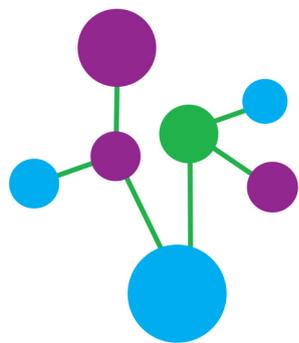


NAME: \_\_\_\_\_

**TERM  
3&4**

**YEAR 11  
FOUNDATION**



**PLYMPTON ACADEMY  
HANDBOOK**

**TERM 3&4**

# HOMework PLANNER

YEAR 11	X BAND		Y BAND	
	Subject 1	Subject 2	Subject 1	Subject 2
Monday	Option Q	Option P	Option Q	Option P
Tuesday	English	A:Science & B:Maths	Science	A: Maths & B: English
Wednesday	Option N	Science	Option N	A: English & B: Maths
Thursday	Science		Science	
Friday	A:Maths & B:Science	Option R	Science	Option R

## When I am going to do my homework

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Before school							
Lunch time							
Between 3.00pm and 4.00pm							
Between 4.00pm and 5.00pm							
Between 5.00pm and 6.00pm							
Between 6.00pm and 7.00pm							
Between 7.00pm and 8.00pm							
Between 8.00pm and 9.00pm							

**Composition** The layout of information or an image is important. The following principles should be followed.

**Centre of interest** The area that first attracts attention. A strong form or use of colour can be used to direct the eye to this part of your image.

**Symmetrical Balance** This provides a sense of balance suggesting all parts of the image are equal. This is created by making the image the same on both sides using symmetry.

**Asymmetrical Balance** A lack of balance can also be used to make a visual statement, but still provide equality to all sides of the image.

**Unity** Assuring your sign has a sense of harmony use similar lines, organic shapes and fonts throughout the image/sign.

**Contrast** Purposefully creating a sense of visual discord, disorder, in order to create an area of emphasis throughout the image.

**Movement** Creates a visual flow in the image or sign that guides the reader through the information.

**Repetition** Recurring use of certain design elements is another way to engage the viewer

Tips for creating good composition:

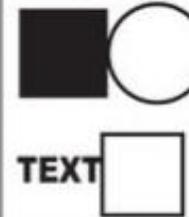
### 1. Overlap

Place objects slightly over one another. This will get the eye to move from one element to another. Objects should not be touching each other by edges ("no kissing allowed!"). Avoid isolation. Build a relationship between objects.

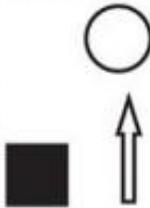
Good overlapping



Avoid kissing



Avoid isolation



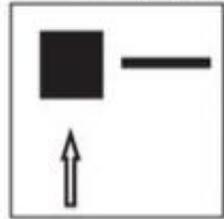
### 2. Crop

Consider having objects go off the edge of the page. This gets the viewer in and out of the picture. Avoid floating objects within the edges of the page.

Have object go off the page



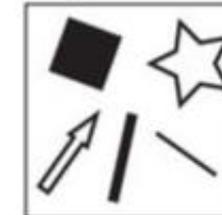
Avoid floating objects



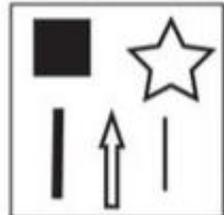
### 3. Rotate:

Consider placing objects at an angle. Things that are tilted create a more dynamic composition. Artwork with objects that are perfectly lined up with the edge can be boring.

Tilt objects



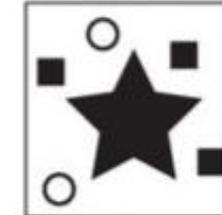
Avoid all objects upright



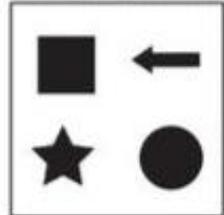
### 4. Focal Point

Create an area of importance. Give the viewer something to focus on. One way to achieve this is through size variation. Try not to have all elements the same size. Another way to create focus is through color dominance.

Use size & color variation



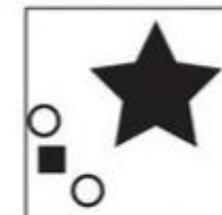
Avoid all objects the same size



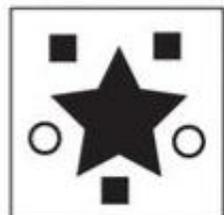
### 5. Off-Centering

Avoid placing objects directly in the center of the page. Think about placing objects slightly to one side. This will create a more interesting composition. Try to keep elements balanced as you do this. For example, one large object could be balanced by 3 smaller ones. (Note: this does not mean that a symmetrical design cannot be successful.)

Off-center objects for interest



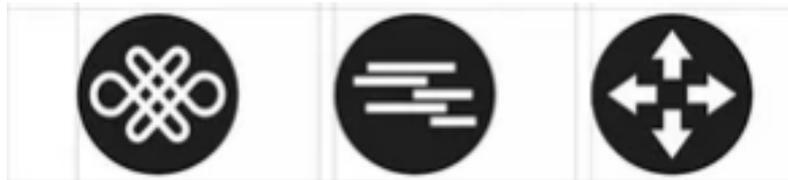
Centered can be boring



Centre of interest

Symmetrical Balance

Asymmetrical Balance



Unity

Contrast

Movement

# ANALYSING ARTIST'S WORK Name, Title, Date & Image

## 1. INTRODUCTION

**Describe** the Artist. Consider the following:

- Who created the work?
- When and where the work was made?
- What themes does the artist/photographer explore & the general style of their work?
- What art movement are they affiliated with?

## 2. CONTEXT

**Explain** what influenced the Artist to create this artwork/photograph. Consider the following:

- When was it created? Describe the period/context when/where the work was made?
- What was happening in the world at that time that might have influenced the artwork?
- How does the period/context influence the work?
- What else was happening when the work was made (art, life, politics) that may have influenced the artist and their work?

## 3. CONTENT

**Describe** the photograph as though you were explaining it to someone who cannot see it.

**Explain** why the photographer has create the image. Consider the following:

- What type of photograph is it?
- What is the photo about/whatis the subject matter?
- What can you see (foreground, middle ground, background)?
- What is the most important thing in the photo?
- Does the Title express the Theme behind the work?
- Where and when was it taken (i.e., in a studio, on location, etc)?
- Is it a real event or is it staged?

## 4. THE FORMAL ELEMENTS

- **Describe** what formal elements are in the artwork.
- **Explain** why the artist has used them.
- **Explain** how do these elements convey meaning or create an impact? Give examples.

**Line**  
**Tone**  
**Colour**  
**Form**  
**Shape**  
**Texture**  
**Pattern**  
**Space**

## 5. PROCESS

**Explain** how the artwork/photograph was produced. Consider the following:

### Photograph

- Is it digital or film?
  - What techniques have been used?
  - What settings were used?
  - Is the image realistic or has it been manipulated in any way?
- Artwork**
- What medium/media?
  - What techniques have been used?
  - What size is the artwork? What (if any) impact does this have on the viewer?

## 6. MOOD

**Describe** the mood of the artwork. Consider the following:

- Does the work capture a mood, feeling or emotion?
- How would you describe the mood of the image?
- How has this been achieved?

## 7. CONNECTIONS

- **Compare** this work to others that may be of a similar theme or made in a similar way.
- **Review** and **relate** these works to your own project. Consider the following:
  - How does it link to your project?
  - What ideas does it give you?
  - What have you learnt from analysing this artwork/artist?

## 8. Emulate (for Art)

**Create** your own high quality practical response to the artwork using similar media

Read through to check your work carefully before submission.

Every image has the elements of Art included within it, all Images can be analysed using the questions on the left and the use of the formal elements provide a structure to the analysis.

<h1>LINE</h1>	the path left by a moving point, e.g. a pencil or a brush dipped in paint. It can take many forms. e.g. horizontal, diagonal or curved.
<h1>-tone</h1>	means the lightness or darkness of something. This could be a <u>shade</u> or how <u>dark</u> or <u>light</u> a <u>colour</u> appears
<h1>TEXTURE</h1>	the surface quality of something, the way something feels or looks like it feels. There are two types : <u>Actual</u> and <u>Visual</u>
<h1>SHAPE</h1>	an area enclosed by a <u>line</u> . It could be just an outline or it could be <u>shaded</u> in.
<h1>PATTERN</h1>	a design that is created by repeating <u>lines</u> , <u>shapes</u> , <u>tones</u> or <u>colours</u> . can be <u>manmade</u> , like a <u>design</u> on fabric, or <u>natural</u> , such as the markings on animal fur.
<h1>COLOUR</h1>	There are 2 types including Primary and Secondary . By mixing any two <u>Primary</u> together we get a <u>Secondary</u>

## Vocabulary

### Emphasis

The focal point of an artwork-: the point where the artist wants the viewer's attention to be.

### Variety

The differences found in a work, of art: the thickness of lines, the sizes of objects, the colors used. The differences can be related, a variation on a theme.

### Unity

The whole or total effect of a work of art resulting from the way the elements have been put together. A work has unity when all its parts are linked together in some way.

### Balance

The way parts of a composition are placed together to create a sense of unity.. Balance may be symmetrical with one half of a design being almost a mirror image of the other half. Or balance may be asymmetrical, with two halves that are very different.

### Rhythm

The movement created by the repetition of such visual elements as lines, shapes and colors.

**Contrast** The use of opposites in close proximity. There can be contrast in color, shape, line or texture. Bold contrast - black and white, subtle contrast - soft colors.

### Harmony

An overall agreement between all the parts of a work of art. Harmony often involves the use of similar elements with slight variations.

### Proportion

The size relationship between the parts and the whole, or between one part and another. An artist uses proportion to convey a sense of space of depth, and may also use it for emphasis.

## SHAPE PSYCHOLOGY

SHAPE CAN ALSO REINFORCE THE PILARS OF YOUR BRAND



**CIRCLES**  
COMMUNITY  
UNITY  
COMPLETE



**SQUARES**  
BALANCE  
PROFESSIONALISM  
SECURITY



**TRIANGLES**  
POWER  
MASCULINITY  
STABILITY



**Using a circle** or ring can represent a positive emotional message, love and unity, togetherness.

**The square** can represent stability and balance , it is a strong message and represents professional and efficient.

**The triangle** can mean mystery and power it can be used to represent scifi, religious or law related brands.

**Vertical lines** communicate commitment and strength. When use in a logo it reflects goals and progress.

**Horizontal lines** give a sense of moving through time. It conveys futuristic and technology

# RED

MEANS:

passionate  
**active**  
EXCITING  
bold energy  
youthful  
**physical**  
PIONEERING  
leader willpower  
confidence  
ambition  
**POWER**

BRANDS:



# PINK

MEANS:

love **calm**  
respect  
**WARMTH**  
longterm  
feminine  
intuitive **care**  
assertive  
sensitive  
NURTURE  
**possibilities**  
UNCONDITIONAL

BRANDS:



# PURPLE

MEANS:

**DEEP**  
creativity  
unconventional  
original  
**stimulation**  
individual  
WEALTHmodesty  
**compassion**  
DISTINGUISHED  
respectable  
**fantasy**

BRANDS:



# NAVY

MEANS:

trust order  
**LOYALTY**  
**sincere**  
authority  
communication  
confidence  
**PEACE** integrity  
control  
responsible  
**success**  
CALM masculine

BRANDS:



# GREEN

MEANS:

BALANCE  
**growth**  
**restore**  
sanctuary  
EQUILIBRIUM  
positivityNATURE  
**generous**  
clarity  
prosperity  
good judgement  
safety stable

BRANDS:



# BLUE

MEANS:

**spirit**  
perspective  
**CONTENT**  
control  
**rescue**  
determination  
self-sufficient  
modern goals  
aware **ambition**  
**OPEN**  
ambition

BRANDS:



# ORANGE

MEANS:

**INSTINCT**  
WARMTH  
gut reaction  
optimistic  
spontaneity  
**extrovert**  
social **FREEDOM**  
impulse  
motivation

BRANDS:



### Component 3: Performing to a brief

What is performing to a brief? To create a performance based on an idea, target audience and theme set by an exam board or class teacher.

## Year 11 Acting

### Title- Component 3

### Aims and intentions

Theme of the piece  
Intended meaning for an audience  
Plot/ storyline  
Genre  
Concept  
Style

### Design

Staging  
Costume  
Set  
Cast  
Props  
Sound  
Music  
Symbolism  
Semiotics

### Collaboration

Working with others  
Sharing ideas  
Listening to ideas  
Giving tasks  
Supporting others  
Giving time  
Focus  
Rehearse

### Written element

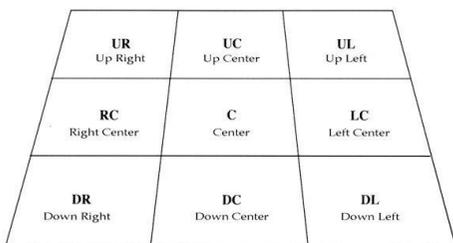
Logbook of ideas  
Mindmap of ideas  
Written monologues  
Written scenes  
To write the purpose of the piece?

### Devising skills and techniques

Sharing ideas  
Facial Expressions  
Physicalization  
Semiotics  
Change of voice  
Structuring a performance  
Writing a monologue/ scene  
Body language

### What is Component 3?

Component 3 is titled 'performing to a brief'. This includes working as a group to create a devised performance that relates to the brief set by the exam board. You must create a workshop performance that communicates ideas and creative intentions to an audience of local people. You join in with discussions and practical activities to shape the original material. You will need to keep records of your work to answer three milestone questions in controlled conditions. The designers will need to design a particular aspect for one group and will need to pitch their ideas in place of a performance. You will need to partake in research, practical activities, workshops and explorations in order to develop your performance work.



Stage Diagram

### Technical Skills:

Characterisation  
Facial Expressions  
Body Language (Mannerisms, Gestures, Posture)  
Reactions/Interactions  
Spatial Awareness  
Vocal Skills (Clarity, Articulation, Projection, Breath Control, Pause, Pace, Tone, Pitch, Diction and Articulation)

### Interpretative Skills:

Energy  
Character  
Mood  
Atmosphere  
Stage presence  
Showing time and place  
Presenting a character  
Creating humour or emotion.  
Emphasis / rapor  
Expression

### Stylistic Qualities:

Characteristics particular to the style or genre  
Realising costume or set design  
Treatment of theme/issue  
Production elements  
Form/structure/narrative  
Style/genre  
Contextual influences  
Influences by other Practitioners

Audience

Stage

Stage

Apron

Audience

Stage

Audience

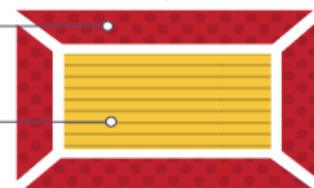
Stage

Audience

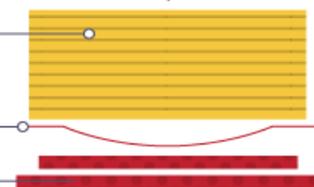
Stage

Audience

Arena stage



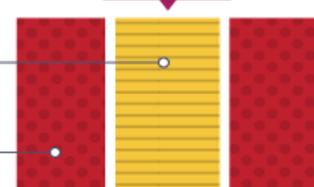
Proscenium theatre



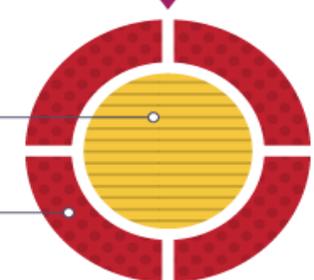
Thrust stage



Traverse



Theatre in the round



# Year 11 Acting

## Title- Component 3

### Bertolt Brecht EPIC THEATRE

#### Who is Brecht?

Brecht works with political theatre and is the founder of Epic Theatre. He wanted to question his audiences and make them think. Brecht constantly reminded his audience that they were in a theatre and not real life, making them question political and social issues.

- 1) He was born on the 10th of February 1898 in Germany.
- 2) Before he was a playwright, he was a medical orderly in WWI.
- 3) He went to Munich and then to Berlin to pursue a career in theatre. This came to a halt when Hitler and the Nazis came to power in 1933.
- 4) Reichstag Fire: 4000 communists and party members were rounded up but Brecht was not home.
- 5) In 1941, Brecht became a resident in the USA but returned to Europe in 1947.
- 6) He appeared in front of the house Un-American Activities Committee, where they targeted intellectuals.
- 7) He died in 1956 after he established the Berliner Ensemble
- 8) The dark time period he lived in gave him a strong political voice.
- 9) He had a talent of creating a dynamic theatrical style to express his views.

Brecht opposed Naturalism when it was starting to grow in popularity and was starting to become used by many practitioners - like Stanislavski. Naturalistic theatre is when the audience are completely invested in the characters and story on stage. Brecht wanted his theatre to "change the world" rather than just entertain people. He had always rejected naturalistic theatre style that tried to present the audience with a perfect illusion of reality. Brecht required his actors to go beyond Stanislavski and to incorporate a social attitude or judgment into their portrayal.

#### Why did Brecht develop Epic Theatre?

- To "change the world"
- To make rational judgments about the political aspects of his work.
- To see the world as it is.

#### Theatre companies that are inspired by Brecht:

- Splendid Theatre Company: Splendid is a theatre company who "create challenging, vibrant theatre for young people."(Splendid, 2020)

#### Some of Brecht's works:

- Mother Courage and her children
- Threepenny Opera



#### Key words

**Genre-** a style or category.

**Epic Theatre-** Epic theatre, (German: episches Theater) form of didactic drama presenting a series of loosely connected scenes that avoid illusion and often interrupt the story line to address the audience directly with analysis, argument, or documentation.

