

# Knowledge Organiser Booklet Year 11 Term 2 Non Core

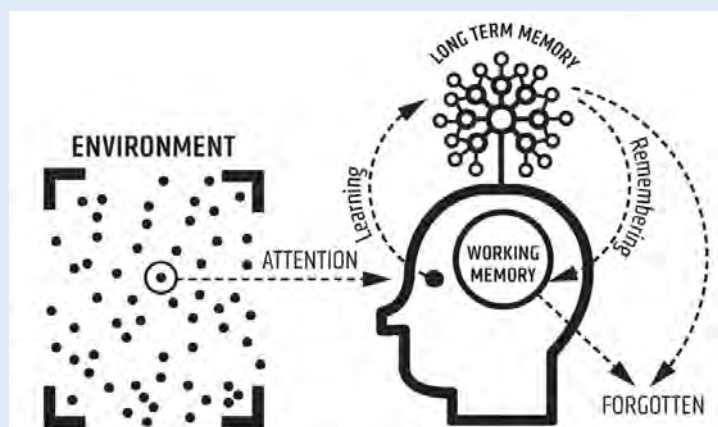


Our working memories can only store a limited amount of information, whereas our long term memories can store limitless information. To learn successfully, we need to store core knowledge into our long term memories, so we can retrieve it when we need it.

For instance, if you are at work or in the shops and need to work out a 25% discount, you can't memorise 25% of every number, so you need to be able to quickly recall the method for calculating a percentage. Committing core knowledge to our long-term memories is a life-hack. It makes thinking about difficult things easier.

Using a knowledge organiser with regular retrieval activities is a way for you to store core knowledge & subject specific words, into your long term memory so it is there when you need it.

Click here to be taken to the knowledge organiser part of the school website.



# Contents

Clicking on the subjects below will take you directly to the knowledge organisers for each subject. These are to support learning that has taken place this past term. Use these to help reinforce the key knowledge. Use some of the strategies explained in the introduction to help you retain this important information.

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# Blended Learning Expectations

Make sure you have access to a computer at home (If you don't please make pastoral staff aware or email [langley.homelearning@taw.org.uk](mailto:langley.homelearning@taw.org.uk))

**Download Microsoft Teams** on both your phone and computer. (If you don't know how to do this please ask a member of staff or do this in your next computing lesson)













**Spend at least 2 hours a week using teams EVERY WEEK.** (Engagement in teams can be tracked and monitored). You need to be accessing each of your class teams and recapping on the previous learning or completing additional tasks set by your class teacher.













If you have any issues with teams (e.g. login problems or missing classes etc then please email [langley.homelearning@taw.org.uk](mailto:langley.homelearning@taw.org.uk))

Teams is a tool to support ongoing learning and should **only be used for educational purposes.**



How to complete homework your teacher has set

|                | <b>LOOK, COVER, WRITE, CHECK</b>   | <b>DEFINITIONS TO KEY WORDS</b>   | <b>FLASHCARDS</b>   | <b>DUAL CODING</b>   |
|----------------|--|---|---|--|
| <b>STAGE 1</b> | <p>Look at &amp; study an area of your knowledge organiser</p>                | <p>Write down the key words &amp; definitions</p>                                        | <p>Write key words, dates/formulae, equations/quotes on one side &amp; answers on the other</p>  | <p>Draw pictures/diagrams/ cartoon strips</p>                                 |
| <b>STAGE 2</b> | <p>Cover up your knowledge organiser and write everything you remember</p>    | <p>Cover up the definitions. How many can you remember? Repeat.</p>                      | <p>Include pictures or diagrams if it helps. Read through them.</p>                              | <p>Label your pictures/diagrams/ cartoon strips</p>                           |
| <b>STAGE 3</b> | <p>Check. Correct mistakes in green and add anything you missed. Repeat</p>  | <p>Check. Correct mistakes in green pen. Which ones do you find hard to remember?</p>  | <p>Test yourself and get someone to test you.</p>   | <p>Explain out loud to yourself or family/friend what your images show</p>  |

