. Small Diaphragm
   b. Medium Diaphragm
   c. Large Diaphragm

Task B)

When we come to use microphones in a recording studio or in a live environment, we can choose to use multiple microphones or single microphones to capture an individual sound source e.g. we could use two microphones to capture one trumpet. How we lay these microphones out in the space is called 'microphone configuration.'

Continue your research to find out about the following microphone placements and configurations, thinking about why we might experiment with different set ups to capture sounds in different ways:

a) Close-mic placement
b) Ambient mic placement
c) Spaced-pair
d) Coefficient placement (XY)
e) Mid-side placement
f) Describe the proximity effect

Task C)

From your research, you should now justify a selection of an appropriate microphone/s and placements and/or configurations for these following scenarios:

a) Recording a single flute player in a recording studio
b) A microphone for a lead singer in a punk band at a concert
c) Recording an acoustic guitar in a recording studio

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2. Academic Vocabulary List

Task: Write down definitions for the following Music Technology keywords and abbreviations:

MIDI	
ADC	
DAC	
Overdubbing	
Mixing	
Mastering	
Panning	
Levelling	
Feedback	
Gain	
EQ	
Filter	
Envelope	
Synthesis	
ADSR	
Pop Shield	
Plosive	
SPL	
Spill	
Reverb	
Ambience	
Depth of field	
Sidechain	
Compression	
Limiter	
Phase	
Balanced signal	
Unbalanced signal	
Mono	
Stereo	
Bouncing	
Signal to Noise ratio	

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3. Mixing Desk Diagram

Task) Every mixing console is divided into channel strips. You should complete the diagram below (using research) to find out about each parameter we have control over in a common channel strip for a LIVE CONCERT.

XLR Microphone Input

1/4" Line Input

1/4" Insert

Gain Control

Compression Effect Control

3-band EQ Section

Auxiliary Send

Effect Send

Pan Control

Mute (On/Off)

Fader/Volume Control

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4. Music Production Review

Task) Comparing vocal production.

Recording vocals is one of the most-important aspects to get 'right' in the studio because it will normally be the central focus of a song. However, producers often try to achieve different feels by recording vocals in different ways to try and exaggerate the mood of the song.

Although you are not going to analyse them in any great depth yet, find three examples of songs that you think have an interesting 'feel' in the vocal recording. I have created two for you (start by listening to them and reading my notes. You should then attempt to do the same.
NOTE: I'm not expecting you to do this with any depth of Music Technology so please don't worry about how a sound has been achieved. I'm more interested in seeing how you describe the effects of music and how it is recorded.

	Song	Notes
1	Sia – Breathe Me https://www.youtube.com/watch?v=SFGvmrJ5rjM	Interesting vocal feel as it almost sounds as if the perfomer is whispering in your ear. You can literally hear all the crackles in her voice as she sings very quietly and even hear her mouth movements at times. This gives the feel that the vocalist is singing directly to you and makes the song seem very personal.
2	Muse – Citizen Erased https://www.youtube.com/watch?v=BlKW77GS8Jg	This is a really rocky song and the vocal recording in the chorus at 1m38s actually distorts like an electric guitar. There is also then multiple vocal lines recorded over the top of each other (overdubbed) in different octaves (high and low.) This is all done by the same vocalist so couldn't be done live.
3		
4		
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