**Political-** relating to the government or public affairs of a country.

**Symbolism-** an artistic and poetic movement or style using symbolic images and indirect suggestion to express mystical ideas, emotions, and states of mind.

**Gesture-** a movement of part of the body, especially a hand or the head, to express an idea or meaning.

Stylised movement

**Physicality-** the fact of relating to the body as opposed to the mind; physical presence.

**Facial Expressions-** To use the face to express emotion.

**Body Language-** the conscious and unconscious movements and postures by which attitudes and feelings are communicated.

**Devising-** To plan, invent, create something of your own.

**Choreographing-** To compose the sequence of steps  
Stimulus

**Collaboration-** to work with others towards a common goal.

**Alienation:** ensures that the audience are aware they are watching a play and not real life - focus on issues and not story.

**Direct Address:** talking to directly to the audience.

**Multi-Role:** actor plays more than one character.

**Songs:** Brecht would use songs as a narrative device, fill the gaps in the passage of time, to stop them getting carried away with the action.

**Gestus:** gesture, movement, stance, vocal - represents how a character is feeling/to represent their attitude.

**Montage:** series of freeze frames, images, scenes put together.

**Not-but:** the actor explores the possibility that their character might choose to behave in one way, but equally could've chose the opposite.

#### What is Epic Theatre?

**Epic theatre** is a type of **political theatre** that addresses contemporary issues, although later in **Brecht's** life he preferred to call it **dialectal theatre**.

**Brecht** believed classical approaches to **theatre** were escapist, and he was more interested in facts and reality rather than escapism.

German playwright, Bertolt Brecht's ideas are very influential. He wanted to make the audience think, and used a range of devices to remind them that they were watching theatre and not real life.

Bertolt Brecht was a **theatre practitioner**. He made and shaped theatre in a way that had a huge impact upon its development. Many of his ideas were so revolutionary that they changed the theatrical landscape forever. Modern theatre owes a lot to his methods.

When **naturalistic theatre** was at its height and acted as a mirror to what was happening in society, he decided to use it as a force for change. He wanted to make his audience think and famously said that theatre audiences at that time "hang up their brains with their hats in the cloakroom".

-Focuses upon **socio-political issues**.

-Produces thought of solutions to the problems in society.

-The message should be clear.

-To do this, he made sure to remind the audience that they were watching a play and a representation of life.

-He called the act of lessening emotional involvement

**"Verfremdungseffekt."**

-Brecht believed that theatre should appeal not to the spectator's feelings, but to his reason.

#### What are some Brechtian techniques?

Techniques such as the verfremdungsteffekt/alienation effect, didacticism, breaking the fourth wall, gestus, narration and use of song all encompass the Brechtian theorisation of Epic Theatre.

Other techniques include alienation, parables, emotional investment, narration and coming out of role. Direct address and placards were also used a lot through his productions to send a clear message to the audience.

The characters would multi-role to make it clear that it was just a play. The set would be minimal.

#### What are political and social matters?

Example Community Problems: Adolescent pregnancy, access to clean drinking water, child abuse and neglect, crime, domestic **violence**, drug use, environmental contamination, ethnic conflict, health disparities, HIV/ AIDS, hunger, inadequate emergency services, inequality, jobs, lack of affordable housing, poverty, racism

A **social issue** is a problem that influences a considerable number of individuals within a society. It is often the consequence of factors extending beyond an individual's control, and is the source of a conflicting opinion on the grounds of what is perceived as a morally just personal life or societal order.

Epic theatre required actors to be up to date with political and social issues.

This ensures that actors can convey real world issues in the play.

**Political-** relating to the government or public affairs of a country.



1. Privacy Issues	
Implications	<ul style="list-style-type: none"> <li>• Implications for personal privacy have arisen due to the vast array of cameras and surveillance systems around.</li> <li>• The amount of data that we share and that is recorded about us is growing hugely</li> <li>• Freespeech/freedom of expression / right to personal privacy vs. Law and Order / Public security / government's role</li> </ul>

2. Cultural Issues	
Implications	<ul style="list-style-type: none"> <li>• The impact of technology in our daily lives (Technology is changing how people live their lives today. We have an ever increasing dependency on technology in the 21st Century)</li> <li>• The digital divide (Access to technology and the Internet is not the same across the world)</li> <li>• Globalisation (As people around the world become more exposed to technology this impacts on the values and expectations of the people in each country)</li> </ul>
Positive Effects	<ul style="list-style-type: none"> <li>• In the developing world, the rapid spread of technology, fuelled by the Internet has led to positive cultural changes in developing countries.</li> <li>• Easier, faster communication has contributed to the rise of democracy, as well as working towards the alleviation of poverty.</li> <li>• Globalisation can also increase cultural awareness and promote diversity</li> </ul>
Negative Effects	<ul style="list-style-type: none"> <li>• Diffusion of technology must be carefully controlled to prevent negative cultural consequences.</li> <li>• Developing countries risk losing their cultural identities and assimilating themselves into an increasingly westernised world.</li> <li>• Challenges of inequality from the uneven distribution of technology within a country also still remain</li> <li>• Traditionally, most computer applications are designed by developers in North America. These designers unintentionally apply their cultural values and systems of thought whilst developing computer applications</li> </ul>

6. Open Source vs Proprietary Source	
Open Source	Users can modify and distribute the software. Can be installed on any number of computers. Support provided by the community. May not be fully tested. Users have access to the source code
Proprietary Source	Users cannot modify the software. Protected by CD&P Act. Usually paid for and licensed per user or per computer. Supported by developers. Users do not have access to the source code. Tested by developers prior to release. Although they may run beta programs.

3. Environmental Impact	
Fossil Fuels	Fossil fuels are consumed in the manufacturing of computer devices
Energy	2% of global energy consumption is used by data centres
Disposal	Old computing equipment is often shipped to countries with lower standards for disposal. People trawl through waste looking for metals to be recycled and sold, exposing themselves to danger.

4. Impacts of Digital Technology on Wider Society	
Customers	Customers can do more from home with less travelling involved. They can do things 24/7. They can access their data on many devices. Computers can make instant decisions without human involvement. Potentially open to hacking. Less personal
Staff	Job losses as things become more automated. New types of jobs created that didn't previously exist. Up-skilling required
Companies	Less overheads (salary, rent, utility bills) if fewer staff and buildings required. More ways to target potential customers. Increased importance of data protection and security
Local Communities	Local shops may suffer if town centres are more empty. Elderly and vulnerable customers may have nowhere local to go as local services are scaled back

5. Legislation	
Data Protection Act (2018) [implementing GDPR]	<ul style="list-style-type: none"> <li>• Data must be processed lawfully, fairly and in a transparent manner.</li> <li>• Data must only be collected for specified, explicit and legitimate.</li> <li>• Data must be adequate, relevant and limited to what is necessary.</li> <li>• Data you collect must be accurate and kept up to date.</li> <li>• Data you hold must be kept for no longer than is necessary.</li> <li>• Data you hold must be processed in a manner that ensures appropriate security of the personal data.</li> <li>• Data controllers must be able to prove that their data protection measures are sufficient</li> </ul>
Computer Misuse Act (1990)	It is illegal to make any unauthorised access to data... ...with the intent to commit further offences ...with the intent to modify data, e.g. viruses
Copyright Designs and Patents Act (1998)	It is illegal to copy, modify or distribute software, music, videos or other intellectual property without permission from the author

1. Records (compared with Arrays and Lists)	
Arrays and Lists	<ul style="list-style-type: none"> <li>• Uses indexes to refer to data items. e.g. myArray[4]</li> <li>• Lists are dynamic (length can be changed), arrays are static (length cannot be changed)</li> <li>• Different items in lists can be different types. Arrays are all one type</li> </ul>
Records	<ul style="list-style-type: none"> <li>• A static collection of related fields.</li> <li>• Uses dot syntax to refer to data items: record&lt;dot&gt;Field e.g. car1.Make</li> <li>• Each field in a record can have a different data type.</li> </ul>

2. SQL (Structured Query Language)	
SELECT	which fields to be returned. * can be used to indicate all fields
FROM	which table. Databases can have more than one table, each with their own unique name
WHERE	records meet a condition. LIKE and % can be used as a wildcard
Example	SELECT name, age, address FROM person WHERE name LIKE 'GUR%'

3. Sub programs (Functions and Procedures)	
Why Use them	<ul style="list-style-type: none"> <li>• Larger programs are developed as a set of sub-programs called subroutines.</li> <li>• Structuring code into sub-programs makes the code easier to read and debug.</li> <li>• Each sub-program can easily be tested.</li> <li>• They can be saved in libraries and reused in other programs</li> </ul>
Functions	Functions return values and create reusable program components.
Procedures	Procedures are like functions that do not return values
Parameters	Inputs are passed to sub programs as 'parameters' e.g. functionCall( inputData1, inputData2)
Local versus global variables	Variables that only exist inside a sub programs' definition are 'local'. Their names will not be recognized outside of that definition. Variables recognised everywhere in code are called 'global'.

```
# Example function definition (OCR Exam Reference Language)
function add3Numbers(x, y, z)
    answer = x + y + z
    return answer

# Example of a call to the function, assigning the returned value to a variable
total = add3Numbers(5, 7, 3)
```

4. Basic String Manipulation (general)	
myString.length	Obtains the length of the string in characters
myString.upper	Converts the string to uppercase
myString.lower	Converts the string to lowercase
"Hello" + "Kitty"	Concatenation. Returns "HelloKitty"
myString.left(n)	Gets the left-most n characters of the string
myString.right(n)	Gets the right-most n characters of the string
myString.substring(a,b)	Gets b characters of the string, starting from position a
ASC(char)	Returns the numerical ASCII value of char
CHR(number)	Returns the character with ASCII value of number
Note: this is NOT the way things are done in any specific programming language. In particular Python does things differently	

5. Basic File Handling Operations (OCR Reference Language)	
myFile=open("...")	Open a file
myFile.close()	Close a file
myFile.readLine()	Read a line from a file
myFile.writeLine()	Write a line to a file
myFile.endOfFile("...")	Detect the end of the file
newFile("...")	Create a new file
An Example Workflow	<pre>myFile = open("sample.txt") while NOT myFile.endOfFile()     print (myFile.readLine()) endwhile myFile.write("Hello") myFile.close()</pre>
Note : this is NOT the way things are done in any specific programming language. In particular Python does things differently	

6. Random Numbers	
Computer	Computers do not produce random numbers at all. Instead they use complex maths to produce a series of numbers that will only seem to be random. We refer to them as random numbers anyway.
OCR Reference Language	<pre>myVariable = random(1,6)</pre> will produce a random integer between 1 and 6

1. Input Validation	
Validation	Does not ensure that the data entered is correct, just that it is possible and sensible
Type Check	The input is in the correct data type. E.g. Integer, Real, String
Range Check	The input is within a correct range. E.g. Between 1 and 2
Presence Check	Some data has been entered. E.g. Reject blank inputs
Format Check	The input is in the correct format. E.g. dd/mm/yyyy
Length Check	The input has the correct number of characters. E.g. 8 or more chars
Why use input validation?	<ul style="list-style-type: none"> <li>• The program is more robust</li> <li>• The program is more user friendly</li> <li>• To prevent further errors occurring later in the algorithm</li> </ul>

2. Anticipating Misuse	
Authentication	<ul style="list-style-type: none"> <li>• Username and password to access systems.</li> <li>• Two-factor authentication</li> <li>• Password recovery by e-mailing to an authenticated e-mail address.</li> <li>• Encryption of data files.</li> <li>• Check for human and not bot attempting access (e.g. reCAPTCHA)</li> </ul>
Division by Zero	In mathematics, there is no number which when multiplied by zero returns a non-zero number. Therefore the arithmetic logic unit cannot compute a division by zero.
Communication Error	Online systems require connections to host servers. If this connection is dropped, unable to be established or the server is overloaded, it could potentially cause a program to crash or hang when loading/saving data.
Peripheral Error	Any peripheral may be in an error mode (e.g. paper jam)
File Access Error	Programs that read and write to files must handle <u>exceptions</u> , including: <ul style="list-style-type: none"> <li>• The file/folder not being found.</li> <li>• The secondary storage being out of space.</li> <li>• The data in the file being corrupt.</li> <li>• The end of the file being reached</li> </ul>

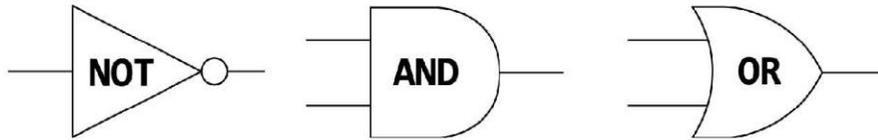
6. Refining Algorithms	
Test and correct your code to make it 'Robust'	<ul style="list-style-type: none"> <li>• Code should anticipate all inputs and it should deal with 'bad' data, or missing data, and not crash.</li> <li>• It should ensure prompts to the user are helpful and that the input can only be of the correct type</li> </ul>

3. Maintainability	
Comments	These explain the purpose of the program, or a section of code. They may also explain any unusual approaches or temporary 'fixes'
White Space	Make each section of the code stand out. Use spaces so code is not cramped up and hard to read
Indentation	Compulsory in Python, but even if not compulsory it is recommended that you always use indentation to show the flow of the program
Variable Names	Use sensible variable names that have some meaning as to what they are being used for
Sub Programs	Use Procedures and functions to structure the code and eliminate duplicating portions of it
Constants	Declare constants at the top of the program

4. Testing	
Reasons for Testing	<ul style="list-style-type: none"> <li>• To ensure there are no errors (bugs) in the code.</li> <li>• To check that the program has an acceptable performance and usability.</li> <li>• To ensure that unauthorised access is prevented.</li> <li>• To check the program meets the requirements</li> </ul>
Iterative Testing	<ul style="list-style-type: none"> <li>• Each new module is tested as it is written.</li> <li>• Program branches are checked for functionality.</li> <li>• Also checks that new modules do not introduce new errors into existing code.</li> <li>• Tests to ensure the program handles erroneous data and exceptional situations.</li> </ul>
Final /Terminal Testing	<ul style="list-style-type: none"> <li>• Testing that all modules work together (integration testing)</li> <li>• Testing that the program produces the require results with normal, boundary, invalid and erroneous data.</li> <li>• Checking that the program meets the requirements with real data.</li> </ul>

5. Suitable Test Data	
Normal Inputs	Data which should be accepted by a program without causing errors
Boundary Inputs	Data of correct type on the edge of accepted validation boundaries
Invalid Inputs	Data of the correct type but outside accepted validation checks
Erroneous Inputs	Data of the incorrect type which should be rejected by a computer system. This includes no input being given when one is expected

## 1. Logic Gate Symbols



$\neg A$

$A \wedge B$

$A \vee B$

## 2. Truth Tables

A	NOT A
0	1
1	0

A	B	A AND B
0	0	0
0	1	0
1	0	0
1	1	1

A	B	A OR B
0	0	0
0	1	1
1	0	1
1	1	1

## 4. Translators

Assembler	Assembles' assembly language into machine code. Translates the whole code before execution
Compiler	Translates source code from high-level languages into object code and then into machine code ready to be processed by the CPU. The whole program is translated into machine code before it is run.
Compiler Advantages	<ul style="list-style-type: none"> <li>No need for translation software at run-time, and no need to share original source code</li> <li>Speed of execution is faster because code is usually optimised.</li> </ul>
Compiler Disadvantages	<ul style="list-style-type: none"> <li>You cannot compile the program if there are syntax errors anywhere in it which can make it tricky to debug.</li> <li>If you change anything you need to recompile the code</li> </ul>
Interpreter	Translates source code from high level languages into machine code ready to be processed by the CPU. The program is translated line by line as the program is running.
Interpreter Advantages	<ul style="list-style-type: none"> <li>Easy to write source code because the program will always run, stopping when it finds a syntax error.</li> <li>Code does not need to be recompiled when code is changed, and it is easy to try out commands when the program has paused after finding an error.</li> </ul>
Interpreter Disadvantages	<ul style="list-style-type: none"> <li>Translation software is needed at run-time, so you need to share the original source code.</li> <li>Speed of execution is slower because the code is not optimised</li> </ul>

## 3. Levels of Programming Languages

Machine Code 1st Generation	<ul style="list-style-type: none"> <li>Binary representation of instructions in a format that the CPU can decode and execute.</li> <li>Have an operation code (opcode) instruction and address or data to use (operand).</li> </ul>
Low-Level Languages 2nd Generation	<ul style="list-style-type: none"> <li>Written in Assembly language.</li> <li>Translated by an assembler into machine code.</li> <li>Used for embedded systems and device drivers where instructing the hardware directly is necessary.</li> <li>One instruction translated into one machine code instruction.</li> <li>The code works on one type of processor only.</li> <li>The programmer works with memory directly.</li> <li>Code is harder to write and understand.</li> <li>Memory efficient.</li> <li>Code is fast to execute.</li> </ul>
High-Level Languages 3rd Generation	<ul style="list-style-type: none"> <li>Source code is written in languages as Python, Java, C#.</li> <li>Translated by a compiler or interpreter into machine code.</li> <li>Makes the writing of computer programs easier by using commands that are somewhat like English.</li> <li>One source code instruction translates to many machine code instructions.</li> <li>Code will run on different types of processors.</li> <li>The programmer has lots of data structures to use.</li> <li>Code is quicker and easier to understand and write.</li> <li>Less memory efficient.</li> <li>Code can be slower to execute if it is not optimised.</li> </ul>