|                | <b>SELF QUIZZING</b>  | <b>MINDMAPS</b>  | <b>PAIRED RETRIEVAL</b>  | <b>SPEAK, COVER, WRITE, CHECK</b>  |
|----------------|---|--|--|--|
| <b>STAGE 1</b> | <p>Use your knowledge organiser to create quiz questions.</p>    | <p>Create a mindmap of everything you can remember from your knowledge organiser</p>      | <p>Give a family member/friend the knowledge organiser to hold</p>  | <p>Read out loud the information from the knowledge organiser several times.</p>  |
| <b>STAGE 2</b> | <p>Write down the answers to your quiz</p>                       | <p>Check your knowledge organiser &amp; use a green pen to make any corrections.</p>      | <p>Get them to test you using the knowledge organiser</p>           | <p>Cover up your knowledge organiser and write everything you remember</p>        |
| <b>STAGE 3</b> | <p>Keep self-quizzing until you get all the answers correct</p>  | <p>Add additional information to your mindmap or make connections to other knowledge</p>  | <p>Write down your answers to their questions</p>                   | <p>Check. Correct mistakes in green and add anything you missed. Repeat.</p>      |



# Retrieval Placemat

Look at your knowledge organiser. Now cover it up and write down  
Key vocabulary & definitions from memory:

First time: Look.  
Cover. State 3 facts

Second time: Look.  
Cover. State 3 facts

Third time: Look.  
Cover. State 3 facts

Check & green pen your answers

Look at the knowledge organiser again. Now cover it up and  
without looking, explain a concept or idea in your own words

Re-read your answer above. Look at the knowledge organiser  
again. Now cover it up and improve on your previous explanation in  
green pen.

# Retrieval Relay

Look at your knowledge organiser. Now cover it up.

First time: Write down everything you can remember

Second time: Look. Cover. Write down everything you can remember

Third time: Look. Cover. Write down everything you can remember

Write down everything here that you didn't remember:

# Vocabulary focus 1

Look at your knowledge organiser. Select a key word and write it here:

Write a definition of the key word in your own words - not the same as the one on the knowledge organiser:

Write a sentence with the key word in it:

Create a question where the key word is the answer:

What other words are connected to this key word?

Draw a picture or diagram to help you remember this key word:

# Vocabulary focus 2

Definition:

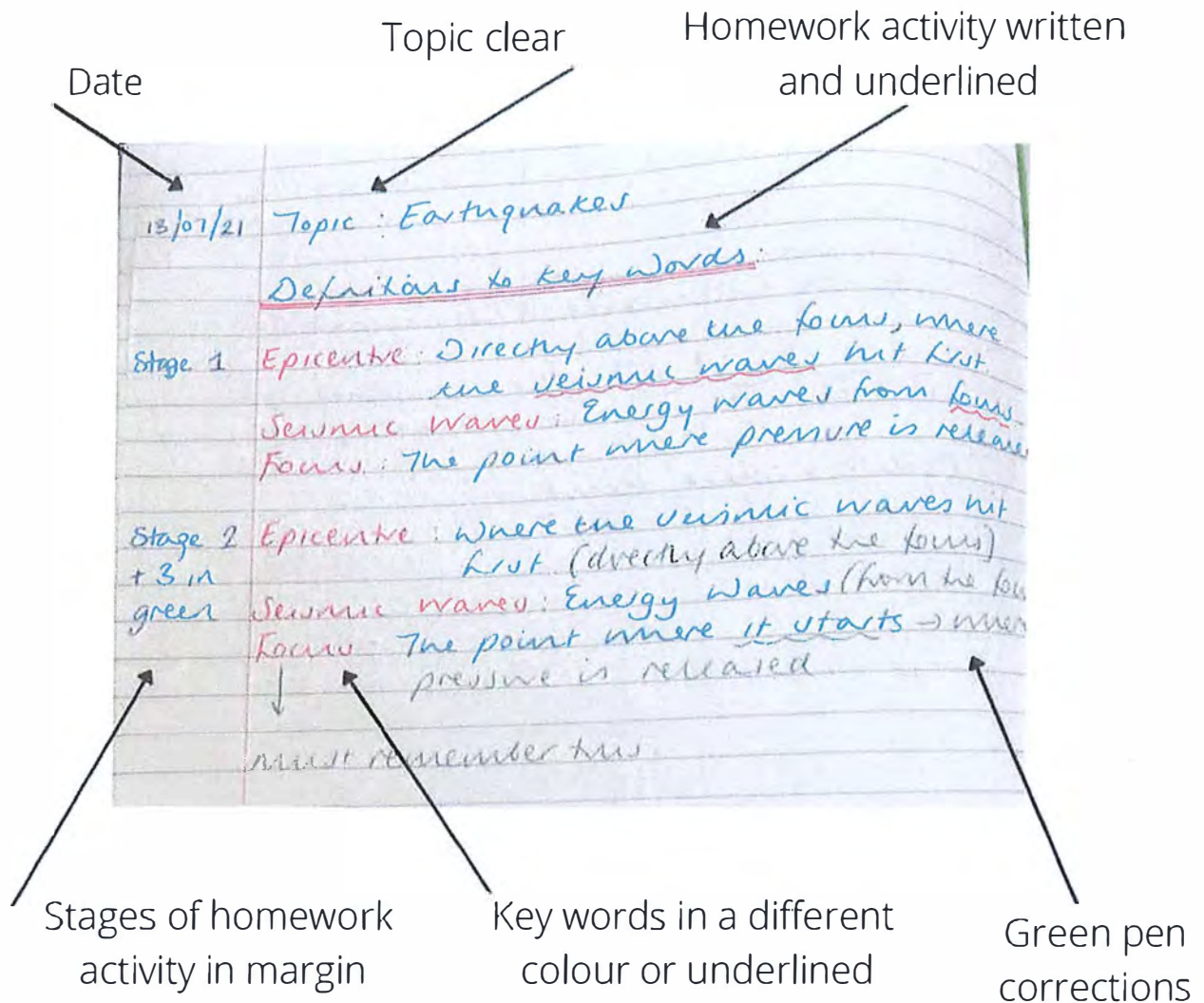
Characteristics:

Key word:

Examples:

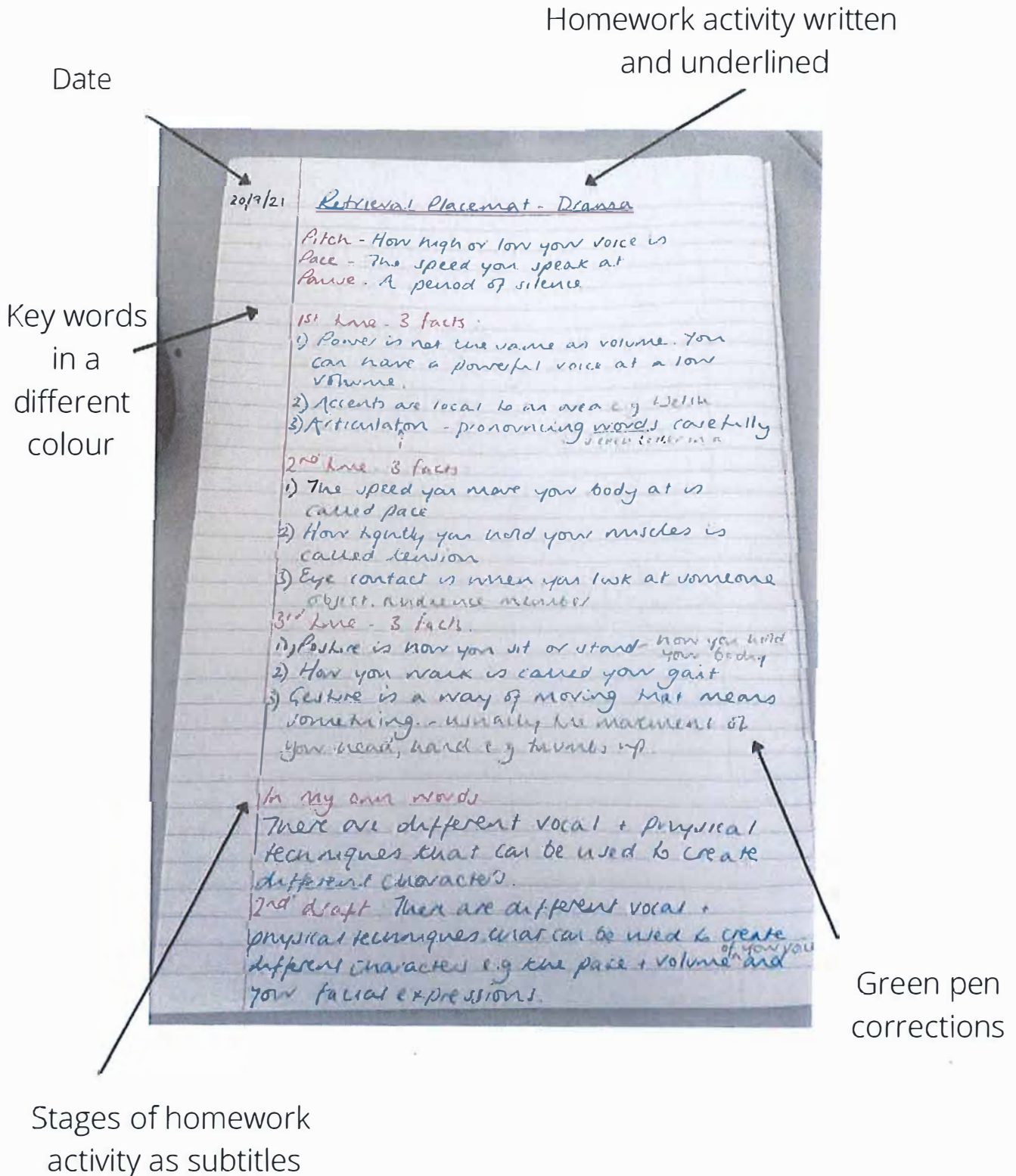
Non-examples:

# What should my knowledge organiser homework look like?





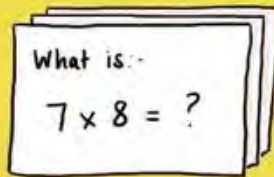
# What should my knowledge organiser homework look like?



# Art & Design

## FLASHCARDS

Create your own flashcards, question on one side answer on the other. Can you make links between the cards?



You need to repeat the Q&A process for flashcards you fail on more frequently & less frequently for those you answer correctly

Create a flash card with all the key facts you want to learn (this can be drawn in your book). On the next page try writing down as many facts or as much of the knowledge as you can. If you find you are getting certain facts wrong then these are where you need to focus and relearn.



# Year 11: Exam Preparation (External Set Task)

## Unit 6

**Threshold Concept (TC57)** - Understand that artwork can be influenced by many factors including the work of others.

**Threshold Concept (TC58)** - Understand that developing, refining, recording and presenting are fundamental to the design process and these can be undertaken in any order to achieve a final outcome.

**Threshold Concept (TC59)** - Understand that artwork can take many forms using a wide range of materials and processes.

Refer to Year 10 Unit 2 for artist research and photography.

Refer to Year 10 Unit 3 for drawing.

### Keywords

Develop,  
Refine,  
Record,  
Present.

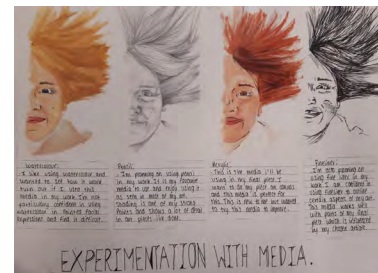
### Formal Elements of Art

**Colour** – what you see when light reflects off something.  
**Line** – a mark made which can be long, short, scribbled, straight etc.  
**Shape** – a 2D area which is enclosed by a line.  
**Form** – a shape which has 3 dimensions.  
**Tone** – how light or dark something is.  
**Texture** – how something looks or feels (visual or actual) rough etc.  
**Pattern** – a symbol or shape that can be random or repeated.

**AO1: Develop** ideas through investigation, demonstrating critical understanding of sources (Collect ideas and explore artists work to help inspire your own work).



**AO2: Refine** work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes. (Experiment with various media and techniques to help improve your skills and visual ideas).



**AO3: Record** ideas, observations and insights relevant to intentions as work progresses. (Show a clear journey throughout your chosen theme by producing observations, reflecting and evaluating).



**AO4: Present** a personal response and meaningful response that realises intentions and demonstrates understanding of visual language. (Complete a relevant and intentional final piece that shows a journey through your portfolio).

A study of the Ironbridge in a joiner style, influenced by the artist David Hockney.

Approximately  
12 weeks  
of preparation  
time leading  
to the  
10 hour exam



External Set Task  
(40% of the your final grade)

# Computer Science



## Algorithms

An **algorithm** is a sequence of ordered instructions that are followed step-by-step to solve a problem. This does *not* need to be on a computer.

**Decomposition** is the breaking down of a complex problem into smaller more manageable problems that are easier to solve.


