

# **Stage 2 Design and Technology**

## **Communication Products**

### **Sample Student Response**

#### **Assessment Type 3: Folio**

## Product Design

### Investigation

#### Need/Challenge

Due to the development of modern technologies, CD media has become a viable option for venues to retail copies of live performances held in their venues. The reduced cost of recording products has enabled almost anyone to edit and produce their own CD. The final product of this assignment will be used for educational purposes and a promo package for myself, as the engineer.

#### Design Brief

Design and manufacture a digital multi track recording. The final product must be a mastered CD, complete with 5 tracks or more and packaging.

#### Design Criteria/Constraints

The CD must consist of at least 5 songs, with at least 5 separate tracks. Instrumentation and style of music is open to choice. Audio processing techniques are to be used in the final mix. If work is carried out in a group, each student is required to play the role of engineer and producer. The packaging for the CD must include a minimum of a front, inside front and back cover. As part of the final CD all copyright issues need to be addressed.

#### Intention

To record a one day Youth Conference: . The band for the day consists of drums, three guitars, bass, keys and seven different singers (no more than 5 at a time 'though) The final product will consist of 5 songs and a video presented in a CD format, complete with packaging.

#### Investigating

Clear, comprehensive identification of need.

Well-considered creation of an initial design brief based on needs.

## Analysis of existing products and systems

### Critical listening

Research was conducted into existing products to gain inspiration for album artwork and mixing styles.

#### Investigating

Purposeful investigation and critical analysis of characteristics of a broad variety of existing products.

Image of CD cover removed due to copyright

With

Written and performed by \_\_\_\_\_, this is a guitar and vocally driven song. Drums are used with kick drum, promoting a strong and powerful beat. As a worship song the instrumentation transitions through soft and quiet into loud and exciting, making use of faster drum beats and the addition of bass guitar to change the mood throughout the song. The album artwork is a collage, made up of numerous images with the album title and band name over the top.

Like \_\_\_\_\_ pieces, the song is driven by guitar. The addition of a mellow grand and excited synths makes for a busy song instrumentally but a simple and calming song vocally. The song has been written to be inspirational to the listener. The oddly timed instrumental (drums 3:4 and everything else 4:4) makes the mind wander.

Image of CD cover removed due to copyright

Image of CD cover removed due to copyright

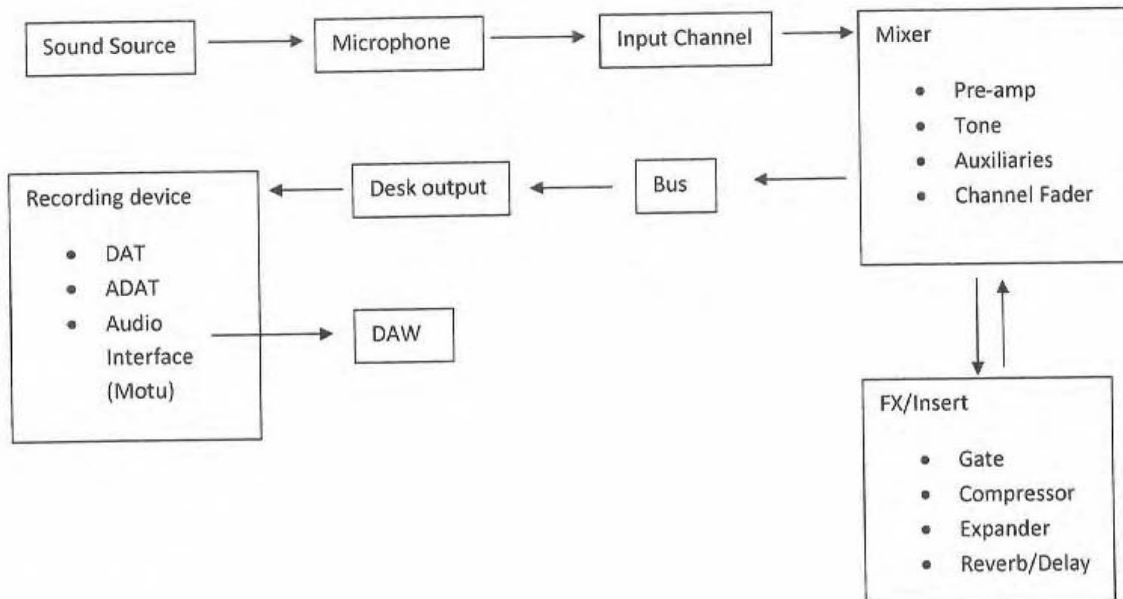
By \_\_\_\_\_, this has a classical piano backbone overlaid with drums and guitar to give it a rock feel. The stereo sonic picture of the song puts the listener on stage with the drummer. The combination of jazz, rock and classic styles makes for a fascinating song for the listener. The album artwork for the Greatest Hits album consists of a dark beach background and a bright red couch. The artist's name and album details are displayed in small text.