## 5. Integrated Development Environments

Debugging Tools	<ul style="list-style-type: none"> <li>Breakpoints – stopping at a line of code during execution.</li> <li>Stepping through lines of code one at a time.</li> <li>Tracing through a program to output the values of variables.</li> </ul>
Run Time Environment	<ul style="list-style-type: none"> <li>Output window.</li> <li>Simulating different devices the program can run on.</li> </ul>
Usability Functions	<ul style="list-style-type: none"> <li>Navigation, showing/hiding sections of code.</li> <li>Formatting source code, often highlighting in different colours.</li> <li>Text-editor functions</li> <li>Illustrating keyword syntax and auto-completing command entry.</li> </ul>
Translator	Some IDEs have an inbuilt translator to test the program and make small alterations before compiling the final program into an executable file for distribution

# R081 Pre-production Skills

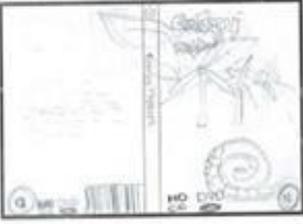
## Learning Outcome 1: Understand the purpose and content of pre-production

Mood Boards	
<p><b>Definition</b></p> <p>The purpose of a mood board is to assist in the design of a media product by collecting a wide range of materials (images, fonts, colours, etc.) that give an overall feel for what is needed. A mood board therefore provides a starting point which can be used for discussion with the client and can also be used to keep the project on track by referring back to it. It is <b>not</b> a representation of what the final product will look like.</p>	<p><b>Example</b></p>  <p>The above mood board shows examples of images, styles and colours that may be used in a graphic.</p>

Storyboards	
<p><b>Definition</b></p> <p>Storyboards are used for moving images (animation/film) to help plan what will happen throughout the course of a scene. A storyboard will show images of what is happening in the scene and can also be annotated with a description of the scene and how long it lasts for. Story boards will help people to visualise the camera angles that will be used as well as different aspect of lighting, special effects/sounds and props/costumes. More importantly a storyboard will show how the different elements of a scene fit together. This can be shared with the client before production begins so that changes can be suggested and agreed. It can also be shared with the cast and crew as a guide to what they should be engaged with at a particular time. Storyboards may also help to build up an idea of the budget that may be required.</p>	<p><b>Example</b></p>  <p>The above storyboard shows each sections place in the scene, duration and denotes what will be happening along with a pictorial representation.</p>

Scripts	
<p><b>Definition</b></p> <p>Scripts perform a number of different functions including; identifying the place where an action is to take place, identifying which different characters will be in a particular scene, providing stage directions (movements), and stating what dialogue will be used in a particular scene. Scripts will also contain comments about the particular mood for a scene which the actors can use to take cues from.</p>	<p><b>Example</b></p> <p>WHEELS That's more like, uh... Ethel is how you use the words... that you learn from a story?</p> <p>JIM weighs the answer, tries to be encouraging.</p> <p>JIM Okay. But we're still missing something key here. What are we missing?</p> <p>TRACY (hand still raised)</p> <p>I know.</p> <p>JIM (finally)</p> <p>Tracy.</p> <p>TRACY Ethel! Ah...</p> <p>FREEZE FRAME on Tracy, her hand lowering, her mouth open.</p> <p>The script above shows the dialogue between the two characters, as well as setting the scene for what the characters are thinking and their actions.</p>

Mind Map/ Spider Diagram	
<p><b>Definition</b></p> <p>These can be used to quickly generate different ideas or to show links between different concepts. Mind maps will have a central theme with branches springing from it connecting different sub nodes. They are used at the start of the design process.</p>	<p><b>Example</b></p>  <p>This example has a central theme springing different ideas. Each idea springing from the central theme is called a 'node'.</p>

Visualisation Diagram	
<p><b>Definition</b></p> <p>Visualisation diagrams are used to plan the layout of a static image in a visual manner. This will give an indication to the client of how the final document might look. This will enable them to suggest changes before the image goes into production which will save time in the long run.</p>	<p><b>Example</b></p>  <p>The visualisation diagram above gives an accurate portrayal of what the final graphic might look like. In this case the graphic is a DVD cover.</p>



# R081 Pre-production Skills

## Learning Outcome 2: Be able to plan pre-production

Client Brief / Target Audience	Legislation
<p style="text-align: center;"><b>Definition</b></p> <p><b>Interpreting client briefs</b> – A client brief will explain what the client’s needs are for a specific product. It will also normally outline who the target audience is for the product that is to be designed as well as any specific design elements that the client may have. It is then the job of the designer to interpret this to develop success criteria through which the product can be developed.</p> <p><b>The importance of target audience</b> – The target audience is the group of people who the end product will be designed for. The client could request that the product be developed for people of a certain age, gender, occupation or with specific interests. The type of person who the product is being developed for will have a huge impact on how it is designed influencing colours, images, complexity, etc. Without having a really good understanding of the target audience it is unlikely that a designer will be able to create an effective solution to the client’s needs.</p>	<p><b>Copyright</b> - gives the creator of an original work the intellectual property right to decide how the work can(not) be used. The creator is protected by the law so that any breach of copyright could lead to people who have used the work without permission being sued. This could lead to them having to pay compensation to the copyright holder and for businesses would have a negative impact on their reputation. If the creator of an original work feels they would like others to be able to use it free of charge then they can register it under a creative commons licence to enable people to do this so long as they acknowledge the original creator and any limitations as to use.</p> <p><b>Trademarks</b> – a trademark is a method used by businesses to make their work recognisable. This could be in the form of an image (logo), word, phrase, symbol or design. The symbol ® is used for a registered trade mark and ™ for an unregistered trade mark.</p> <p><b>Data protection</b> – this legislation makes it the responsibility of organisations to seek permission to hold personal information about people (e.g. names, addresses, phone number, etc.), be transparent about how they use the information and ensure that it is kept secure. As such they need to ensure that they follow these rules:</p> <ol style="list-style-type: none"> <li>1. Always have permission from the person whose data you are storing.</li> <li>2. Only keep the amount of data that you have a reason to keep.</li> <li>3. Only keep the information for as long as it is required.</li> <li>4. Ensure that any information held is kept up to date.</li> <li>5. Ensure that the information is stored in a secure location and that all possible steps are taken to avoid theft, deletion or modification of data.</li> <li>6. Do not share the information with other organisations without permission.</li> <li>7. Never share data with organisations in other countries that do not have data protection legislation.</li> </ol> <p>Breach of these rules can lead to legal action being taken against the company and damage caused to its reputation.</p> <p><b>Privacy</b> – In UK law the right to privacy is protected under the Human Rights Act 1998. This means that a person has the right to have their private and family life respected, and as such not to be subjected to an invasion of privacy in their home or to have their correspondence tampered with (post, emails, telephone, etc.)</p> <p><b>Defamation</b> – this is where a false statement has been made about a person that could cause damage to their reputation.</p>
<p style="text-align: center;"><b>Health and Safety Considerations</b></p> <p>There are a number of different health and safety concerns that could arise in the media industry including; loud noises, machinery, lighting, weather, heavy lifting, trip hazards, working with water and electricity. Methods of reducing these risks needs to be considered before work starts!</p>	
Certification and Classification	
<p><b>U</b> – This rating is aimed at children of 4 years and older. As such to meet this requirement media must ensure that there is no language which may be considered discriminatory (unless disapproved of) or offensive. There should be no nudity of a sexual nature and violence will be very mild. Drug used should not be present unless in the form of an educational message.</p> <p><b>PG</b> – As for U except mild violence may be permitted as long as it is not prolonged and is in context. Frightening sequences where characters are in danger should not be prolonged and sexual activity can only be implied.</p> <p><b>12</b> – Misuse of drugs must be infrequent and should not be glamorised. Media should not promote dangerous acts that could be imitated. Nudity should be discreet and seldom. Horror images may be shown however these should not form the main basis of the work. There may be moderate violence but this should not lead the viewer to dwell on the detail.</p> <p><b>15</b> – Discriminatory language may be used (racist, homophobic, etc.) however this cannot be endorsed by the film. Drug use may be shown but this should not be glamorised. Dangerous situations can be shown however these should not be easy to imitate. Strong language may be used infrequently and in context. There are no constraints on nudity in a non-sexual nature. Strong violence may be shown but the image should not focus on pain or injury.</p> <p><b>18</b> – These works are deemed as being suitable only for adults who are free to choose their own entertainment.</p>	    

# R081 Pre-production Skills

## Learning Outcome 3: Understand the purpose and content of pre-production

### Creating Pre-production Documents

**Mind mapping** – There are multiple steps which can be used in order to create an effective mind map:

1. You need to ensure that you start with a central idea. This should be in the centre of the page so that it draws your attention. You can also include an image that represents the mind map's topic, this will help to strengthen the connection you have to the main theme.
2. Add branches to the mind map – the main branches forming from the central idea should each follow a specific theme, which can then be explored in more depth by adding more branches from them giving more detail.
3. Ensure that key words are used on separate branches as this will help to spark more associations.
4. Colour code the different branches of the mind map to help personalise it further and add more visual stimulation.



**Visualisation diagrams** – when creating these it is important that you remember who the audience is as this will affect the amount of detail that needs to be included. Remember this should give the client a clear idea of what the final product will look like. Add annotations or labels where required to enhance their understanding. Also if required give an indication of scale.

**Storyboards** – A storyboard is a series of diagrams that shows a sequence of displays. A storyboard should contain the number of scenes, scene content, timings, camera shots (e.g. close up, mid, long), camera angles (e.g. over the shoulder, low angle, aerial), camera movement (e.g. pan, tilt, zoom or using a track and dolly), lighting (e.g. types, direction), sound (e.g. dialogue, sound effects, ambient sound, music), locations (e.g. indoor studio or other room, outdoors).



**Scripts** - Scripts perform a number of different functions including; identifying the place where an action is to take place, identifying which different characters will be in a particular scene, providing stage directions (movements), and stating what dialogue will be used in a particular scene. Scripts will also contain comments about the particular mood for a scene which the actors can use to take cues from.



### File Formats

Depending on the different type of document being created a different file format will need to be selected. The table below outlines the different file formats available for different types of media:

File	Use	Description
MPG	Video Files	<ul style="list-style-type: none"> <li>• Compressed file formats (Lossy)</li> <li>• Smaller file sizes</li> <li>• Faster loading online (speed)</li> <li>• Compression lowers quality</li> </ul>
MOV		
MP4		
SWF	Animation	<ul style="list-style-type: none"> <li>• Compressed file formats</li> <li>• Small file sizes</li> <li>• Fast loading online (speed)</li> <li>• Can be animations, games and video</li> </ul>
FLV		<ul style="list-style-type: none"> <li>• Flash video format</li> <li>• Not compressed</li> <li>• Opens in 'Flash' software</li> <li>• Editable</li> </ul>
JPEG	Image Files	<ul style="list-style-type: none"> <li>• Lossless compression; photography</li> </ul>
GIF		<ul style="list-style-type: none"> <li>• Small file sizes/ Online / web buttons</li> </ul>
PNG		<ul style="list-style-type: none"> <li>• Lossless compression; supports transparency; photography</li> </ul>
TIFF		<ul style="list-style-type: none"> <li>• Large file sizes / Posters / high quality printing</li> </ul>
PDF		<ul style="list-style-type: none"> <li>• Un-editable/ Documents</li> </ul>
WAV	Audio Files	<ul style="list-style-type: none"> <li>• Uncompressed / high quality / Windows only</li> </ul>
AIFF		<ul style="list-style-type: none"> <li>• Uncompressed / high quality / Mac only</li> </ul>
MP3		<ul style="list-style-type: none"> <li>• Compressed / small file sizes / good for devices</li> </ul>

### Naming Conventions

Ensure that all files are given an appropriate name so that they could be identified by a third party. Where there are different versions of a file version control should be implemented by adding the version of the document to the end of the file name e.g. \_V0.1 would indicate that it is the first version of the file.





**Chaine Turn** - a basic turn used in ballet and jazz dance, as well as other styles.

**Ball Change** - shifting weight from one foot to the other, and back again.

**Grapevine** - a dancer steps out to the side, crosses the other foot in front, steps out to side again, and crosses the other foot behind.

**First Position** - One of five ballet positions. Heels touch and toes pointed outward, forming a line with the feet. Arms are rounded.

**Second Position** - One of five ballet positions. Feet are separated about shoulders' width, with toes turned outward. Arms are outstretched with slight rounding.

**Pique Turn** - Dancer steps out on one foot, and a complete turn is made on releve while the opposing foot's toes are brought up to the inside knee.

**Releve** - To balance on your toes, either stationary or in movement.

**Kick Ball Change** - one foot kicks either forward, to the side or to the back, and then is brought behind for a ball change step.

**Heel Pull** - found in ballroom dancing, a half turn is completed on each heel.

**Derriere** - French for "directly behind the body." Referenced often in ballet.

**Pas de Deux** - a two-person dance, usually a male/female duet

**Double Turn** - two full rotations of any dance turn (pique, attitude, pencil, etc.)

**Attitude Turn** - while turning on releve, one leg is bent backward behind the body, leading the turn outward.

**Glissade** - a small leap to the side, almost a gliding motion across the floor.

**Plie** - a bend of the knees in any of the five ballet positions

**Pas de Bourree** - a connecting step used in dance combinations, it involves the transfer of weight from one foot to the other, usually to "prep" for a turn or leap.



# Component 3: Responding to a brief

## Physical Skills

**Alignment** Correct placement of body parts in relation to each other.

**Balance** A steady or held position achieved by an even distribution of weight.

**Control** The ability to start and stop movement, change direction and hold a shape efficiently.

**Coordination** The efficient combination of body parts.

**Extension** Lengthening one or more muscles or limbs.

**Flexibility** The range of movement in the joints (involving muscles, tendons and ligaments).

**Posture** The way the body is held.

**Stamina** Ability to maintain physical and mental energy over periods of time.

**Strength** Muscular power.

## Performance Skills

**Facial Expression** Use of the face to show mood, feeling or character.

**Musicality** The ability to make the unique qualities of the accompaniment evident in performance.

**Projection** The energy the dancer uses to connect with and draw in the audience.

**Energy** the force applied to dance to accentuate the weight, attack, strength, and flow of a dancer's movement



## Rehearsal Skills

**Teamwork:** Working effectively as a team. Listening to everyone's ideas and showing respect.

**Safe practice:** Demonstrating safe practice at all times - hair up, jewellery off, socks off (including grippy socks).

**Enthusiasm:** Having an active role in the lesson - share ideas and collaborate with your peers.

**Engagement:** Remain engaged at all times. Stay on task and ask questions if needed.

# Engineering semester 2 Investigating an engineered brief and product .

## Analysing a brief

When design a product you need to what information you are being given in order to find a solution to the engineered problem.

### **Look for info on what....**

**Physical requirements** - what does it do, hold, cover carry?

**Aesthetics** - how it looks

**Size** - does it have maximum/minimum size, is it replacing something?

**Function** - what does it do/control?

Performance requirements - How can you measure its success, does it work well?

## Prototypes

A test model either virtually on computer or a model.

### **Why?**

To find faults and mistakes, to test one example therefore preventing expensive mistakes. Several prototypes can be made to develop a design making improvements on each one.

### **How?**

**Functional tests** - Checking everything works, moves, fits

**Ergonomic tests** - Checking easy to use, controls can be reached

**Destructive tests** - Will it break, how much can it take, load, pressure.

## Features of an engineered product

**Dimensions** - Size

**Tolerance** - How much bigger or smaller can a product be and still fit/work?

**Surface finish** - measure in micrometres ( $\mu\text{m}$ ). How it might look or wear or resistant to corrosion/rust water.

**Physical form** - 2D 3D flat curved. Is it long joined to something, sharp edges etc.

## Properties of materials

**Mild steel** - good tensile strength, malleable and ductile.

**Stainless steel** - Tough and corrosion resistant

**Wrought iron** - corrosion resistant and malleable

**Aluminum** - Soft malleable, conductor of heat, corrosion resistant.

**Titanium** - low density, good level of durability

**Copper** - tough, ductile, good conductor of electric.

**Polyurethane** - Strong and impact resistant.

**Acrylic** - Stiff Durable and an insulator.

**Polypropylene** - Strong and resistant to stress and cracking,

## Materials

**Ferrous Metals** - Contain Iron, eg stainless steel

**Non Ferrous metals** - No Iron, such as bronze or brass or a mixture of metal(alloy) often mixed to make it stronger.

**Thermosetting polymers** - heated, formed once cannot be reformed. Useful where a lot of heat is applied eg. Kettle.

**Thermoforming polymers** - heated and reformed over and over. Eg Acrylic. ABS - Acrylonitrile Butadiene Styrene

## Types of production

**One-off production** - When only one product is made at a time.

**Batch production** - When a small quantity of identical products are made.

**Mass production** - When hundreds of identical products are made, usually on a production line.

**Continuous Flow** - When many thousands of identical products are made. The production line is kept running 24 hours a day, seven days a week to maximise production.