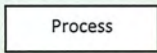

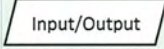
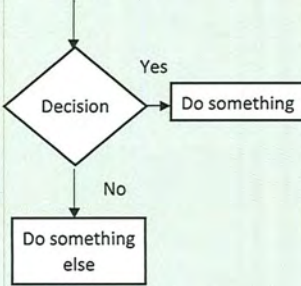
**Abstraction** allows us to remove unnecessary detail from a problem leaving us with only the relevant parts of a problem thereby making it easier to solve.

**Algorithm Efficiency** More than one algorithm can be used to solve the same problem. Normally we use the algorithm that solves the problem in the quickest time with the fewest operations or makes use of the least amount of memory.

**Dry run testing** is carried out using **trace tables**. The purpose of the trace tables is for the programmer to track the value of the variables and outputs at each step of the program and to track how they change throughout the running of the program.

## Flowchart Symbols

We can represent algorithms using flowcharts

|   |   |
|---|---|
| <p><b>Start and Stop</b></p>   | <p><b>Process – An operation that the algorithm performs</b></p>         |
| <p><b>Connector – Links all the other symbols together</b></p>         | <p><b>Input and Output of data that is read in and written out</b></p>  |
| <p><b>Decision is the same as a selection (if then ... else)</b></p>  | <p>IF answer is "yes" THEN<br/>do something<br/>ELSE IF answer is "no"<br/>do something else<br/>ENDIF</p>  |

## Pseudocode

We can represent algorithms using pseudocode

|                             | Example   | Python equivalent                      |
|-----------------------------|---|--|
| <b>Variable assignment</b>  | a ← 10  | a = 10                                 |
| <b>Constant assignment</b>  | constant PI ← 3.142                               | PI = 3.142                             |
| <b>Input</b>                | a ← USERINPUT                                     | a = input()                            |
| <b>Output</b>               | OUTPUT "Bye"                                      | print("Bye")                           |
| <b>Arithmetic Operators</b> |   |  |
| Add                         | +   | +                                      |
| Multiply                    | *   | *                                      |
| Divide                      | /   | /                                      |
| Subtract                    | -   | -                                      |
| Integer division            | a ← 7 DIV 2                                       | a = 7 // 2                             |
| Modulus (remainder)         | a ← 7 MOD 2                                       | a = 7 % 2                              |
| <b>Relational Operators</b> |   |  |
| Less than                   | <   | <                                      |
| Greater than                | >   | >                                      |
| Equal to                    | =   | ==                                     |
| Not equal to                | ≠ or <>   | !=                                     |
| Less than or equal to       | ≤   | <=                                     |
| Greater than or equal to    | ≥   | >=                                     |
| <b>Boolean Operators</b>    |   |  |
| AND                         | AND   | AND                                    |
| OR                          | OR  | OR                                     |
| NOT                         | NOT   | NOT                                    |
| <b>Selection</b>            |   |  |
| if ..                       | IF i > 2 THEN<br>j ← 10<br>ENDIF                  | if i > 2:<br>j=10                      |
| if .. else ...              | IF i > 2 THEN<br>j ← 10<br>ELSE<br>j ← 3<br>ENDIF | if i > 2:<br>j=10<br>else:<br>j=3      |
| if ... else if ... else     | IF i ==2 THEN<br>j ← 10<br>ELSE IF i==3<br>THEN   | if i ==2:<br>j=10<br>elif i==3:<br>j=3 |

|                                       |  |  |
|---------------------------------------|--|--|
|                                       | j ← 3<br>ELSE<br>j ← 1<br>ENDIF  | else:<br>j=1   |
| <b>Iteration</b>                      |  |  |
| While loops                           | a ← 1<br>WHILE a < 4<br>OUTPUT a<br>a ← a + 1<br>ENDWHILE                          | while a<4:<br>print(a)<br>a=a+1                                    |
| For loops                             | FOR a ← 0 TO 3<br>OUTPUT a<br>ENDFOR   | for a in<br>range(3):<br>print(a)                                  |
| Repeat loops                          | REPEAT<br>OUTPUT a<br>a ← a + 1<br>UNTIL a=4                                       |  |
| <b>Subroutines</b>                    |  |  |
| procedure                             | SUB hello()<br>OUTPUT "hello"<br>ENDSUB  | def hello():<br>print("hello")                                     |
| Function (with parameters and return) | SUB add(n)<br>a ← 0<br>FOR a ← 0 TO n<br>a ← a + n<br>ENDFOR<br>RETURN a<br>ENDSUB | def add(n):<br>a=0<br>for a in<br>range(n+1):<br>a=a+n<br>return a |
| <b>Built-in functions</b>             |  |  |
| Length of array                       | LEN(a)   | len(a)   |
| Random integer                        | RANDOM_INT(0,9)  | import random<br>random.randint(0,9)                               |