A song by the \_\_\_\_\_ of a Rock genre. It is a slower song, lead by an acoustic guitar. The song has a single vocal track with delay and reverb. As the song progresses, the tempo builds. This is done using the drum beat and synth track. The cover image is a simplistic design, consisting only of a freeway overpass. The name, album and artist are also displayed but in a very simple text between two roadways.

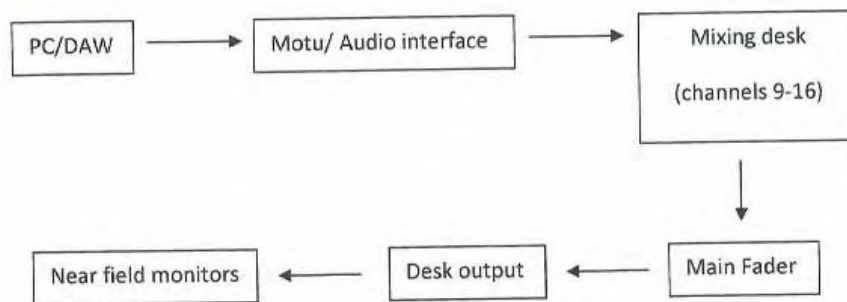
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### Analysis of systems (Recording Studio)

#### Input Signal Flow



#### Output Signal Flow



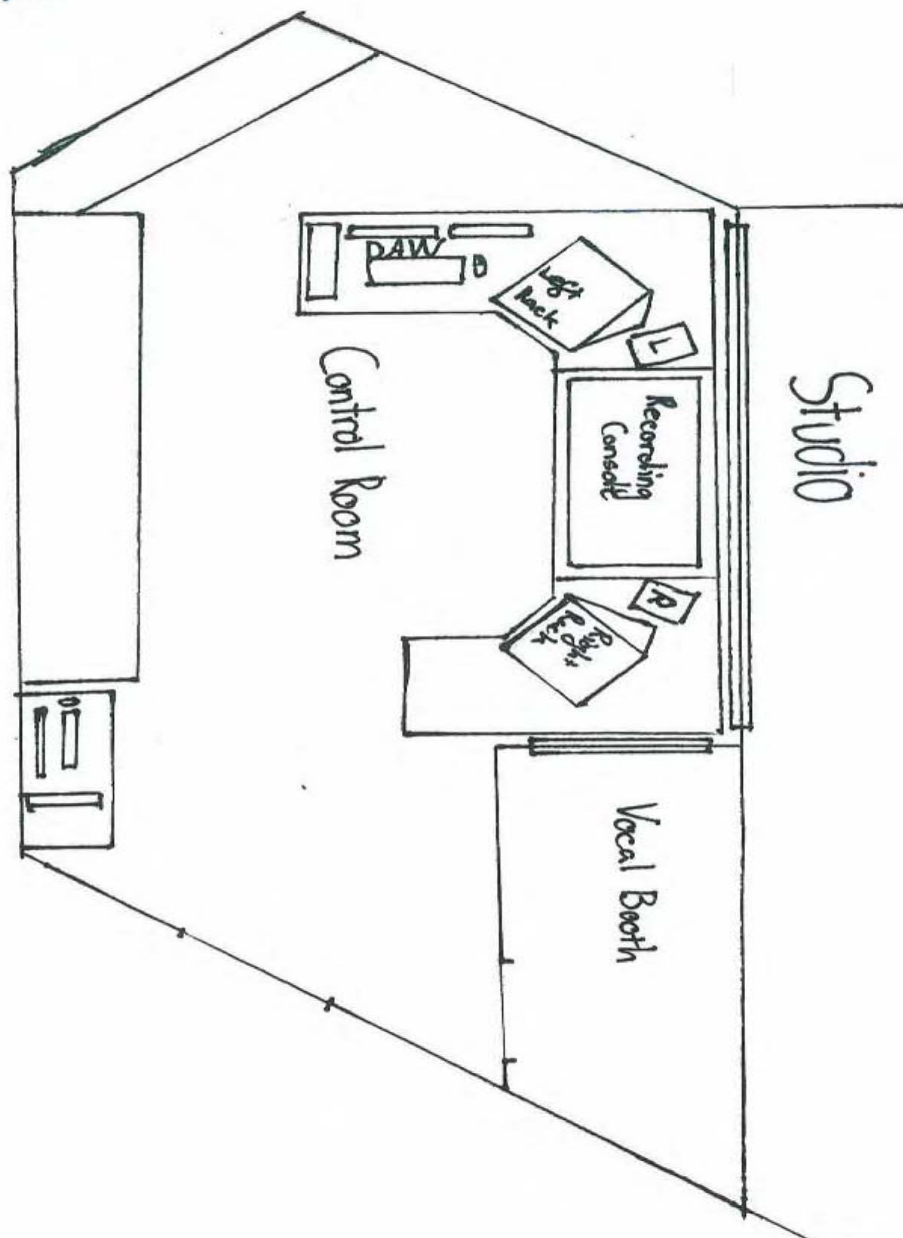
#### Investigating

Some basic description of material options.

#### Comment

Further descriptions and explanations would clarify content.

Studio Layout





## What impact have digital music distribution methods had on unsigned artists?

Modern media formats, and the methods of music distribution that have evolved as a result, have caused media marketing to change. These new distribution methods have not only affected artists that are signed with a major record label but also unsigned artists.

In the last few decades we have seen media formats change enormously. First there was the vinyl record, which was released in 1931. The cassette tape was then released in 1962, followed by the CD in 1982. Today, everything is digital. With modern compression techniques, people can fit thousands of songs on a single USB thumb-drive. The MP3 format (introduced in 1994) makes use of compression techniques, removing sounds outside of the human hearing range, and also repeated frequencies. This format was quickly embraced as they saw it as an opportunity to legitimately sell music over the internet. They then developed that original idea now own the biggest internet media store:

The internet and the new distribution methods have had both a positive and negative impact on artists. Music is more accessible through sites like Spotify and iTunes but the internet has also made it easier for people to illegally share pirated music through sites like YouTube. Many signed artists are unsuccessfully trying to charge for their music, when potential