## **Manufacturing processes**

### **Cutting processes**

**Drilling** - Holes, either all the way through or flat bottomed.

**Sawing** - Mechanical or manual cutting of material

**Filing** - removing sharp edges or shaping round edges.

Shearing

### **Shaping processes**

**Turning** - Producing a range of shapes and diameters of round bar

**Milling** - removing material to create slots or parallel lines, grooves, recesses.

### **Forming processes**

**Casting** - sand casting or die casting in a die (mould).

**Forging** - drop forging, upset forging, forging heated metal into shape through shaping machinery.

**Extruding** - forcing soft polymer through a die.

**Moulding** - Vacuum forming or injection moulding.

### **Joining and fabrication processes**

**Fastening** - mechanical join between two components eg screws, nuts, bolts.

**Bonding** - glue and adhesives.

**Soldering** - melting solder to join electric components to a circuit board.

**Brazing** - Joining different metals together using heat.

## **Key terms and definitions for analysing a brief**

**Form** - why it is shaped as it is?

**Function** - what its function is – whether it works.

**User requirements** - what attributes would persuade users to choose the product and why?

**Performance requirements** - What would the product be required to do to achieve optimum performance.

**Material and component requirements** - what would each part of the products material need to achieve to perform correctly.

**Ease of manufacture** - How easy can the product be manufactured?

**Ease of maintenance** - Does the product require routine servicing, if so how can this be performed?

**Legal and safety requirements** - Are there any legal standards the product should meet?

**Aesthetic Properties** - How does the material look?

**Mechanical Properties** - Does the material move?

**Electrical Properties** - Does the material require a current to pass through it?

**Raw Material and Processing** - How is the material made?

**Environmental Impact** - How does the material affect the environment?

**Reusability** - Can the material be recycled?

## **BTEC Command words definitions**

**Justify** - Give reasons or evidence to support an opinion. Give full or evidence to support an opinion.

**Evaluate** - Bring together all information and review it to form a conclusion. Give evidence for each view or statement.

**Explain** - Provide details and give reasons and/or evidence to support the arguments being made. Start by introducing the topic, then give the 'how?' or 'why?' Provide full details and reasons.



## Brake caliper proprietary components

**Screws** These hold the different parts of the brake calliper system together and to the bike frame. They are round and have a screw thread. Some have a slot in the top and others have a hole for an allen key These are easily bought from lots of online suppliers and DIY shops so can be easily replaced if they need to be. They usually cost around 6p each for M6 screws that are 16mm long like those used in the brakes

**Bolts** These connect the yoke to the brake cable by clamping it between the yoke and a washer. They look like screws but have a part that does not have a thread. They need to be tightened with a spanner because they have a hexagonal head. These can also be bought from lots of places and are easy to get hold of. They are more expensive than screws, at around 10p each for the same sizes as machine screws.

**Washers** These are flat discs of metal or nylon that have a hole in the middle to let screws go through them Like the bolts and screws washers can be bought in lots of places including DIY shops or from online shops. M6 stainless steel washers cost around 4p each to buy in bulk. The lock washers used for the set screw clamps also cost around 4p each.

**Lock Nuts** These look like normal nuts but have a plastic bit inside them that grips onto screws and bolts. They re silver coloured and have a hexagon shape. Stainless steel lock nuts that fit the screws and bolts cost around 5p each if they are bought in bulk. These can be bought online or from DIY shops or car spares shops.

## Manufacturing Processes

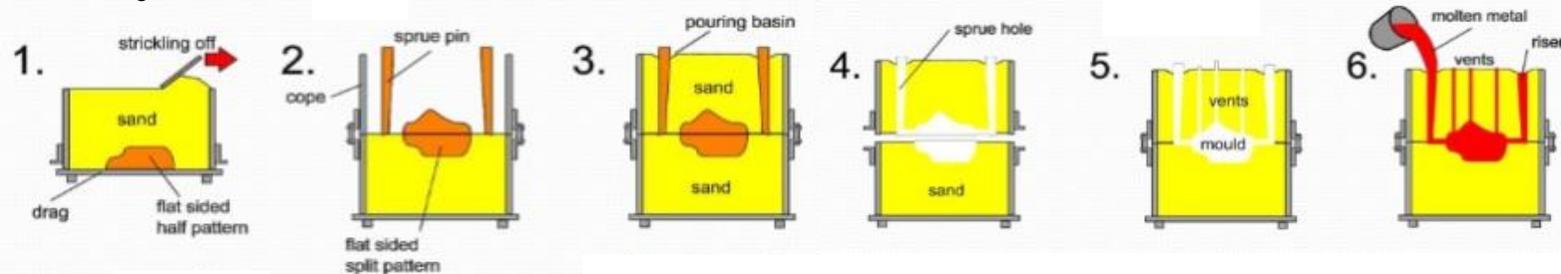
**Casting** -This is done by forcing hot melted aluminium into a mould that is in two parts.

**Injection moulding** - Pellets of the polymer are heated up until they are soft like a liquid. They are force by a screw into a two part mould.

**Stamping** dies are pressed down with large amounts of pressure on to either the metal or nylon which is in a large sheet.

**Forging** has then been used to produce the set screw clamp which is similar to a normal machine screw. It has been made by a process called cold heading which uses a die and a punch.

Sand Casting Process



# Engineering semester 2 Investigating an engineered brief and product .

## Analysing a brief

When design a product you need to what information you are being given in order to find a solution to the engineered problem.

### **Look for info on what....**

**Physical requirements** - what does it do, hold, cover carry?

**Aesthetics** - how it looks

**Size** - does it have maximum/minimum size, is it replacing something?

**Function** - what does it do/control?

Performance requirements - How can you measure its success, does it work well?

## Prototypes

A test model either virtually on computer or a model.

### **Why?**

To find faults and mistakes, to test one example therefore preventing expensive mistakes. Several prototypes can be made to develop a design making improvements on each one.

### **How?**

**Functional tests** - Checking everything works, moves, fits

**Ergonomic tests** - Checking easy to use, controls can be reached

**Destructive tests** - Will it break, how much can it take, load, pressure.

## Features of an engineered product

**Dimensions** - Size

**Tolerance** - How much bigger or smaller can a product be and still fit/work?

**Surface finish** - measure in micrometres ( $\mu\text{m}$ ). How it might look or wear or resistant to corrosion/rust water.

**Physical form** - 2D 3D flat curved. Is it long joined to something, sharp edges etc.

## Properties of materials

**Mild steel** - good tensile strength, malleable and ductile.

**Stainless steel** - Tough and corrosion resistant

**Wrought iron** - corrosion resistant and malleable

**Aluminum** - Soft malleable, conductor of heat, corrosion resistant.

**Titanium** - low density, good level of durability

**Copper** - tough, ductile, good conductor of electric.

**Polyurethane** - Strong and impact resistant.

**Acrylic** - Stiff Durable and an insulator.

**Polypropylene** - Strong and resistant to stress and cracking,

## Materials

**Ferrous Metals** - Contain Iron, eg stainless steel

**Non Ferrous metals** - No Iron, such as bronze or brass or a mixture of metal(alloy) often mixed to make it stronger.

**Thermosetting polymers** - heated, formed once cannot be reformed. Useful where a lot of heat is applied eg. Kettle.

**Thermoforming polymers** - heated and reformed over and over. Eg Acrylic.  
ABS - Acrylonitrile Butadiene Styrene

## Types of production

**One-off production** - When only one product is made at a time.

**Batch production** - When a small quantity of identical products are made.

**Mass production** - When hundreds of identical products are made, usually on a production line.

**Continuous Flow** - When many thousands of identical products are made. The production line is kept running 24 hours a day, seven days a week to maximise production.

# 1. What are Natural Hazards?

Natural hazards are physical events such as earthquakes and volcanoes that have the potential to do damage to humans and property. Hazards include tectonic hazards, tropical storms and forest fires.

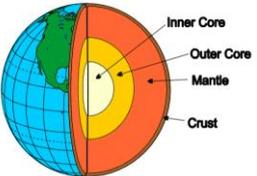
**What affects hazard risk?**

Population growth  
Global climate change  
Deforestation  
Wealth - LICs are particularly at risk as they do not have the money to protect




# 2. Structure of the Earth

The earth has 4 layers  
The core (divided into inner and outer), mantle and crust.



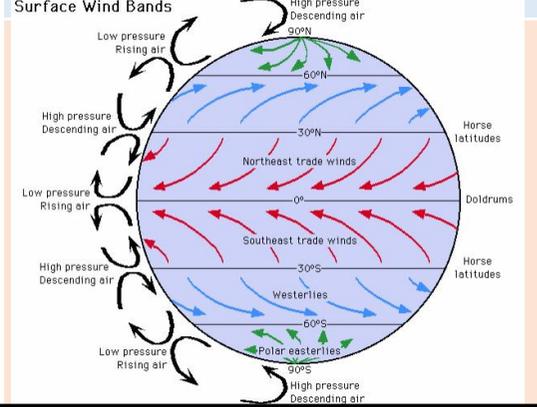
The crust is split into major sections called **tectonic plates**.

There are 2 types of crust:  
**Oceanic** (thin and younger but dense) and  
**Continental** (old and thicker but less dense).

Plates either move towards each other (**destructive margin**) away from each other (**constructive**) or past each other (**conservative**). These plates move due to convection currents in the mantle and, where they meet, tectonic activity (volcanoes and earthquakes) occurs..

# 9. Global atmospheric circulation

At the equator, the sun's rays are most concentrated. This means it is hotter. This one fact causes global atmospheric circulation at different latitudes.



# 4. Effects of Tectonic Hazards

Primary effects happen immediately. Secondary effects happen as a result of the primary effects and are therefore often later.

Primary - Earthquakes	Secondary - Earthquakes
<ul style="list-style-type: none"> <li>- Property and buildings destroyed.</li> <li>- People injured or killed.</li> <li>- Ports, roads, railways damaged.</li> <li>- Pipes (water and gas) and electricity cables broken.</li> </ul>	<ul style="list-style-type: none"> <li>- Business reduced as money spent repairing property.</li> <li>- Blocked transport hinders emergency services.</li> <li>- Broken gas pipes cause fire.</li> <li>- Broken water pipes lead to a lack of fresh water.</li> </ul>
Primary - Volcanoes	Secondary - Volcanoes
<ul style="list-style-type: none"> <li>- Property and farm land destroyed.</li> <li>- People and animals killed or injured.</li> <li>- Air travel halted due to volcanic ash.</li> <li>- Water supplies contaminated.</li> </ul>	<ul style="list-style-type: none"> <li>- Economy slows down. Emergency services struggle to arrive.</li> <li>- Possible flooding if ice melts</li> <li>- Tourism can increase as people come to watch.</li> </ul>

# 5. Responses to Tectonic Hazards

Immediate (short term)	Long-term
<ul style="list-style-type: none"> <li>- Issue warnings if possible.</li> <li>- Rescue teams search for survivors.</li> <li>- Treat injured.</li> <li>- Provide food and shelter, food and drink.</li> <li>- Recover bodies.</li> <li>- Extinguish fires.</li> </ul>	<ul style="list-style-type: none"> <li>- Repair and re-build properties and infrastructure.</li> <li>- Improve building regulations</li> <li>- Restore utilities.</li> <li>- Resettle locals elsewhere.</li> <li>- Develop opportunities for recovery of economy.</li> <li>- Install monitoring technology.</li> </ul>



# 6. Distribution of tectonic activity

Along plate boundaries.  
On the edge of continents.  
Around the edge of the Pacific.

# 3. Earthquakes and Volcanoes

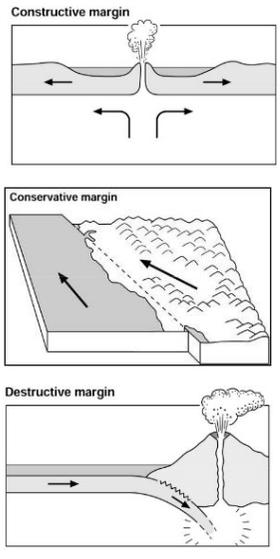
Volcanoes	Earthquakes
<ul style="list-style-type: none"> <li>- <b>Constructive margins</b> – Hot magma rises between the plates e.g. Iceland. Forms Shield volcanoes.</li> <li>- <b>Destructive margins</b> – an oceanic plate subducts under a continental plate. Friction causes oceanic plate to melt and pressure forces magma up to form composite volcanoes e.g. the west coast of South America.</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Constructive margins</b> – usually small earthquakes as plates pull apart.</li> <li>- <b>Destructive margins</b> – violent earthquakes as pressure builds and is then released.</li> <li>- <b>Conservative margins</b> – plates slide past each other. They catch and then as pressure builds it is released e.g. San Andreas fault.</li> </ul>

# 8. Comparing Earthquakes – Nepal and Chile

Nepal. April 2015. Magnitude 7.8.	Chile. 27th February 2010 Magnitude 8.8.
Primary Effects	
9000 deaths 23000 injured Over 500,000 homes destroyed Historic buildings including Dharahara Tower fell 26 hospitals and 50% of schools destroyed	500 deaths 12000 people injured. 220,000 homes destroyed Port and Airport badly damaged Lost power / Water / 56 hospitals damaged Cost of damage \$30 billion
Secondary Effects	
Avalanche on Mount Everest killing 19 people. Loss of income from tourism (which was 8.9% of Nepal's GDP). Rice seed stored in homes was ruined as homes collapsed. This caused food shortages.	1500km of roads damaged cutting off communities Coastal towns devastated by tsunamis - Warnings prevented deaths Fire at chemical plant leading to an evac.
Immediate Responses	
Nepal requested international help. UK's DEC raised \$126 million. Red Cross- tents for 225,000 people. UN and WHO distributed medical supplies to the worst districts. Facebook launched a safety feature so people could indicate they were safe.	International help for field hospitals National emergency services acted quickly Power & water services restored to 90% within 10 days National appeal raised \$60 million, enough to build 30,000 small shelters
Long term responses	
Rebuilding. World Heritage Sites reopen June 2015. Longer climbing season.	Strong economy meaning they didn't need much foreign aid. 4 years to fully recover. Reconstruction started 1 month after event.

# 7. Reducing the impact of tectonic hazards

Monitoring	Prediction
Seismometers measure earth movement. Volcanoes give off gases.	By observing monitoring data, this can allow evacuation before event.
Protection	Planning
Reinforced buildings and making building foundations that absorb movement. Automatic shut offs for gas and electricity.	Avoid building in at risk areas. Training for emergency services and planned evacuation routes and drills.



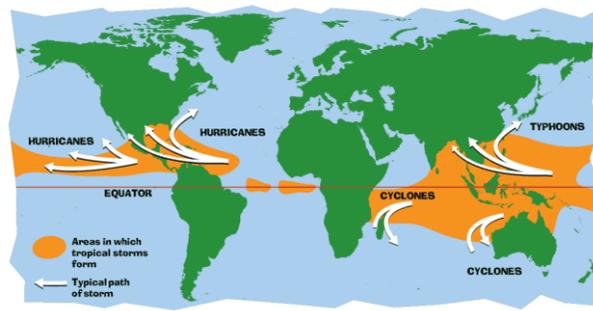
**Natural Hazards**



LICs suffer more than HICs from natural disasters because they are not as prepared and struggle to react effectively.

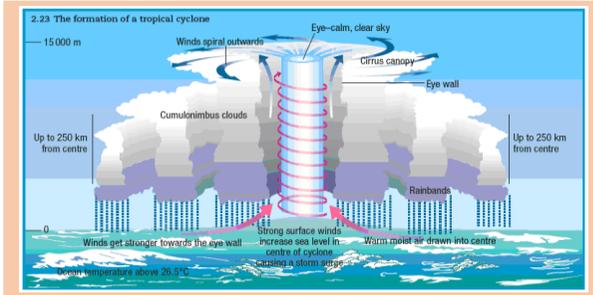
## 10. Tropical Storms

Occur in low latitudes between 5° and 30° north and south of the equator (in the tropics). Ocean temperature needs to be above 27° C. Happen between summer and autumn.



## 11. Sequence of a Tropical Storm

1. Air is heated above warm tropical oceans.
2. Air rises under low pressure conditions.
3. Strong winds form as rising air draws in more air and moisture causing torrential rain.
4. Air spins due to Coriolis effect around a calm eye of the storm.
5. Cold air sinks in the eye so it is clear and dry.
6. Heat is given off as it cools powering the storm.
7. On meeting land, it loses source of heat and moisture so loses power.



Climate change will affect tropical storms too. Warmer oceans will lead to more intense storms – but not necessarily more frequent ones.

## 18. Extreme weather in the UK

- Rain** – can cause flooding damaging homes and business.
- Snow & Ice** – causes injuries and disruption to schools and business. Destroys farm crops.
- Hail** – causes damage to property and crops.
- Drought** – limited water supply can damage crops.
- Wind** – damage to property and damage to trees potentially leading to injury.
- Thunderstorms** – lightning can cause fires or even death.
- Heat waves** – causes breathing difficulties and can disrupt travel.

## 12. Typhoon Haiyan, Philippines, November 2013

Primary Effects	Secondary Effects
At least 6340 killed 314 km/hr wind speeds. 5m Storm Surge 90% buildings in Tacloban destroyed Habitats & Crops destroyed	\$14 Billion of damage Water supply polluted 130,000 houses destroyed, leaving 4.2 million homeless Public Order – Looting Airports unusable for supplies

Immediate Responses	Long-term Responses
1,069 emergency shelters set up in public buildings. Disaster Emergency Committee helped 3,316,500 people outside these centres by providing aid. UK aid charities provided shelter, food and medical supplies.	UN appeal raised \$300 million. Typhoon warning systems have been improved. People are now better educated about how to respond.