## Searching Algorithms

### Linear Search Algorithm

- The purpose of the linear search algorithm is to find a target item within a list.
- Compares each list item one-by-one against the target until the match has been found and returns the position of the item in the list.
- If all items have been checked and the search item is not in the list then the program will run through to the end of the list and return a suitable message indicating that the item is not in the list.
- The algorithm runs in linear time. If  $n$  is the length of the list, then at worst the algorithm will make  $n$  comparisons. At best it will make 1 comparison and on average it will make  $(n+1)/2$  comparisons.
- The performance of the algorithm will be improved if the target item is near the start of the list.

#### Example

Find the position of letter "Z" within the following list. Assume we do not have visibility of the list

| Index position | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------|---|---|---|---|---|---|---|---|
| Value          | V | A | S | Z | X | R | T | G |

We compare it with the value in index position 0. We find that the value is "V" so we need to move on to the next index position. At index position 1 and 2 we still have not found Z. However, we get to index position 3 and we compare the target with the value and we find that they match, so the algorithm returns the index position and stops.

#### Pseudocode

```

i ← 0
x ← len(listOfItems)
pos ← -1
found ← False
WHILE i < x AND NOT found
  IF listOfItems[i] == itemSearch THEN
    found ← True
    pos ← i + 1
  ENDIF
  i=i+1
ENDWHILE
OUTPUT pos
    
```

## Binary Search Algorithm

- The binary search algorithm works on a sorted list by identifying the middle value in the list and comparing it with the search item.
- If the search item is smaller the mid element becomes the new high value for the search area.
- If the search item is larger the mid element becomes the low value for the search area.
- The keeps repeating until the search item is found.
- When the search item is found the index position of the item is returned.
- At each iteration the search are halved in size consequently this is an efficient algorithm.

Example: Binary search in operation to find 81

|                                    | Low | Mid | High |
|------------------------------------|-----|-----|------|
| Iteration 1<br>L=1,h=11<br>mid=6   | 0   | 5   | 13   |
|                                    | 19  | 22  | 41   |
|                                    | 55  | 68  | 72   |
|                                    | 81  | 98  |      |
| Iteration 2<br>L=6,H=11<br>mid=8   | 0   | 5   | 13   |
|                                    | 19  | 22  | 41   |
|                                    | 55  | 68  | 72   |
|                                    | 81  | 98  |      |
| Iteration 3<br>L=8, H=11<br>mid=9  | 0   | 5   | 13   |
|                                    | 19  | 22  | 41   |
|                                    | 55  | 68  | 72   |
|                                    | 81  | 98  |      |
| Iteration 4<br>L=9, H=11<br>mid=10 | 0   | 5   | 13   |
|                                    | 19  | 22  | 41   |
|                                    | 55  | 68  | 72   |
|                                    | 81  | 98  |      |

#### Pseudocode

```

low ← 1
high ← LENGTH(arr)
mid ← (low + high) DIV 2
WHILE val ≠ arr[mid]
  IF arr[mid] < val THEN
    low ← mid
  ELIF arr[mid] > val THEN
    high ← mid
  ENDIF
  mid ← (low + high) DIV 2
ENDWHILE
OUTPUT mid
    
```

## Linear search versus binary search

|                      | Advantages   | Disadvantages  |
|----------------------|--|--|
| <b>Linear Search</b> | <ul style="list-style-type: none"> <li>Very simple algorithm and easy to implement</li> <li>No sorting required</li> <li>Good for short lists</li> </ul> | <ul style="list-style-type: none"> <li>slow because it searches through the whole list</li> <li>very inefficient for long lists</li> </ul> |
| <b>Binary Search</b> | <ul style="list-style-type: none"> <li>much quicker than linear search, because it halves the search zone each step</li> </ul>                           | <ul style="list-style-type: none"> <li>The list need to be ordered</li> </ul>  |



## Sorting Algorithms

### Bubble Sort

- The purpose of sorting algorithms is to order an unordered list. Item can be ordered alphabetically or by number.
- Bubble sort steps through a list and compares pairs of adjacent numbers. The numbers are swapped if they are in the wrong order. For an ascending list if the left number is bigger than the right number the items are swapped otherwise the numbers are not swapped.
- The algorithm repeatedly passes through the list until no more swaps are needed.