customers can obtain virtually anything for free. As a result of illegal downloads, artists are resorting to other methods of marketing. One marketing strategy that is becoming increasingly popular, is to give away free songs to customers when they purchase other products from an artist. An example of an artist using this technique is Justin Bieber who in 2005 decided to release free tracks with the tracks that consumers purchase.

New, unsigned artists primarily want to get their name out to their customers and don't care about profits. A new band will often create amateur videos and post them on YouTube. With the number of people who can access sites like these, they will soon be noticed and can then concentrate on generating income from other forms of promotion, "making money because of their music rather than from it". With the launch of the

iTunes Music Store in 2003 and other online media stores that came with it, unsigned artists have been able to sell their songs online. These online sales have waived major production costs involved with the sale of CDs. It is, however, still hard for them to sell their music legitimately and successfully.

With the development of affordable video and audio recording products it has become easier for unsigned artists to record, edit and produce their own work. These developments have taken out the record labels or the "Middle Man" and in turn have made it easier for artists to receive a larger return on their investments. Though studio produced albums will always sound better than an album recorded in the garage at home, many editing programs now available have become user friendly - enabling almost anyone to get a sound that many people will like. This then only leaves the artist with the dilemma of, 'Now what?' A record company is more likely to invest in a group that have been able to successfully sell their own albums. Many bands that compete in competitions like 'The X Factor' are given contracts even if they don't win, as result of the effort they put into promoting themselves.

### Investigating

Focused and perceptive investigation of impact of products or systems on individuals and/or the environment.