Prediction	Planning	Protection
Monitoring wind patterns allows path to be predicted. Use of satellites to monitor path to allow evacuation	Avoid building in high risk areas Emergency drills Evacuation routes	Reinforced buildings and stilts to make safe Flood defences e.g. levees and sea walls Replanting Mangroves

## 13. Somerset Levels Floods. Feb - March 2014

Wettest January since records began in 1910. Successions of low pressure depressions making wet weather last several weeks. 350mm of rain in Jan / Feb (100mm over average) High tides, no dredging in 20 years

**Social Effects**  
No deaths. 600 homes flooded, evacuation, power supplies off, stress

**Economic Effects**  
Difficult to report cost. Early estimates over £10 million. More recent figures suggest £147 million. Livestock effected, people stranded, railway shut

**Environmental impacts**  
Sewage polluting fields, debris from flood, stagnant water had to be reoxygenated before being pumped into rivers.

Management strategies	Managing Climate Change				
Homeowners coped as best they could, using sandbags to protect homes. Villages used boats to go shopping, attend schools etc. Army was deployed to offer assistance.	<table border="1"> <thead> <tr> <th>Mitigation</th> <th>Adaption</th> </tr> </thead> <tbody> <tr> <td>- <b>Alternative energy production</b> will reduce CO<sub>2</sub> production. - <b>Planting Trees</b> – helps to remove carbon dioxide.</td> <td>- <b>Changes in agricultural systems</b> need to react to changing rainfall and temperature patterns and threat of disease and pests. - <b>Managing water supplies</b> – eg. by installing water efficient devices</td> </tr> </tbody> </table>	Mitigation	Adaption	- <b>Alternative energy production</b> will reduce CO <sub>2</sub> production. - <b>Planting Trees</b> – helps to remove carbon dioxide.	- <b>Changes in agricultural systems</b> need to react to changing rainfall and temperature patterns and threat of disease and pests. - <b>Managing water supplies</b> – eg. by installing water efficient devices
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## 14. Climate Change – natural or human?

Evidence for climate change shows changes before humans were on the planet. So some of it must be natural. However, the **rate** of change since the 1970s is unprecedented. Humans are responsible – despite what Mr Trump says!

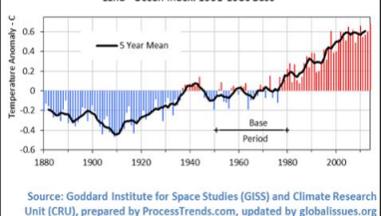
### 15. Causes

Natural	Human
<ul style="list-style-type: none"> <li>- <b>Orbital changes</b> – The sun's energy on the Earth's surface changes as the Earth's orbit is elliptical its axis is tilted on an angle.</li> <li>- <b>Solar Output</b> – sunspots increase to a maximum every 11 years.</li> <li>- <b>Volcanic activity</b> – volcanic aerosols reflect sunlight away reducing global temperatures temporarily.</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Fossil fuels</b> – release carbon dioxide with accounts for 50% of greenhouse gases.</li> <li>- <b>Agriculture</b> – accounts for around 20% of greenhouse gases due to methane production from cows etc. Larger populations and growing demand for met and rice increase contribution.</li> <li>- <b>Deforestation</b> – logging and clearing land for agriculture increases carbon dioxide in the atmosphere and reduces ability to planet to absorb carbon through photosynthesis.</li> </ul>

### 17. Effects of Climate Change

Social	Environmental
<ul style="list-style-type: none"> <li>- Increased disease eg. skin cancer and heat stroke.</li> <li>- Winter deaths decrease with milder winters.</li> <li>- Crop yields affected by up to 12% in South America but will increase in Northern Europe but will need more irrigation.</li> <li>- Less ice in Arctic Ocean increases shipping and extraction of oil and gas reserves.</li> <li>- Droughts reduce food and water supply in sub-Saharan Africa. Water scarcity in South and South East UK.</li> <li>- Increased flood risk. 70% of Asia is at risk of increased flooding</li> <li>- Declining fish in some areas affect diet and jobs.</li> <li>- Increased extreme weather</li> <li>- Skiing industry in Alps threatened.</li> </ul>	<ul style="list-style-type: none"> <li>- Increased drought in Mediterranean region.</li> <li>- Lower rainfall causes food shortages for orangutans in Borneo and Indonesia.</li> <li>- Sea level rise leads to flooding and coastal erosion.</li> <li>- Ice melts threaten habitats of polar bears.</li> <li>- Warmer rivers affect marine wildlife.</li> <li>- Forests in North America may experience more pests, disease and forest fires.</li> <li>- Coral bleaching and decline in biodiversity.</li> </ul>

## Global Temperature, 1880 - 2014



## 16. Evidence for Climate Change

The Met Office has reliable climate evidence since 1914 – but we can tell what happened before that using several methods.

### Ice and Sediment Cores

- Ice sheets are made up of layers of snow, one per year. Gases trapped in layers of ice can be analysed. Ice cores from Antarctica show changes over the last 400 000 years.
- Remains of organisms found in cores from the ocean floor can be traced back 5 million years.

### Pollen Analysis

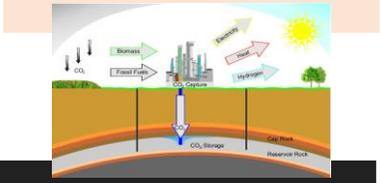
- Pollen is preserved in sediment. Different species need different conditions.

### Tree Rings

- A tree grows one new ring each year. Rings are thicker in warm, wet conditions
- This gives us reliable evidence for the last 10 000 years.

### Temperature Records

- Historical records date back to the 1850s. Historical records also tell us about harvest and weather reports.



## Definition of Health and Wellbeing

### Positive Definition

Looks at how physically fit and mentally stable a person is. You have a positive attitude towards health and well-being if you realise there is something you can do to improve your health and well-being and do it.

### Negative Definition

Looks at the absence of physical illness, disease and mental distress. You have a negative attitude towards your health and wellbeing if you:

- Base your attitudes on not having anything wrong with you
- Continue as you are - including keeping bad habits such as smoking
- Assume that because you are currently feeling fine you will stay healthy in the future

## Holistic Definition of Health and Wellbeing

### Holistic

Is a combination of physical health and social and emotional well-being. It is not just the absence of disease or illness. It looks at all aspects of a person's health and well-being. You have a holistic attitude towards health and well-being if you look after your:

### Physical Health

By meeting the needs we have to keep our bodies working as well as they can, such as food, water, shelter, warmth, clothing, rest, exercise and good personal hygiene.

### Social Aspects of Wellbeing

By meeting the needs we have to help us develop and enjoy good relationships with others, including mixing with others in appropriate environments and having access to leisure facilities and activities.

### Emotional Aspects of Wellbeing

For meeting the needs we have that make us feel happy and relaxed, such as being loved, respected and secure. We need to be able to feel, express and recognise different emotions so we can cope with whatever situations arise in life.

### Intellectual Health

In addition, we should consider a mental or intellectual health, I'm meeting the needs we have to develop and keep our brain is working as well as possible. These include mental stimulation to keep us motivated and interested.

# REMEMBER

# P. I. E. S.

## Factors which Impact Our Health and Wellbeing

<b>Physical and Lifestyle Factors</b>	<b>Genetic Inheritance</b>	Some conditions or diseases are inherited, which means they are passed on from one generation to another. Genetic conditions such as cystic fibrosis come impact overall health and well-being, such as physically it can damage your lungs, it can impact your learning as time is missed from school, can affect you emotionally by making you feel different from your peers and can impact you socially as it may prevent you from joining in activities with your friends.
	<b>Ill Health</b>	Ill-health is a physical and lifestyle factor that can have positive and/or negative effects on health and well-being. Ill-health can also be acute, chronic or sometimes both. Having ill health can impact or areas of well-being, it may stop you from keeping physically fit, it may cause emotional distress as you are worried, it may restrict you from learning opportunities such as going to school or university and it may remove you from some social opportunities.
<b>Lifestyle Factors</b>	<b>Diet</b>	A balanced diet is one that contains the correct nutrients in the right proportions to keep our bodies and mind healthy. Diet is often a lifestyle choice. Eating a healthy diet can ensure that you are provided with enough energy to stay physically active, keep you hydrated to optimise learning, it can also introduce you to new people who are also proactive in a certain lifestyle. However a poor diet can lead to an increased risk of illnesses, you may miss out on sporting activities, you may feel embarrassed by your body image and appearance.
	<b>Exercise</b>	We need to exercise to ensure we maintain our health and well-being. Exercise is a lifestyle factors that can bring many benefits. Exercising has many beneficial elements to it, exercising can have a significant impact on your emotional well-being as it can relieve stress and releases endorphins (happy hormone). Exercising is also a great opportunity to meet new people, such as in the gym or playing in team sports. Learning to exercise is also a great opportunity to discover new information on how to exercise and the reasons behind exercise. However individuals who do not exercise can have a detrimental effect on your body and mind. Lack of exercise can lead to conditions such as poor strength, stiffness in joints, obesity, Connery heart disease and osteoporosis.
	<b>Substance Abuse</b>	Substance use, such as alcohol, nicotine, illegal drugs and misuse of prescribed drugs, has a negative effect on health and well-being. Regular use can lead to long term health problems. Substances such as smoking tobacco can cause And increase risk of high blood pressure, heart attacks and cancers. Drinking too much alcohol can affect your perception and can lead to physical injury, it may also affect the liver and kidneys over long periods of abuse. However certain substances if used responsibly can have positive impacts on an individual, such as socially drinking can increase your interaction with friends and family and smoking also has a positive effect on reducing levels of stress.
	<b>Personal Hygiene</b>	Poor personal hygiene is not only unpleasant but can affect your health and well-being. Our bodies offer the correct temperature and moistness for bacteria to grow. If we are unable to keep ourselves clean, this heighten the chances of causing illness and infections. Think about our recent Covid situation. Having good hygiene is great for making you feel good about yourself having a positive impact on your self-esteem (emotional wellbeing). It also plays a big part in your social interactions, as individuals can be bullied or excluded due to their lack of hygiene.
<b>Financial Factor</b>	<b>Financial Resources</b>	Economic factors such as financial resources (how much money we have) complete a big part in how we live our lives. Not having enough can cause problems. Key terms are wealth, occupation, social class and material possessions. Having a high income can allowers to afford nice close, pay rent or mortgages, and buy luxuries such as mobile phones and cars, this will help us out practically but also to increase her self-esteem and self image (emotional well-being). Being able to afford household bills will reduce the chances of stress, anxiety and depression. However having poor income can have cause depression as individuals could be in a constant state of worrying with regards to paying bills. They may also feel that they are worthless and isolated. Having a poor income can also impact the lifestyle that you live, poorer households are more likely to eat processed foods which are normally cheaper in the supermarkets. To also cope with stresses of finances, individuals of poorer income are more likely to smoke and drink alcohol.

## Factors which Impact Our Health and Wellbeing Continued...

<b>Social and Cultural Factors</b>	<b>Social Interactions</b>	There are many social, emotional and cultural factors that affect health and well-being, one of these is social interaction. Our social needs include the opportunity to, mix with others and have access to leisure facilities and activities. Having social interactions can be really good for social development as it gives us an opportunity to meet new people and create new relationships. Having supportive relationships can help us physically by providing us support day today if we need it, having supportive relationships can also provide intellectual stimulation and encouragement in our own learning and knowledge gaining. Having supportive relationships can also make you feel supported and liked, this boosting our self-esteem. However being in an unsupportive/uncaring relationship can bring about negative impacts to our emotional development. It may cause as hurt and upset if the relationship brings about difficult situations. These types of relationships can also make us feel lonely and we may start to isolate ourselves from other social activities.
	<b>Stress</b>	Learning to control stress can help to improve health and well-being. Stress occurs when you have to respond to demands made on you. Too much stress put upon us can have many physical impacts related to our body such as an increase in blood pressure, increase in heart rate, increase in breathing, and a shift distribution from the blood from the skin and digestive system to the muscles. This is all because of adrenaline which is released when we are stressed. If you are stressed you may feel physical tension within the body and it can also cause a lack of concentration. The long-term effects of stress could be poor separation, prone to accidents, headaches, anxiety and violent tendencies.
	<b>Willingness to seek help or access services</b>	The act of seeking help is a social, emotional and cultural occurrence that affects health and well-being. This might be influenced by various factors such as culture, gender or education. Depending on your agenda this will affect willingness to seek help or access services such as men may be more reluctant to consult the doctor for something they find a passing such as a prostate examination. Women's also experience this reluctant to say for certain procedures such as; examinations, and they may wish to see a female nurse/doctor which may prolong their waiting time. Depending on how well you are educated, will depend if you have the knowledge and understanding of certain conditions and then the need to approach a service. If you are better educated you will be more aware of the services which are available. Yet it is quite understandable how some people may fear to approach a service as the outcome is unknown this will have effect on your physical health but will also have a negative impact on your emotions.
<b>Environmental Factors</b>	<b>Environment</b>	It is impossible to escape stories from pollution of one kind or another negative environmental conditions can affect people in a number of ways. Key times, pollution, a pollution and noise pollution. Individuals can have many physical impacts such as irritation to the eyes, nose and throat, breathing problems and aggravate respiratory conditions. This then can lead to isolation as individuals may fear going outside due to the physical side effects of air pollution. Living in areas where freshwater is not available can increase risk of becoming physically ill. Noise pollution which occurs over a long period of time can cause the following physical impacts, increase blood pressure, sleeplessness, hearing loss and increase in stress levels.
	<b>Housing</b>	Health and well-being is affected by the type of house you living, its condition and location. Many of us spend a lot of time in our homes and the home environment can affect our health and well-being in a number of ways. The condition of your home can impact or areas of development in variety of ways. Having a house which is cluttered, damp and dirty and has poorly groomed pets, then occupants are more likely to become ill because of poor hygiene (this is because of bacteria and other germs spreading). They don't House can also have a negative impact on respiratory conditions. Living in these conditions can also impact the relationships that you have, especially friendships as you not invite friends over due to embarrassment of the home conditions. Depending on the size of your house could have a massive impact on your intellectual development, for students and adults who work at home. If you do not have workspace, this may lead to this organisation and the motivation and may prevent you from concentrating on school work. Living in a larger house which has a garden can have huge positive impact on your physical well-being, as it gives you the space to be active and exercise.

POSITIVE

impact

NEGATIVE

HEALTH & SOCIAL CARE

## Health Indicators

Many health practitioners use physiological indicators (certain aspects of a person's health) to assess health and wellbeing. Many are used with pieces of equipment, however some indicators are collected through different methods.

### **Health Monitoring = Illness Prevention**

This means that regular monitoring of someone's health is an effective way of detecting any problems that may arise. These problems can then be dealt with as soon as possible to stop it from advancing to a more serious condition/disease or even death.

### **Example of Monitoring = Illness Prevention**

Individuals over a certain age will have their cholesterol monitored regularly. If high cholesterol is detected, then it can be corrected through eating a correct diet. If this wasn't detected, then high cholesterol could lead to heart disease or stroke.

## Illness Prevention Services

### **The National Healthy Schools Programme**

The prevention services encourage children and young people to make informed health and life choices. It does this by providing knowledge, healthy school dinners, opportunities for exercise and an environment that increases emotional wellbeing.

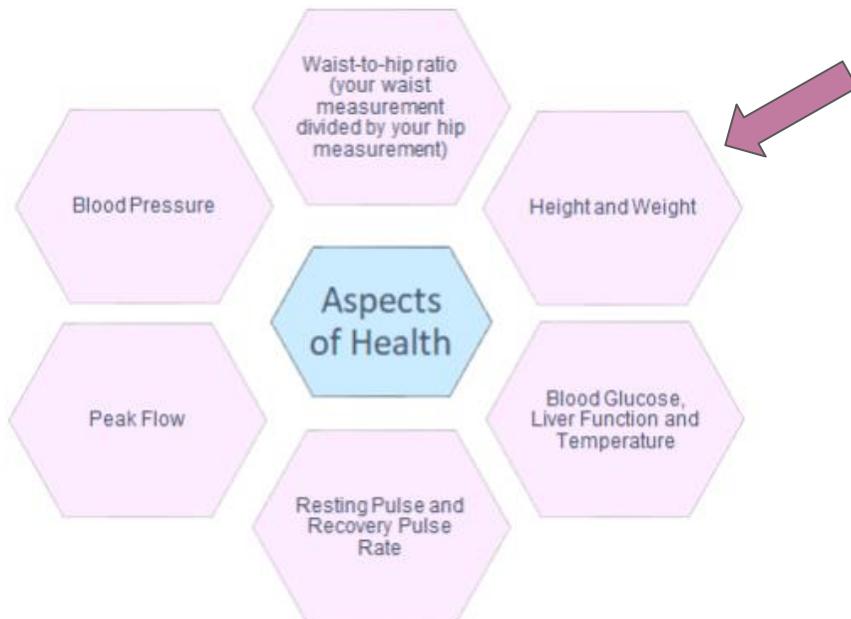
### **Health Screening**

Such screenings as dental and eye check ups and breast screening check that specific body parts are working correctly and are efficient.

### **Vaccinations**

Vaccinations can happen from babies till older adulthood and they help the body fight infectious diseases such as flu, tetanus, diphtheria and polio.

## Measurements of Health



**Measurable Indicators** = can be measured using purpose-built pieces of equipment - for example, a thermometer to measure body temperature

**Positive and Negative Aspects of Lifestyle** = this information can easily be collected from an individual through an appointment with a health practitioner or through a questionnaire.

**Positive aspects of lifestyle could be some of the following:** Regular exercise, supportive relationships, balanced diet, sleeping enough, using monitoring services such as dentists.