#### Example

Sort the following sequence in ascending order using bubble sort: 5,3,4,1,2.

|        |   |   |   |   |   |  |
|--------|---|---|---|---|---|--|
| Pass 1 | 5 | 3 | 4 | 1 | 2 |  |
|        | 3 | 5 | 4 | 1 | 2 | Compare 5 and 3 – swap                   |
|        | 3 | 4 | 5 | 1 | 2 | Compare 5 and 4 – swap                   |
|        | 3 | 4 | 1 | 5 | 2 | Compare 5 and 1 – swap                   |
| Pass 2 | 3 | 4 | 1 | 2 | 5 | Compare 5 and 2 – swap; end of pass 1    |
|        | 3 | 4 | 1 | 2 | 5 | Compare 3 and 4 – no swap                |
|        | 3 | 1 | 4 | 2 | 5 | Compare 4 and 1 – swap                   |
|        | 3 | 1 | 2 | 4 | 5 | Compare 4 and 2 – swap                   |
| Pass 3 | 3 | 1 | 2 | 4 | 5 | Compare 4 and 5 – no swap; end of pass 2 |
|        | 1 | 3 | 2 | 4 | 5 | Compare 3 and 1 – swap                   |
|        | 1 | 2 | 3 | 4 | 5 | Compare 3 and 2 – swap                   |
|        | 1 | 2 | 3 | 4 | 5 | Compare 3 and 4 – no swap                |
|        | 1 | 2 | 3 | 4 | 5 | Compare 4 and 5 – no swap; end of pass 3 |
|        | 1 | 2 | 3 | 4 | 5 |  |

### Bubble sort Pseudocode

```

A=[5,3,4,1,2]
sorted ← False
WHILE not sorted
  sorted ← True
  FOR I TO LEN(A)-1:
    IF A[i] > A[i+1]:
      temp ← A[i]
      A[i] ← A[i+1]
      A[i+1] ← temp
    sorted ← False
  ENDFOR
ENDWHILE
OUTPUT A
    
```

### Merge Sort

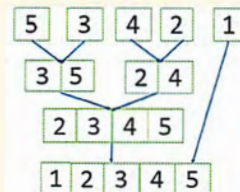
- Merge sort is a type of divide and conquer algorithm.
- There are two steps: divide and combine
- Merge sort works by dividing the unsorted list sublists. It keeps on doing this until there is 1 item in each list.
- Pairs of sublists are combined into an ordered list containing all items in the two sublists. The algorithm keeps going until there is only 1 ordered list remaining.
- Merge sort is a recursive function, that calls itself.

#### Step 1: Divide



Keep dividing until there is only 1 item in each list

#### Step2: Combine



- The first items in the two sublists are compared, and the smallest value is copied to the parent list.
- The copied item is then removed from the sublist.
- When there are no items left in one of the sublists the remaining items in the other sublist are then copied in order to the parent list.

### Merge sort Versus Bubble sort

|                    | Advantages   | Disadvantages   |
|--------------------|--|---|
| <b>Bubble sort</b> | Very simple and robust algorithm   | Can be slow particularly for long lists. As the number of items increases the time taken for the algorithm to run increases dramatically. |
| <b>Merge sort</b>  | Much faster than bubble sort especially when the number of elements is large | More complex to understand<br>Step 1: Divide<br>Step 2: Combine   |



## Programming - Python

**Comment** – Text within the code that is ignored by the computer. A Python comment is preceded by a #.

```
# This is an example of a comment
```

**Output** – Processed information that is sent out from a computer

| Python                                | Pseudocode           |
|---------------------------------------|----------------------|
| <code>print("Hello World!")</code>    | OUTPUT "Hello World" |
| <code>Hello World!</code>             |                      |
| <code>print("Hello", "World!")</code> |                      |
| <code>Hello World!</code>             |                      |
| <code>print("Hello"+"World!")</code>  |                      |
| <code>HelloWorld!</code>              |                      |
| <code>print("Hello\nWorld!")</code>   |                      |
| <code>Hello</code>                    |                      |
| <code>World!</code>                   |                      |

**Input** – Data sent to a computer to be processed

|                                   |                               |
|-----------------------------------|-------------------------------|
| <code>print("Enter name")</code>  | OUTPUT "Enter name"           |
| <code>name=input()</code>         | <code>name ← USERINPUT</code> |
| <code>print("Hello", name)</code> | OUTPUT "Hello", name          |
| <code>print("Enter age")</code>   | OUTPUT "Enter age"            |
| <code>age=int(input())</code>     | <code>age ← USERINPUT</code>  |

**Assignment** - The allocation of data values to variables, constants, arrays and other data structures so that the values can be stored.