**Comment**  
References are well documented.

Though there are both positives and negatives to modern media distribution methods, the unsigned artists have come out on top. With modern techniques and software, unsigned artists are easily able to record, edit, produce and distribute their music. Taking out the middle-man means that they earn more money and with the internet, their creations can easily be found by the world.

#### Bibliography

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"LP Record." *Wikipedia, the Free Encyclopedia*. Web. 22 Mar. 2011. <[http://en.wikipedia.org/wiki/LP\\_record](http://en.wikipedia.org/wiki/LP_record)>.

"Why Give Music Away for Free?" *New Music Strategies*. Web. 22 Mar. 2011.

<<http://newmusicstrategies.com/2008/12/31/why-give-music-away-for-free/>>.

## Planning

The proposed CD will include 5 audio tracks and one video track. Each track will be a cover, performed by the band. The band consists of drums, three guitars, bass, keys and 7 different vocalists (Maximum of 5 at one time).

Recording for the CD will be carried out during the Youth Conference held by . For this reason, no overdub can be done. As recording will take place during a live event, there may be issues with bleed between microphones and unfortunately this can't be eliminated. This problem will need to be rectified later in the editing stage.

Using the footage from the cameras operating at the event a 'bonus' track will be part of the album. The bonus track will be a copy of one song in a video format. All audio editing will be carried out in as this is the platform the sources will be originally recorded to. The video will be transferred for each camera and edited with or .

Microphone choices for the day will be based upon tests already carried out. For this reason Rode NT5s will be used on drums. As there was little difference between the Shure SM57 and Rode NT4, a SM57 will be used on the guitar amp. As a result of recordings being carried out live, wireless microphones will be used for singers to suit the live event, even though these will not be of an equivalent sound quality to a studio microphone.

Setup will be conducted the day before the event, with a rehearsal. On the day of the event 3 sessions will be conducted and from the recordings of each of these sessions, the 6 best tracks will be chosen.

### Investigating

Competent analysis of product material options.

### Planning

Appropriate solutions to an identified design brief.



### Track Sheet

#### Client Details

Group Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Mobile \_\_\_\_\_

Email \_\_\_\_\_

#### Engineer/Studio Details

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Mobile \_\_\_\_\_

Email \_\_\_\_\_

#### Authoring Details

Composers \_\_\_\_\_

Track name/details \_\_\_\_\_

Engineer \_\_\_\_\_

Producer \_\_\_\_\_

Performers \_\_\_\_\_

#### Tracks

Track/Input Channel	Source	Microphone	Position	Notes
1	Leader	Wireless	Roaming	
2	Vocal 1	Wireless	Front stage	
3	Vocal 2	Wireless	Front stage	
4		Wireless	Center Front stage	Tall Stand
5	Vocal 4	Wireless	Front stage	
6	Vocal 5	Wireless	Front stage	
7	Keys L	DI	Mid stage OP	
8	Key R	DI	Mid stage OP	
9	Gtr -	DI	Center Front stage	
10	Gtr -	DI	Mid stage PS	
11	Gtr -	Shure SM 57	Mid stage PS	Short Stand
12	Bass	DI	Mid stage OP	
13	Kick	Beyer Dynamic	Center stage Rear	Extra Short Stand
14	Snare	Rode NT5	Center stage Rear	Short Stand
15	OH L	Rode NT5	Center stage Rear	Tall Stand
16	Oh R	Rode NT5	Center stage Rear	Tall Stand

#### Notes

Vocals will vary through out the day.

First session:

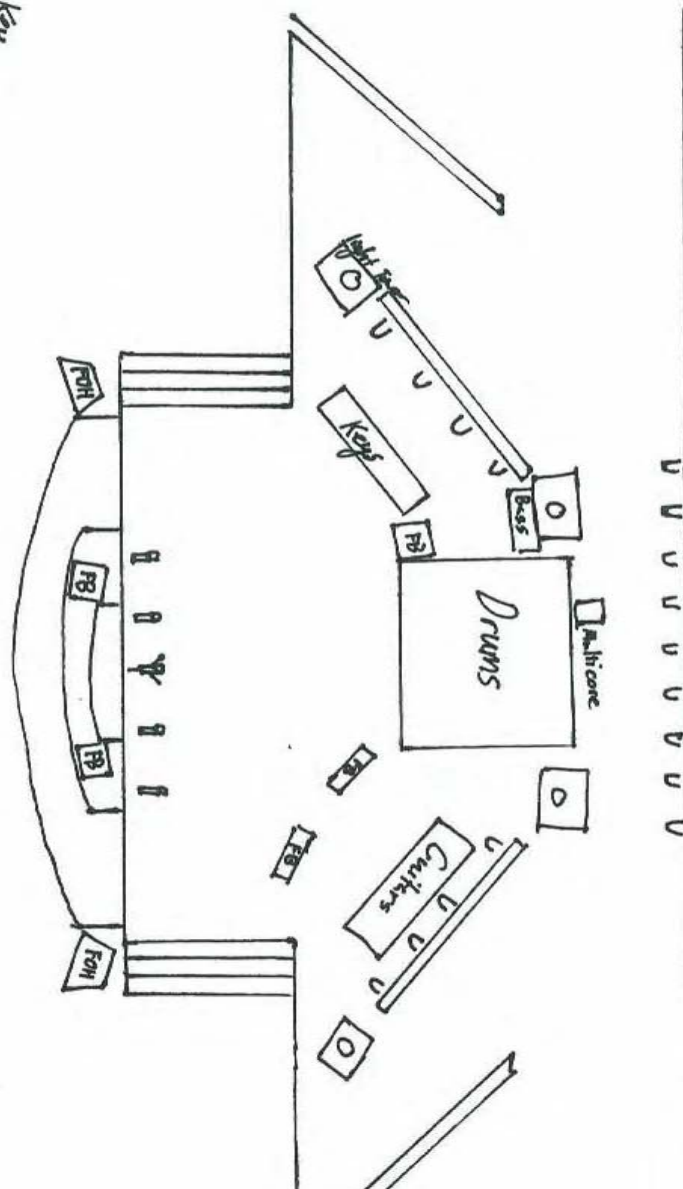
Second session:

Third session:

will be playing drums for the last session

# Event layout

Key  
 V - Venue  
 Q - vocal microphone  
 FB - Foldback/Stage monitor  
 FOH - Front of House



## Planning

Competent communication of a product design idea using appropriate technical language.

Evidence of testing, modification and validation of ideas or procedures is not addressed.

## Product Evaluation

### Design Brief Requirements

The final product, presented in CD format was completed with 5 audio tracks and one video track. Each track was mastered for a constant feel throughout the album. Packaging consisted of a front, inside front and back cover and the appropriate copyright details.

### Design Criteria/Constraints

The style of the album is that of Christian rock/worship. Each song was mixed from at least 15 different recorded tracks. Each mix is a result of numerous processing techniques; including the use of gates, compressors, EQ's and FX's. As a group, each member played a role setting up and operating equipment. Each member then engineered and produced their own album from the recorded tracks. The Album packaging consists of a booklet, printed CD and back cover. As part of the Album all copyright issues were also addressed.

### Review of Quality Control

Mastered to constant levels and normalized during the burning process, the CD will reliably suit any speaker. Correct operating procedures were followed during the setup, running and pack-up of the event. Equipment was powered up and down in the correct order and appropriate volume guidelines were followed. Each track was compared with a commercial mix in order to ensure quality. An efficient prototyping process was used to reduce waste of product materials and time. An example of this was the use of USBs for transporting audio, rather than repeatedly burning CDs.

### Changes to Original Design Solution

The original band changed numerous times, due to availability of band members. Once recording of 'I' was confirmed and initial plans were made, many details remained the same throughout the rest of the process. As a live recording there were glitches during the day, for example one microphone died, this meant that some changes were made in replacing dead microphones.

### Identification of Strengths and Weaknesses

The final product resembles that of a professional product. Though the processes involved in designing, producing, editing and manufacturing the product took longer than initially thought the final product is of suitable standard. The main problems during the production process were as a result of format issues. I was restricted to using 'I' wouldn't accept the video format and due to time constraints I couldn't re-encode the file. Similar problems existed with audio, when attempts were made to correct the singers' pitching. Looking past the processes involved in making the product, the final design is great.

If this assignment was attempted again I would ensure video and audio formats were compatible with the software and hardware used in the editing stages. I would also make improvements to time management as the format issues caused the product to be delayed.