**Negative aspects of lifestyle could be some of the following:** Substance abuse (drinking, smoking, taking drugs), high levels of stress, living in poor housing, genetic conditions being passed down or existing chronic conditions

**Observed Indicator** = it can be quite easy for a trained health practitioner to observe an individual and gain lots of information with regards to their health. For example, observing if an individual is: over/under weight, difficulty in breathing, pale/flushed, sweating, limping, behaving oddly, twitching, has swelling, has a rash or a lump

## Interpreting Lifestyle Data

### Lifestyle Data

Lifestyle data is data collected over a long period of time from many different surveys of people and different aspects of their lifestyle such as smoking, drinking, obesity and diet.

- The Office of National Statistics (ONS) produces official statistics for the UK
- NHS Digital collects data from across the health and social care system. This data could be used by researchers, patients and health care professionals.

### The Aim of Lifestyle Data

- To help health professionals give guidance on whether or not, you are exceeding in certain lifestyle choices or not enough.
- For individuals to see out and measure their own lifestyle choices against others.

**Example:** A patient might state that they never exercise and smoke 20 cigarettes a day. A health care professional can use the data collected collect and inform the patient that they should be exercising at least 60 minutes a day 3 times a week to improve overall heart health. They could also educate the patient by informing them that they at 5 times more likely to have a heart attack compared to non smokers.

All of this information/data could help an individual choose better lifestyle choices to improve overall health and well-being.

- Another aim for collecting this data is that it gives the NHS an indication of what health issues we are having as a nation. This will then allow them to plan to tackle the health issue.

**Example:** Data collected may show an increase in obesity across both men and women. The NHS can then prepare schemes which help individuals to lose weight in a safe environment where they are supported and monitored.

Interpreting Lifestyle Data	What the Data Shows	
<b>Smoking Data</b>	<ul style="list-style-type: none"> <li>→ Smoking causes around 96,000 deaths a year in the UK</li> <li>→ Smoking causes 80% of deaths from lung cancer, 80% of deaths from bronchitis and 14% from heart disease</li> <li>→ On average a smoker will die 10 years earlier than a non smoker</li> </ul>	<ul style="list-style-type: none"> <li>→ Women smokers are at greater risk of developing osteoporosis</li> <li>→ Smoking can cause impotence and can lead to sperm abnormalities</li> <li>→ Smokers are more likely to develop facial wrinkles and have dental problems</li> </ul>
<b>Alcohol Data</b>	<ul style="list-style-type: none"> <li>→ Drinking is strongly linked to at least seven types of cancers. Example: a lifetime of drinking too much alcohol can increase risk of bowel cancer by 23%</li> <li>→ Two-thirds of cases of chronic pancreatitis are caused by heavy drinking</li> <li>→ Around 1000 people die from acute pancreatitis every year</li> </ul>	<ul style="list-style-type: none"> <li>→ You are between 2 - 5 times more likely to have an accident or injure yourself if you drink 5 - 7 units of alcohol in one sitting</li> <li>→ Each drink per day increases the risk of breast cancer in women by between 7 - 13%</li> <li>→ In 2011, 3,000 cases of breast cancer were directly caused by alcohol consumption</li> </ul>
<b>Regular Activity Data</b>	<ul style="list-style-type: none"> <li>→ 30% reduction of risk of early death</li> <li>→ 30-40% lower risk of developing type 2 diabetes</li> <li>→ 20-35% lower risk of cardiovascular disease, coronary heart disease and stroke</li> <li>→ 30% lower risk of colon cancer</li> </ul>	<ul style="list-style-type: none"> <li>→ Has positive benefits for mental health such as feeling happier, having a more positive self-esteem and reduced anxiety</li> <li>→ Reduction in depression</li> <li>→ 68% reduction in the risk of hip fractures</li> <li>→ 20% lower risk of breast cancer</li> </ul>

## venues and live performance:

A venue is a place where a live performance can be held.

# UNIT 1 - THE MUSIC INDUSTRY

Royalties - money paid to artists and performers.

## Large Venues

A large venue can encompass a wide variety of different types of venues. For music events this can mean arenas, stadiums, large outdoor festivals and large west end theatres. There are many advantages and disadvantages associated with this type of venue.

*What overheads would a large venue have?*



O2 Arena (London)

### **Advantages could be:**

- They have excellent sound and technical facilities
- You would have a much larger amount of publicity and promotion available
- You can charge higher fees for tickets.



Glastonbury Festival (Somerset)

- More seats available for purchase

### **Disadvantages could be:**

- There are large costs in hiring a venue of that size
  - You would have to have a certain level of fame in order to attract the amount of people needed to make a profit
  - Less intimate interaction with the audience which may conflict with style of music e.g. acoustic guitar gig played in an arena.
- More people needed to facilitate event so money will be divided amongst larger group.

## Small and Medium Venues

When you are starting out a musician you will be playing at venues of this size. These can be venues such as pubs and bars, school stages, small theatres or community centres. There are many advantages and disadvantages associated with this type of venue.

### **Advantages could be:**

- Intimate atmosphere as you are closer to the audience so you can convey expression and personality more easily
- More accessible to local bands, especially if they need to transport equipment



Live Music in a Pub

*Why is playing in local venues good for building a career?*



We pay royalties to our members when their work is performed, broadcast, streamed, downloaded, reproduced, played in public or used in film and TV. We support them by influencing policy, supporting and hosting awards and events, and investing in new technology to ensure we're fit for the digital music age.



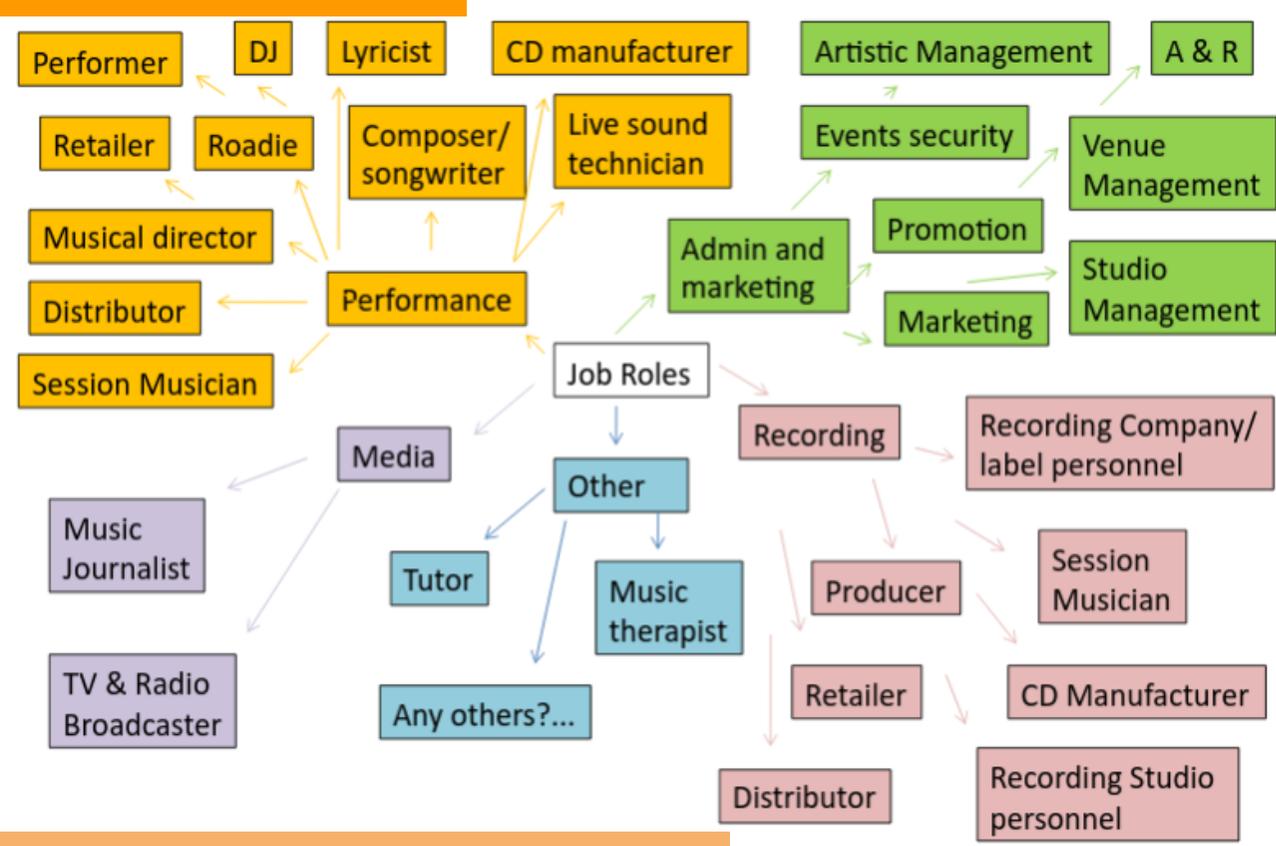
PPL is the UK's music licensing company for over 100,000 performers and recording rightsholders. We have been licensing the use of recorded music in the UK since 1934.



We stand up for employed and self-employed musicians working in every area of the UK music industry, and in music education.

We work to maximise the employment and overall income of musicians as well as protecting and improving working conditions. We also offer advice, support and legal assistance based on every individual member's needs.

# Roles in the Music Industry:



## Musician

A musician is someone who performs music through the playing of an instrument or singing. Musicians play many different styles of genre's, from Jazz to Pop, from Classical to Folk.

Musicians main responsibilities are:

- Train and practise regularly to keep skills to a high standard
- Turn up to rehearsals on time and ready to play
- Look after their instrument or their voice
- Learn new music for a show.

*Why is it difficult to be a professional musician?*



Ed Sheeran (Guitarist and Vocalist)

## Studio Manager

A Studio Manager makes sure that the studio is organised, in terms of bookings, equipment and administration. They are involved in the business side of the operations and making sure that they keep existing clients satisfied and attract new business to the recording studio.

Studio Managers main responsibilities are:

- Ensure that the studio is run effectively and that it is financially profitable
- Schedule times and liaise with clients
- Employ session musicians and engineers
- Promotion and marketing of studio
- Check Health and Safety is in place to safeguard clients and employees

*What health and safety concerns are there at a studio?*



Abbey Road Studios (London)

**Roadie** - The road crew (roadie) are the technicians or support personnel who travel with a band on tour and handle every part of the concert production except actually performing the music.

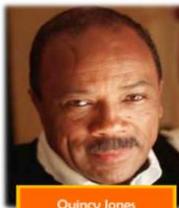
## Record Producer

A Record Producer (or Music Producer) has a very broad role in overseeing and managing the recording (i.e. "production") of a band or performer's music. They have a lot of responsibility over the final recording made and are often likened to the director of a film in terms of their importance and overall creative input.

Record Producers main responsibilities are:

- Oversee and manage the recording of an artist's music
- Gather ideas for the project and select songs
- Hire session musicians for the project
- Coach the artist in the studio
- Control the recording session
- Supervise the entire process through mixing to mastering

*What coaching would they give the artist? And why?*



Quincy Jones (Record Producer: Thriller)

## Instrument Technician

Instrument Technicians are those that have specialist knowledge of specific instruments and can therefore support with the use of them. They also have knowledge of how they should be used or the best configuration to get the best sound.

Instrument Technicians main responsibilities are:

- Look after the instrument
- Fix the instrument when broken (e.g. broken strings)
- Give advice regarding best use of equipment

*What expertise would you need to have and know?*

## Artistic Manager/Talent Manager

A artistic manager, also known as a talent manager, band manager or music manager, is an individual who guides the professional career of artists in the music industry.

Artistic Managers main responsibilities are:

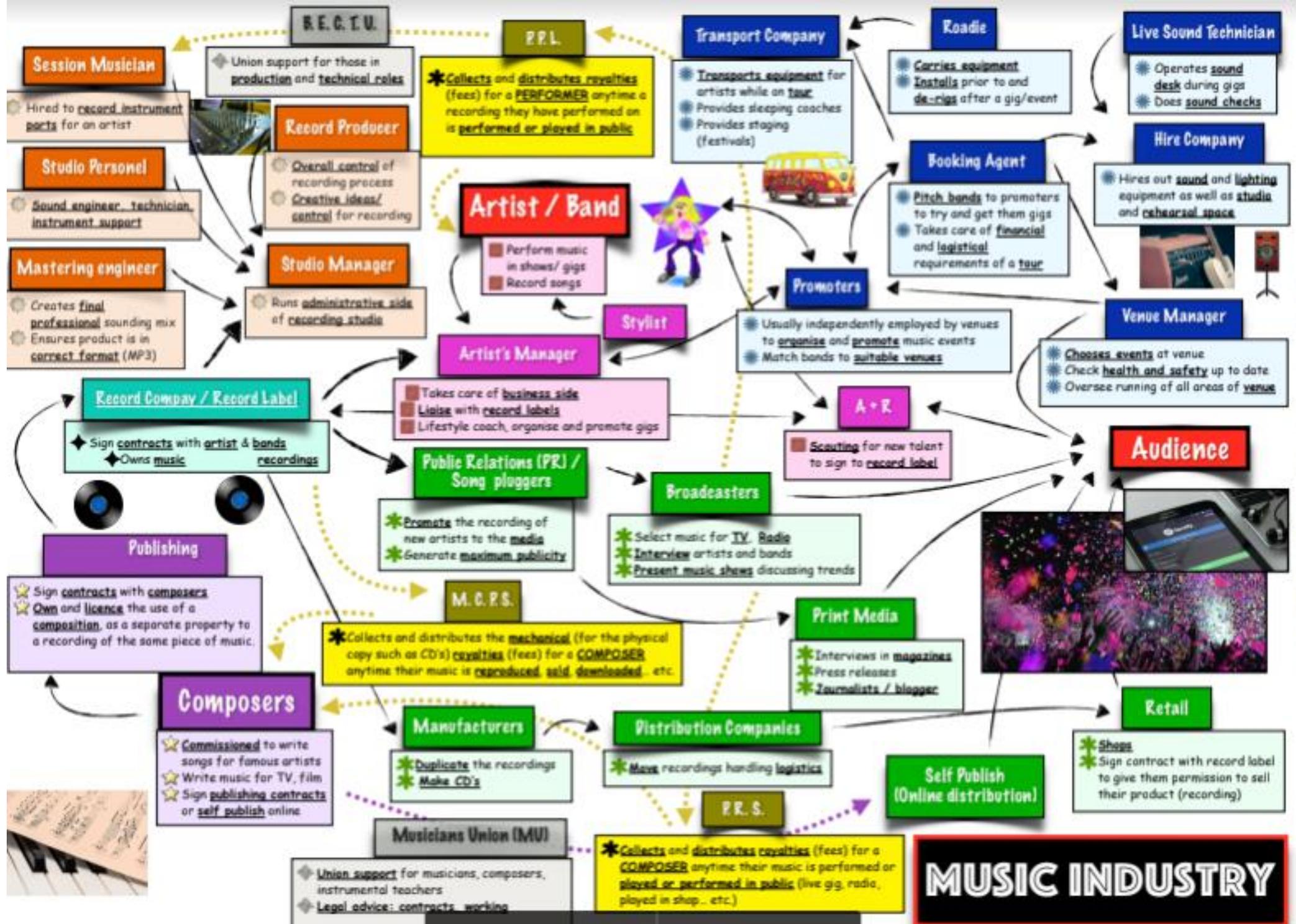
- Organise and confirm show dates and tours
- Liaise with record companies
- Assist with studio planning
- Support artist on a personal level, with advice on lifestyle choices
- To maintain the high standard needed of the artist
- Exploit marketing opportunities.

*Why can't artists manage themselves?*



Scooter Braun (Talent Manager: Justin Bieber)

**Live Sound Technician** controls the sound at a live event such as a theatre performance and music concert. They operate microphones, amplifiers and control desks to balance the sound levels, as well as providing background music and sound effects.



# MUSIC INDUSTRY

# MUSIC



# Knowledge Organiser- Year 11



## GCSE Photography Year 2

IF YOU NEED HELP WITH YOUR WORK CONTACT MRS TURNER- TURNER@PLYMPTON.ACADEMY

1 Mode dial	2 Release-mode selector	3 Information button
4 Exposure compensation button/Aperture button/Flash compensation button	5 Shutter-release button	6 Power switch
7 AF-assist illuminator/ Self-timer lamp/ Red-eye reduction lamp	8 Accessory shoe (for optional flash units)	9 Flash mode button/ Flash compensation button
10 Microphone	11 Function button	12 Lens release button
13 Playback button	14 Menu button	15 Thumbnail button/Playback zoom out button/Help button
16 Playback zoom in button	17 Information edit button	18 Viewfinder eyepiece
19 Diopter adjustment control	20 AE-L/AF-L button/Protect button	21 Command dial
22 Live View switch	23 Movie-record button	24 Multi selector
25 OK button	26 Delete button	27 Speaker
28 Monitor		



EXTERNALLY SET ASSIGNMENT

EXAM



DON'T FORGET TO USE THE 10 RULES OF COMPOSITION

SKETCHBOOK PRIORITIES:

- PRESENTATION- CLEAR EASY TO READ
- SHOOTS- 30 OF YOUR OWN IMAGES, THE BEST 4 PRESENTED AND WRITTEN UP
- CONTACT SHEETS- STUCK IN AND ANNOTATED
- PHOTOGRAPHER STUDIES- ANNOTATED, PERSONAL LINKED TO METAMORPHOSIS
- SHOOT PLANS- DETAILED AND WRITTEN IN FULL SENTENCES
- IDEAS PAGES- CLEAR LINK TO PHOTOGRAPHERS AND PERSONALISED IDEAS
- IMAGES- CUT WITH TRIMMER STRAIGHT EDGES, NEATLY GLUED IN
- ANNOTATION-USE THE ANNOTATION WINDOW AND SENTENCE STARTERS TO HELP



USEFUL WEBSITES:

- WWW.DAZEDDIGITAL.COM
- WWW.TRENDLAND.COM
- WWW.STUDENTARTGUIDE.COM
- WWW.THISISCOLOSSAL.COM
- WWW.ARTZDAY.CO.UK

## PHOTOGRAPHY

## ¿Por dónde se va a... (How do you get to....?)

Para ir... (To get...)	al castillo (to the castle)	toma (take)	la primera [calle] (the first [street])	a la derecha (on the right)
	al centro comercial (to the shopping centre)		la segunda [calle] (the second [street])	
	al cine (to the cinema)	tuerce / gira (turn)	la tercera [calle] (the third [street])	a la izquierda (on the left)
	al estadio (to the stadium)			
	al hospital (to the hospital)	sigue todo recto (go straight on)		
	al mercado (to the market)	baja (go down)	la calle (the street)	la plaza (the square)
	al museo (to the museum)			
	al parque (to the park)	cruza (cross)	los semáforos (the traffic lights)	el puente (the bridge)
	al polideportivo (to the sports centre)			
	a la piscina (to the swimming pool)			
	a la playa (to the beach)			
	a la plaza (to the square)			
	a la plaza de toros (to the bullring)			
	a la tienda (to the shop)			

Note: when saying 'to the' in Spanish we use a + either 'el' or 'la'. When using a + el, they run together to become 'al'.

<u>VERB</u>	<u>NOUN</u>	<u>VERB</u>	<u>VERB</u>	<u>ADJECTIVE</u>	<u>VERB - REASON</u>
<p>Hice mis prácticas laborales en... <i>(I did my work experience in... )</i></p>	<p>una agencia de viajes <i>(a travel agents)</i></p> <p>la empresa de mi madre <i>(my mum's company)</i></p>	<p>contestaba el teléfono. <i>(I answered the phone)</i></p> <p>archivaba documentos. <i>(I filed documents)</i></p>	<p>Mi jefe era <i>(my boss was)</i></p>	<p>muy acogedor <i>(very welcoming)</i></p> <p>alegre <i>(happy)</i></p> <p>desagradable <i>(unpleasant)</i></p>	<p>no aprendí ... <i>(I didn't learn ...)</i></p> <p>nada útil <i>(anything useful)</i></p> <p>nada nuevo <i>(anything new)</i></p>
<p>Pasé... días trabajando en... <i>(I spent ... days working in...)</i></p>	<p>una emisora de radio <i>(a radio station)</i></p> <p>una escuela <i>(a primary school)</i></p> <p>una tienda benéfica <i>(a charity shop)</i></p> <p>una fábrica de juguetas <i>(a toy factory)</i></p> <p>un taller <i>(a workshop)</i></p> <p>una peluquería <i>(a hairdressers)</i></p> <p>una granja <i>(on a farm)</i></p>	<p>mandaba emails. <i>(I sent emails)</i></p> <p>ayudaba a los profes. <i>(I helped the teachers)</i></p> <p>enseñaba a a los niños. <i>(I taught the children)</i></p> <p>ayudaba a los clientes. <i>(I helped the clients)</i></p> <p>limpiaba. <i>(I cleaned)</i></p> <p>trabajaba en la caja. <i>(I worked the till)</i></p> <p>daba comida a los animales. <i>(I fed the animals)</i></p>	<p>Mis compañeros eran <i>(my colleagues were)</i></p> <p>Los clientes eran <i>(the clients were)</i></p>	<p>super graciosos <i>(very funny)</i></p> <p>ignorantes <i>(ignorant)</i></p> <p>maleducados <i>(rude)</i></p> <p>acogedores <i>(welcoming)</i></p> <p>comprensivos <i>(understanding)</i></p> <p>pacientes <i>(patient)</i></p>	<p>habilidades nuevos <i>(new skills)</i></p> <p>a trabajar en equipo <i>(to work in a team)</i></p> <p>fue una experiencia... <i>(it was a ... experience)</i></p> <p>educativa <i>(educational)</i></p> <p>informativa <i>(informative)</i></p> <p>inolvidable <i>(unforgettable)</i></p> <p>inútil <i>(useless)</i></p> <p>útil <i>(useful)</i></p>

## ¿Qué quieres hacer como trabajo? *(What job do you want?)*

<u>FUTURE TIME PHRASE</u>	<u>VERB</u>	<u>INFINITIVE</u>	<u>NOUN</u>	<u>CONNECTIVE</u>	<u>OPINION</u>	<u>REASON</u>	
<b>Cuando sea mayor</b> <i>(When I'm older)</i>	<b>voy a</b> <i>(I'm going)</i>	<b>ser</b> <i>(to be)</i>	<b>abogado/a</b> <i>(lawyer)</i>	<b>dado que</b> <i>(given that)</i>	<b>pienso que</b> <i>(I think that)</i>	<b>es bien pagado.</b> <i>(it's well paid)</i>	
	<b>quiero</b> <i>(I want)</i>		<b>azafata</b> <i>(flight attendant)</i>		<b>se me dice que</b> <i>(they tell me that)</i>	<b>es emocionante.</b> <i>(it's exciting)</i>	
<b>Cuando termino mis estudios</b> <i>(When I finish my studies)</i>	<b>me gustaría</b> <i>(I'd like)</i>	<b>trabajar como</b> <i>(to work as)</i>	<b>bombero/a</b> <i>(firefighter)</i>	<b>porque</b> <i>(because)</i>	<b>he oído que</b> <i>(I've heard that)</i>	<b>es trabajo imprescindible.</b> <i>(it's essential work)</i>	
	<b>quisiera</b> <i>(I would like)</i>		<b>cocinero/a</b> <i>(chef)</i>		<b>dependiente</b> <i>(shop assistant)</i>	<b>no es trabajo duro.</b> <i>(it's not hard work)</i>	
<b>El año próximo</b> <i>(Next year)</i>	<b>espero</b> <i>(I hope)</i>	<b>hacerme</b> <i>(to become)</i>	<b>enfermero/a</b> <i>(nurse)</i>	<b>ya que</b> <i>(since)</i>	<b>quiero</b> <i>(I want)</i>	<b>no es monótono.</b> <i>(it's not dull)</i>	
			<b>fontanero/a</b> <i>(plumber)</i>			<b>granjero/a</b> <i>(farmer)</i>	<b>ganar mucho dinero.</b> <i>(to earn a lot of money)</i>
			<b>hombre/mujer de negocios</b> <i>(businessman/woman)</i>			<b>ingeniero/a</b> <i>(engineer)</i>	<b>trabajar al aire libre.</b> <i>(to work outdoors)</i>
			<b>soldado/a</b> <i>(soldier)</i>			<b>peluquero/a</b> <i>(hairdresser)</i>	<b>quisiera</b> <i>(I would like)</i>
						<b>viajar mucho.</b> <i>(to travel a lot)</i>	

## ¿Qué planes futuros tienes? (What future plans do you have?)

<u>FUTURE TIME PHRASE</u>	<u>VERB</u>	<u>INFINITIVE PHRASE</u>	<u>FUTURE TIME PHRASE</u>	<u>VERB</u>	<u>INFINITIVE PHRASE</u>	<u>CONN'V</u>	<u>REASON</u>
Si vaya a universidad (If I go to university)	voy a (I am going to)	hacer mi bachillerato (do a degree)	y en diez años (and in ten years)	voy a (I am going to)	montar mi propio negocio (start my own business)	dado que (given that)	el matrimonio es importante (marriage is important)
Cuando vaya a la universidad (When I go to University)	tengo la intención de (I have the intention of)	estudiar un oficio (learn a trade)	y cuando sea mayor (and when I'm older)	tengo la intención de (I have the intention of)	trabajar en el extranjero (work abroad)		quiero ser rico (I want to be rich)
Cuando termino mis estudios en el colegio (When I finish my studies in school)	quiero (I want to)	aprender a conducir (learn to drive)	y si tuviera suerte (and if I'm lucky)	quiero (I want to)	casarme con alguien famoso (marry someone famous)	porque (because)	me encantaría viajar el mundo (I would love to travel the world)
El año próximo (Next year)	me gustaría (I would like to)	compartir piso con amigos (share a flat with friends)	y cuando me enamoré (and when I fall in love)	me gustaría (I would like to)	aprender a conducir (learn to drive)		quiero ayudar a las personas en pobreza (I want to help people in poverty)
		<u>FUTURE VERB</u>			<u>FUTURE VERB</u>	ya que (since)	me gustaría comprar un coche (I want to buy a car)
		haré el bachillerato (I will do a degree)			montaré mi propio negocio (I will start my own company)		
		estudiaré un oficio (I will learn a trade)			trabajaré en el extranjero (I will work abroad)		
		aprenderé a conducir (I will learn to drive)			Seré jefe de negocio (I will be the boss of a company)		
		compartiré un piso con amigos (I will share a flat with friends)			me casaré con alguien famoso (I will marry someone famous)		
					empezaré mi propia familia (I will start my own family)		

¿Qué haces para ayudar a otros? (*What do you do to help others?*)

¿Te gustaría hacer trabajo voluntario? (*Would you like to do volunteering work in the future?*)

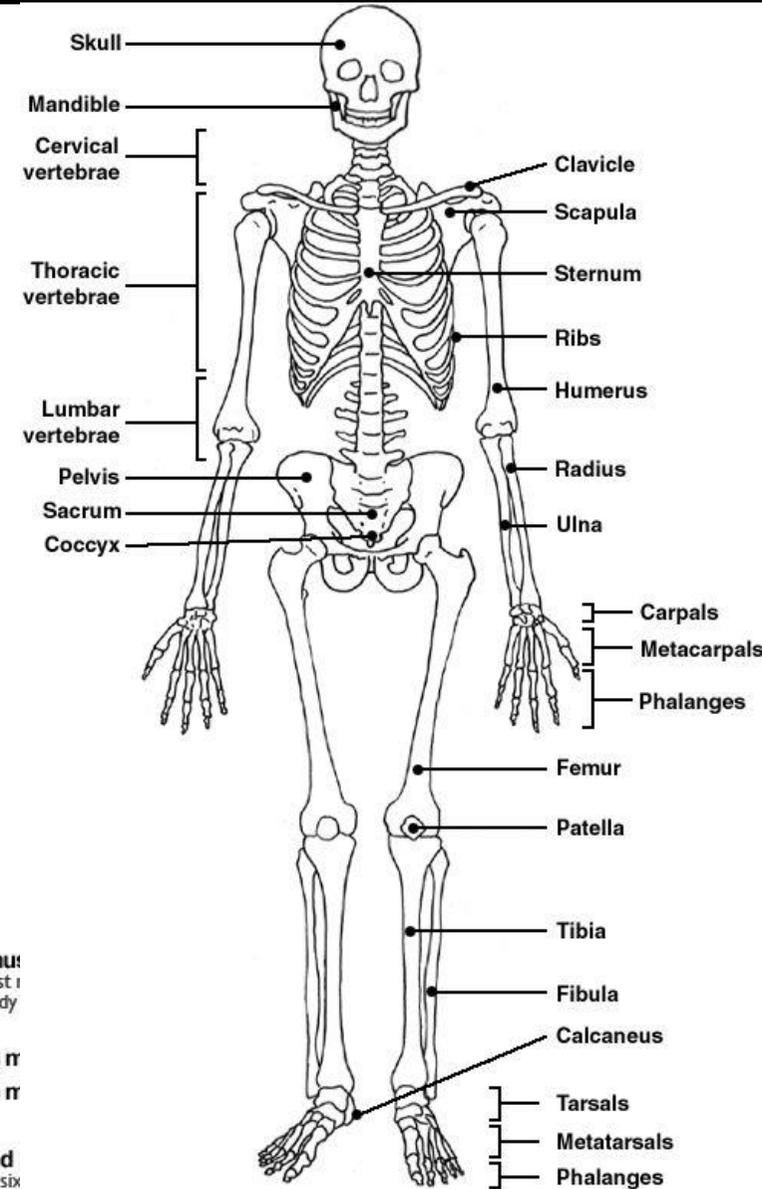
<u>INFINITIVE PHRASE</u>	<u>VERB</u>	<u>NOUN</u>	<u>CONN'VE</u>	<u>OPINION VERB</u>	<u>REASON</u>
<p>Para ayudar a personas <i>[To help people]</i></p>	<p>dono dinero a <i>[I donate money to]</i></p> <p>doy comida a <i>[I give food to]</i></p> <p>recaudo fondos para <i>[I fundraise for]</i></p> <p>trabajo con <i>[I work with]</i></p>	<p>los necesitados <i>[the needy]</i></p> <p>los pobres <i>[the poor]</i></p> <p>los sin techo <i>[the homeless]</i></p> <p>las organizaciones benéficas <i>[charity]</i></p> <p>al banco de alimentos <i>[to the food bank]</i></p>	<p>porque <i>(because)</i></p> <p>dado que <i>(given that)</i></p> <p>ya que <i>(since)</i></p>	<p>opino que <i>(I think that)</i></p> <p>creo que <i>(I believe that)</i></p> <p>pienso que <i>(I think that)</i></p>	<p>es importante contribuir. <i>(it's important to contribute)</i></p> <p>hay que ser simpático/a. <i>(you have to be kind)</i></p> <p>no deberíamos ser egoístas. <i>(we shouldn't be selfish)</i></p> <p>todos merecen una oportunidad. <i>(everyone deserves a chance)</i></p>
<p>Quisiera <i>(I would like)</i></p> <p>Me encantaría <i>(I would love)</i></p>	<p><u>INFINITIVE PHRASE</u></p> <p>trabajar como voluntario para <i>(to work as volunteer for)</i></p> <p>ayudar a <i>(to help)</i></p> <p>apoyar <i>(to support)</i></p> <p>apadrinar a <i>(to sponsor)</i></p>	<p><u>NOUN</u></p> <p>la residencia para mayores <i>(the care home)</i></p> <p>el comedor social <i>(the soup kitchen)</i></p> <p>el banco de alimentos <i>(the food bank)</i></p> <p>la tienda benéfica <i>(the charity shop)</i></p> <p>un niño <i>(a child)</i></p>		<p><u>VERB</u></p> <p>quiero <i>(I want)</i></p> <p>espero <i>(I hope)</i></p>	<p><u>INFINITIVE PHRASE</u></p> <p>aprender cosas nuevas. <i>(to learn new things.)</i></p> <p>conocer gente nueva. <i>(to meet new people.)</i></p> <p>hacer una diferencia. <i>(to make a difference.)</i></p> <p>recaudar dinero para los necesitados. <i>(to raise money for the needy.)</i></p> <p>ayudar a los sin techo. <i>(help the homeless.)</i></p>

<u>OPINION VERB</u>	<u>NOUN</u>	<u>INFINITIVE PHRASE</u>	<u>VERB</u>
<p><b>Me enfada</b> <i>[(it) angers me]</i></p>	<p><b>el cambio climático</b> <i>[climate change]</i></p>	<p><b>Para reducir malgastos</b> <i>[to reduce waste]</i></p>	<p><b>me pongo un jersey en vez de poner la calefacción.</b> <i>[I put on a jumper instead of the heating.]</i></p>
<p><b>Me hace triste</b> <i>[(it) makes me sad]</i></p>	<p><b>la basura</b> <i>[litter]</i></p>	<p><b>Para evitar daño</b> <i>[to avoid harm]</i></p>	<p><b>desenchufo los aparatos eléctricos.</b> <i>[I unplug appliances.]</i></p>
<p><b>Me importa</b> <i>[(it) is important to me]</i></p>	<p><b>el medio ambiente</b> <i>[the environment]</i></p>	<p><b>Para evitar daño</b> <i>[to avoid harm]</i></p>	<p><b>apago la luz.</b> <i>[I turn off the light.]</i></p>
<p><b>Me interesa</b> <i>[(it) interests me]</i></p>	<p><b>la naturaleza</b> <i>[nature]</i></p>	<p><b>Para proteger el medio ambiente</b> <i>[to protect the environment]</i></p>	<p><b>me ducho en vez de bañarme.</b> <i>[I have a shower instead of a bath.]</i></p>
<p><b>Me preocupa</b> <i>[(it) worries me]</i></p>	<p><b>la falta de agua</b> <i>[the lack of water]</i></p>	<p><b>Para proteger el planeta</b> <i>[to protect the planet]</i></p>	<p><b>cierro el grifo.</b> <i>[I turn off the tap.]</i></p>
<p><b>Me fastidia/molesta</b> <i>[(it) annoys me]</i></p>	<p><b>el malgasto de energía</b> <i>[the waste of energy]</i></p>	<p><b>Para proteger el medio ambiente</b> <i>[to protect the environment]</i></p>	<p><b>evito el uso de combustibles fósiles.</b> <i>[I avoid using fossil fuels]</i></p>
<p><b>Me preocupa</b> <i>[(it) worries me]</i></p>	<p><b>la falta de agua</b> <i>[the lack of water]</i></p>	<p><b>Para ahorrar energía</b> <i>[to save energy]</i></p>	<p><b>evito el uso de bolsas plásticas.</b> <i>[I avoid using plastic bags]</i></p>
<p><b>Me preocupa</b> <i>[(it) worries me]</i></p>	<p><b>el desperdicio de recursos</b> <i>[the waste of resources]</i></p>	<p><b>Para ahorrar agua</b> <i>[to save water]</i></p>	<p><b>uso el transporte público.</b> <i>[I use public transport.]</i></p>
			<p><b>voy al colegio a pie.</b> <i>[I go to school on foot.]</i></p>
			<p><b>reciclo latas.</b> <i>[I recycle cans.]</i></p>
			<p><b>reciclo papel.</b> <i>[I recycle paper]</i></p>
			<p><b>reciclo vidrio.</b> <i>[I recycle glass.]</i></p>
			<p><b>separo la basura.</b> <i>[I separate rubbish]</i></p>
			<p><b>no tiro a basura.</b> <i>[I don't litter]</i></p>