#### Evaluating

Well considered evaluation of product success against listed design brief requirements.

#### Evaluating

Well considered and detailed evaluation of effectiveness of product realisation.

#### Evaluating

Considered reflection on materials with appropriate recommendations.

#### Evaluating

(E4 not addressed)

### Evaluation of Skills Development

As we were recording a live event, many skills were gained during . I was required to coordinate video, sound and lighting all at once and this improved my ability to multi-task. I also learnt leadership skills and team management, coordinating up to 7 people at a time. Listening to the recordings from earlier this year or even the first songs I mixed in the album, I can hear a noticeable difference in sound quality. This shows that I have gained more skills and that I am implementing new techniques during the editing and mixing process.

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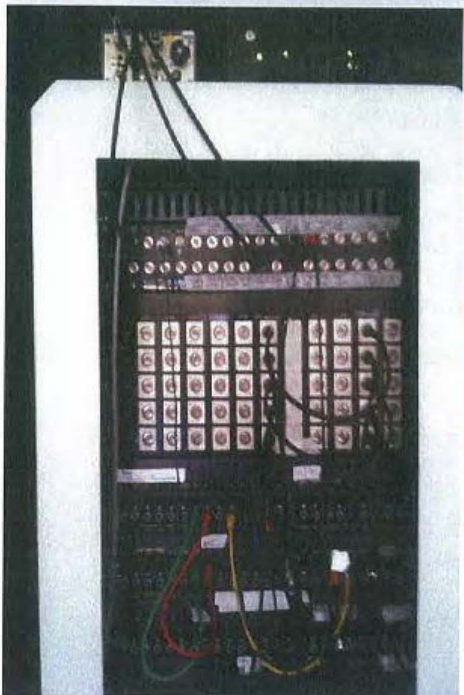
### Images of Product and Production Process



#### Comment

Evidence of production processes and final product confirm previous documentation.





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copyright*







## Performance Standards for Stage 2 Design and Technology

	Investigating	Planning	Producing	Evaluating
<b>A</b>	<p>Clear, comprehensive, and well-considered identification of a need, problem, or challenge.</p> <p>Thorough and insightful creation and validation of initial design brief based on needs analysis and task identification.</p> <p>Purposeful investigation and critical analysis of the characteristics of a broad variety of existing products, processes, systems, and/or production techniques.</p> <p>In-depth investigation into product material options and focused and thorough critical analysis for product use.</p> <p>Focused and perceptive investigation into the impact of products or systems on individuals, society, and/or the environment.</p>	<p>In-depth analysis of information to develop imaginative, innovative, and enterprising solutions to an identified design brief.</p> <p>Accomplished communication of a variety of refined product design ideas, consistently using relevant technical language.</p> <p>Purposeful testing and validation of ideas or procedures.</p>	<p>Sophisticated application of appropriate skills, processes, procedures, and techniques to create a product or system to a precise or polished standard and specification.</p> <p>Accomplished use of resources, equipment, and materials to create a product or system safely and accurately.</p> <p>Accomplished and resourceful development of solutions to technical problems that may arise during product or system realisation.</p>	<p>Insightful and well-considered evaluation of product success against design brief requirements.</p> <p>Insightful and detailed evaluation of the effectiveness of the product or system realisation process.</p> <p>Refined and well-considered reflection on materials, ideas, and procedures, with sophisticated recommendations.</p> <p>Resourceful and well-informed analysis of the impact of the product or system on individuals, society, and/or the environment.</p>
<b>B</b>	<p>Well-considered identification of a need, problem, or challenge.</p> <p>Well-considered creation and validation of an initial design brief based on needs analysis and task identification.</p> <p>Thoughtful investigation and analysis of the characteristics of a variety of existing products, processes, systems, and/or production techniques.</p> <p>Detailed investigation into product material options and thorough analysis for product use.</p> <p>Some depth of investigation into the impact of products or systems on individuals, society, and/or the environment.</p>	<p>Thoughtful analysis of information to develop enterprising solutions to an identified design brief.</p> <p>Capable communication of different quality product design ideas using relevant technical language.</p> <p>Thoughtful testing, modification, and validation of ideas or procedures.</p>	<p>Capable application of appropriate skills, processes, procedures, and techniques to create a product or system to a mostly precise or polished standard and specification.</p> <p>Capable use of resources, equipment, and materials to create a product or system safely and mostly accurately.</p> <p>Thoughtful development of solutions to technical problems that may arise during product or system realisation.</p>	<p>Well-considered evaluation of product success against design brief requirements.</p> <p>Well-considered and detailed evaluation of the effectiveness of the product or system realisation process.</p> <p>Well-considered reflection on materials, ideas, and procedures, with thoughtful recommendations.</p> <p>Well-informed analysis of the impact of the product or system on individuals, society, and/or the environment.</p>