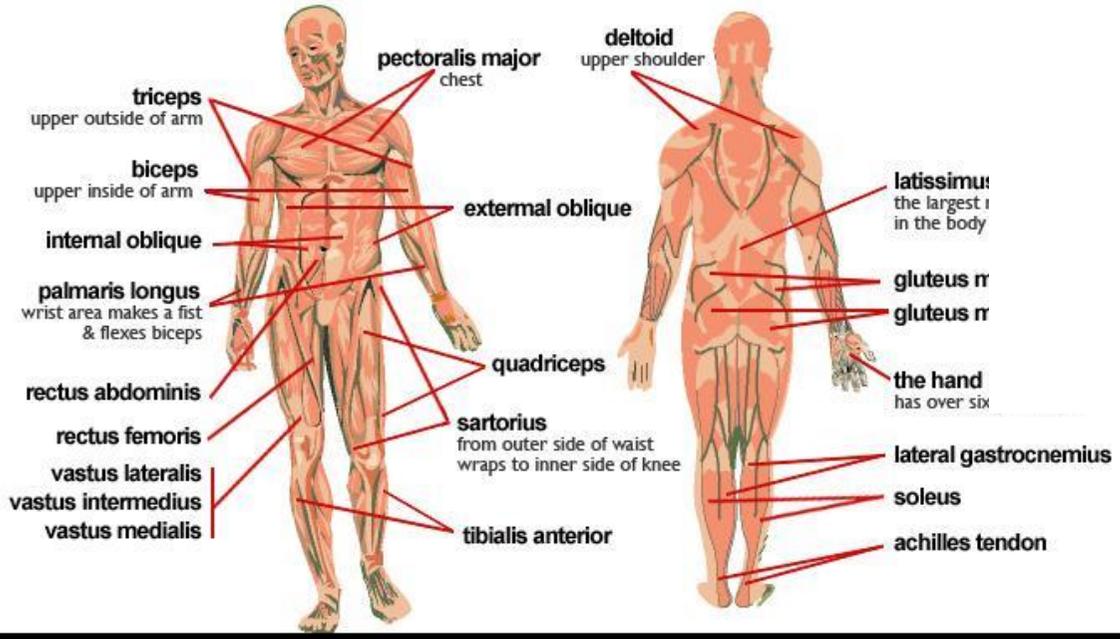
# PHYSICAL EDUCATION - MUSCLES/ BONES

The **musculoskeletal system** is made up of the body's bones (the skeleton), the muscles, cartilage, tendons, ligaments, joints, and other connective tissue that supports and binds tissues and organs together. Its primary functions include supporting the body, allowing motion, and protecting vital organs.

- Key words**
- **Joint** = The point at which 2 or more bones meet.
  - **Ligaments** = The bands of tough elastic tissue around your joints. They connect bone to bone, give your joints support, and limit their movement.
  - **Tendons** = Tissues that attach muscles to bones.
  - **Cartilage** = A smooth elastic tissue, rubber-like padding that covers and protects the ends of long bones at the joints .
  - **Organs** = A group of tissues in a living organism that have been adapted to perform a specific function. For example, the heart, lungs, brain.



The Muscular system (muscles)



The skeleton (bones)

# PHYSICAL EDUCATION - A HEALTHY BALANCED DIET

**A balanced diet** – eating the right foods in the correct proportions. Taking in the right amount of calories for the expenditure of energy.

**In order to perform well in sport, an athlete needs to have a healthy balanced diet.**

**There are 7 components of a balanced diet, these are:**

- 1• **Carbohydrates** – Main energy source. i.e. pasta & potatoes
- 2• **Fats** – Secondary energy source & provides insulation. i.e. butter
- 3• **Proteins** – Help growth and repair of muscles. i.e. eggs, white meat & fish
- 4• **Minerals** – Maintains a healthy bodily functioning. i.e. iron and calcium
- 5• **Vitamins** - Maintains a healthy immune system. i.e. vitamin C/D
- 6• **Fibre** – Aids digestion of food in the gut. i.e. cereals & nuts
- 7• **Water** – Maintains hydration of an athlete.

1



2



3



4



5



6



7



## **Hydration and physical activity**

**Water** is necessary for:

- Transportation of nutrients
- Removes waste products through urine
- Regulates body temperature

A lack of water can cause **dehydration**. Symptoms are tiredness, lack of concentration and headaches.

**After the event** - An athlete will continue to drink fluids to replace the water and carbohydrate levels that are depleted.



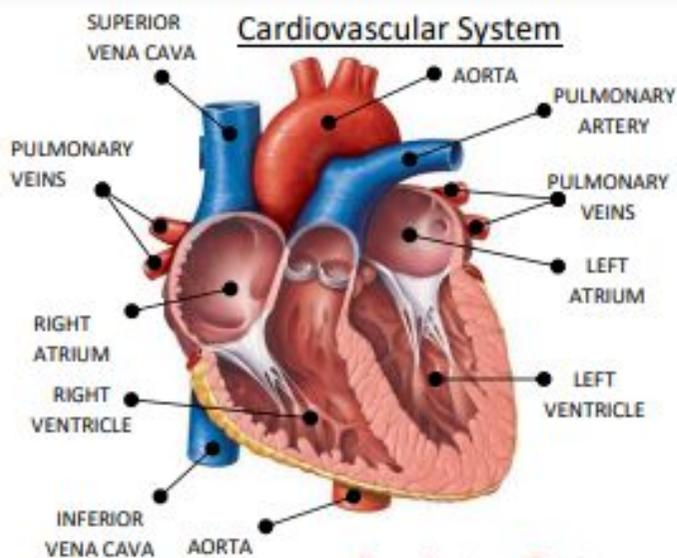
In order to have a healthy balanced diet, you should eat a variety of different food groups. The **eatwell plate** shows you the approximate portions.

## **The eatwell plate**

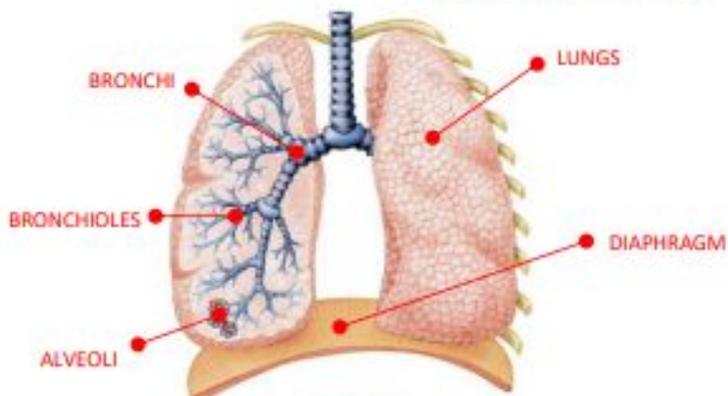
Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each Food group.



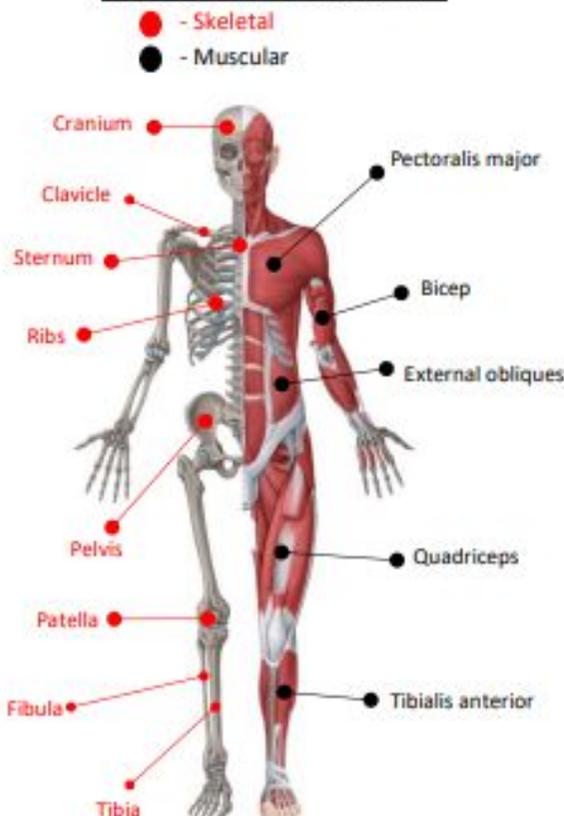
### Cardiovascular System



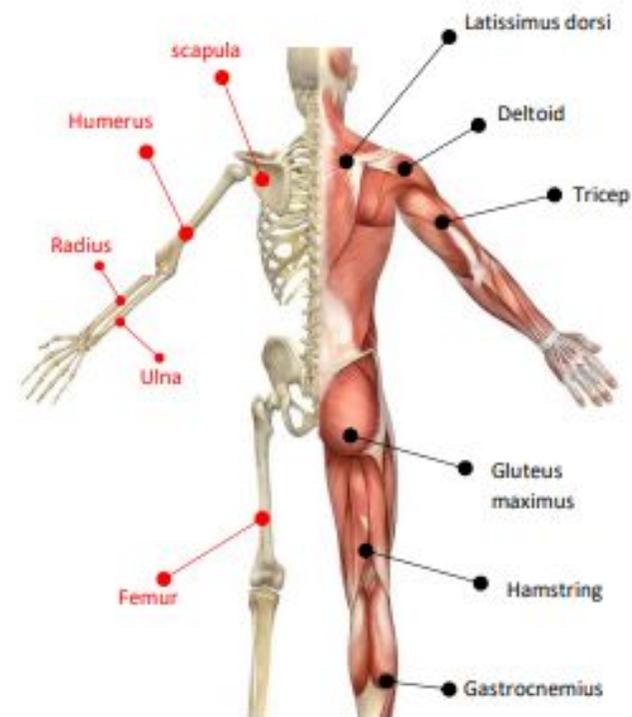
### Respiratory System



### Musculoskeletal System



The musculoskeletal and cardiorespiratory systems and the effects on the body during fitness training



### Short-term effects of fitness training on cardiorespiratory and musculoskeletal systems



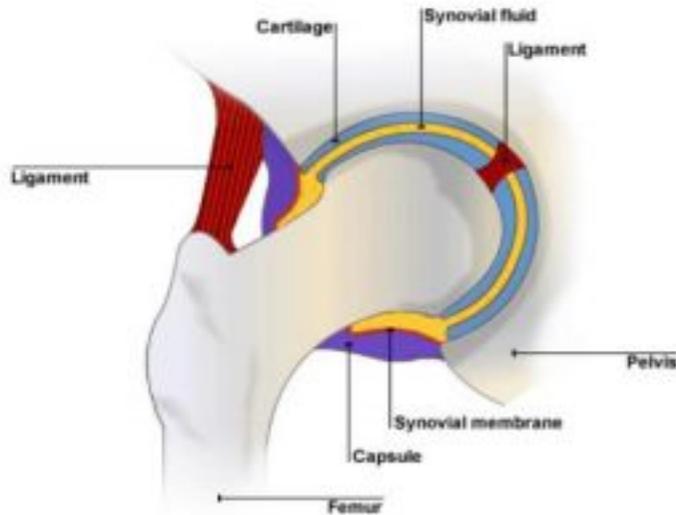
The musculoskeletal and cardiorespiratory systems and the effects on the body during fitness training

## Synovial joints

### The Hip



- Ball and socket
- produces a lot of movement in the lower body
- **Sporting example**- kicking a football



### The Shoulder



- Ball and socket (head of humerus into shoulder socket)
- produces a lot of movements e.g. abduction, adduction, rotation, flexion and extension
- **Sporting example** - a goalkeeper diving to make a save

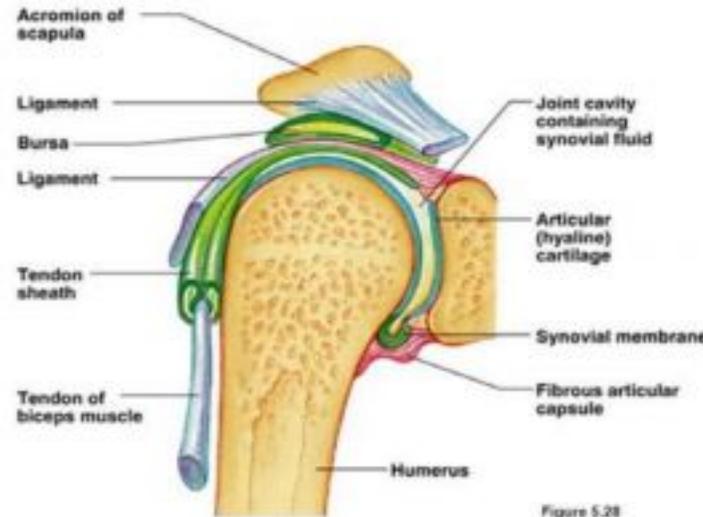
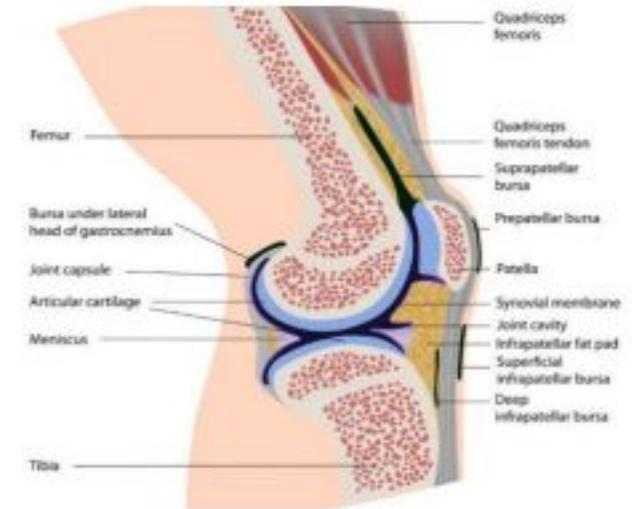


Figure 5.28

### The Knee

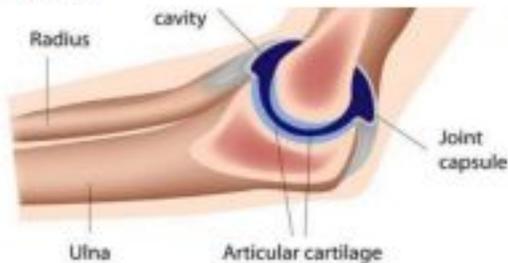
- Hinge joint
- Movements – flexion and extension to allow knee to bend
- Cartilage stops the femur and tibia from rubbing together
- **Sporting example** – kicking a free kick in football



### The Elbow



- Hinge joint
- Movements – flexion and extension to allow arm to bend
- Cartilage stops the humerus and ulna and radius from rubbing together
- **Sporting example** – throw-in during a game of football



The joints that allow us to move - 2 or more bones meet at a joint to produce movement. The joints are held together with ligaments



The synovial joints contain synovial fluid, lubricating the joint and allowing for free movement



Cartilage on the end of bones stops bones from rubbing against one another at a joint. Tendons attach surrounding muscles to bones at the joints.



# REVISE@PA

# FLASH CARDS

**USE** Memorising key words/facts/short pieces of information.

## WHAT ARE THEY?

A set of cards with a question/ key word on one side and an answer/ definition on the other. You learn as you make the cards and then have an excellent tool to test yourself over and over until you know the answers.

## HOW DO I USE THEM?

### MAKING THE CARDS:

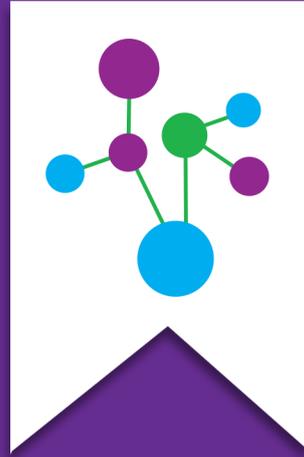
1. Buy or make some cards (A6 size) - Not paper.
2. Write the topic/subject in the corner of the card.
3. Write a key word/ question on the same side of the card.
4. On the other side of the card write the answer (if you have written a question) or definition/ explanation (if it is a key word).
5. Make a set of cards - You can use different colour cards for different topics or for easier and harder questions.

### USING THE CARDS:

1. Read through cards (both sides) one at a time.
2. Test yourself- go through the cards one at a time. If you have asked a question, try to answer it out loud or in your mind; if you have written a key word try to recall as much information as you can.
3. After each card, turn it over and look at the answer/definition. If you are happy with the way you have answered it put it on the RIGHT pile. If you got the information wrong or your answer was incomplete , put it on the WRONG pile.
4. When you have gone through all the cards, repeat the process with the WRONG pile. Keep repeating until you have no cards in the WRONG pile.
5. You can also use your cards to test your friends.

***Put your cards in a safe place - You can come back to them in future.***

**PLYMPTON ACADEMY**



**TERM THREE & FOUR**

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**HANDBOOK**

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**YEAR 11**