### Additional Comments

This sample overall is illustrative of a B+ standard. This takes into account that both **PL3** and **E4** are not addressed.



	Investigating	Planning	Producing	Evaluating
<b>C</b>	<p>Considered identification of a need, problem, or challenge.</p> <p>Considered creation and validation of an initial design brief based on needs analysis and task identification.</p> <p>Competent investigation of the characteristics of some existing products, processes, systems, and/or production techniques.</p> <p>Competent investigation into product material options and analysis for product use.</p> <p>Generally thoughtful investigation into the impact of products or systems on individuals, society, and/or the environment.</p>	<p>Analysis of information to develop appropriate solutions to an identified design brief.</p> <p>Competent communication of product design ideas using appropriate technical language.</p> <p>Competent testing, modification, and validation of ideas or procedures.</p>	<p>Competent application of skills, processes, procedures, and techniques to create a product or system to an appropriate standard and specification.</p> <p>Competent use of resources, equipment, and materials to create a product or system safely and generally accurately.</p> <p>Development of appropriate solutions to technical problems that may arise during product or system realisation.</p>	<p>Considered evaluation of product success against design brief requirements.</p> <p>Considered evaluation of the effectiveness of the product or system realisation process.</p> <p>Considered reflection on materials, ideas, and procedures, with appropriate recommendations.</p> <p>Informed analysis of the impact of the product or system on individuals, society, and/or the environment.</p>
<b>D</b>	<p>Identification of a basic need, problem, or challenge.</p> <p>Creation of a basic initial design brief with some consideration of a needs analysis.</p> <p>Identification of the characteristics of some existing products, processes, systems, or production techniques.</p> <p>Some basic description of material options.</p> <p>Some description of the impact of products or systems on individuals, society, or the environment.</p>	<p>Some identification of information to attempt basic solutions to an identified design brief.</p> <p>Basic communication of some product design ideas with some use of appropriate technical language.</p> <p>Partial testing and some modification of ideas or procedures.</p>	<p>Partial application of skills, processes, procedures, and techniques to make one or more articles to a limited standard and specification.</p> <p>Some use of basic resources, equipment, or materials to create a product or system, with some consideration of safety aspects.</p> <p>Partial development of some basic solutions to technical problems that may arise during product or system realisation.</p>	<p>Description of product progress, with elements of basic testing against design brief requirements.</p> <p>Some description of the effectiveness of the product or system realisation process.</p> <p>Superficial reflection on or description of materials, ideas, or procedures, with basic recommendations.</p> <p>Some consideration of the impact of the product on individuals, society, or the environment.</p>
<b>E</b>	<p>Limited identification of a need, problem, or challenge.</p> <p>Creation of a very basic initial design brief, with support.</p> <p>Statement of one or more characteristics of an existing product, process, system, or production technique.</p> <p>Limited description of one or more product material options.</p> <p>Identification of one impact of a product or system on individuals, society, or the environment.</p>	<p>Attempted identification of some information to develop limited solutions to an identified design brief.</p> <p>Limited communication of one or more product design ideas.</p> <p>Some attempt at testing and limited modification of an idea or procedure.</p>	<p>Attempted application of one or more skills, to follow an appropriate process, procedure, or technique.</p> <p>Attempted use of resources, equipment, or materials, with emerging awareness of safety issues.</p> <p>Some attempted description of problems that may arise during product or system realisation.</p>	<p>Identification of some product progress, with limited testing.</p> <p>Identification of some aspects of the effectiveness of the product or system realisation process.</p> <p>Identification rather than description of materials, ideas, or procedures, with one or more recommendations.</p> <p>Emerging recognition of one or more of the impacts of the product on individuals, society, or the environment.</p>