- **Variable** – Value that can change during the running of a program. By convention we use lower case to identify variables (eg a=12)
- **Constant** – Value that remains unchanged for the duration of the program. By convention we use upper case letters to identify constants. (e.g. PI=3.141)

### Data Types

|                                     |   |   |
|-------------------------------------|---|---|
| <i>Integer</i>                      | <code>age = 12</code>                           | <code>age ← 12</code>                           |
| <i>Float (real) number</i>          | <code>height = 1.52</code>                      | <code>height ← 1.52</code>                      |
| <i>Character</i>                    | <code>a = 'a'</code>                            | <code>a ← 'a'</code>                            |
| <i>String – multiple characters</i> | <code>name = "Bart"</code>                      | <code>name ← "Bart"</code>                      |
| <i>Boolean (true/false)</i>         | <code>a = True</code><br><code>b = False</code> | <code>a ← True</code><br><code>b ← False</code> |

### Arithmetic Operators

|                            |                         |                      |
|----------------------------|-------------------------|----------------------|
| <i>Add</i>                 | <code>7 + 2 = 9</code>  | <code>7 + 2</code>   |
| <i>Subtract</i>            | <code>7 - 2 = 5</code>  | <code>7 - 2</code>   |
| <i>Multiply</i>            | <code>7 * 2 = 14</code> | <code>7 * 2</code>   |
| <i>Divide</i>              | <code>4 / 2 = 2</code>  | <code>4 / 2</code>   |
| <i>power</i>               | <code>2 ** 3 = 8</code> | <code>2 ** 3</code>  |
| <i>Integer division</i>    | <code>7 // 2 = 3</code> | <code>7 DIV 2</code> |
| <i>Modulus (remainder)</i> | <code>7 % 2 = 1</code>  | <code>7 MOD 2</code> |

### Relational Operators – Allows the Comparison of values

|                                 |                    |                            |                        |                          |
|---------------------------------|--------------------|----------------------------|------------------------|--------------------------|
| <i>Less than</i>                | <code>&lt;</code>  | <code>&lt;</code>          | <code>7 &lt; 2</code>  | <code>-&gt; False</code> |
| <i>Greater than</i>             | <code>&gt;</code>  | <code>&lt;</code>          | <code>7 &gt; 2</code>  | <code>-&gt; True</code>  |
| <i>Equal to</i>                 | <code>==</code>    | <code>==</code>            | <code>7 == 2</code>    | <code>-&gt; False</code> |
| <i>Not equal to</i>             | <code>!=</code>    | <code>≠ or &lt;&gt;</code> | <code>7 != 2</code>    | <code>-&gt; True</code>  |
| <i>Less than or equal to</i>    | <code>&lt;=</code> | <code>≤</code>             | <code>7 &lt;= 2</code> | <code>-&gt; False</code> |
| <i>Greater than or equal to</i> | <code>&gt;=</code> | <code>≥</code>             | <code>7 &gt;= 2</code> | <code>-&gt; True</code>  |

### Boolean Operators

|     |                  |                                    |                          |
|-----|------------------|------------------------------------|--------------------------|
| AND | <code>and</code> | <code>7 &lt; 2 and 1 &lt; 2</code> | <code>-&gt; False</code> |
| OR  | <code>or</code>  | <code>7 &lt; 2 or 1 &lt; 2</code>  | <code>-&gt; True</code>  |
| NOT | <code>not</code> | <code>not 7 &lt; 2</code>          | <code>-&gt; True</code>  |

**Sequencing** represents a set of steps. Each line of code will have some operation and these operations will be carried out in order line-by-line

|   |                           |
|---|---------------------------|
| <i>Using + operator for adding</i>        |                           |
| <code>a = 1</code>                        | <code>a ← 1</code>        |
| <code>b = 2</code>                        | <code>b ← 2</code>        |
| <code>c = a + b</code>                    | <code>c ← a + b</code>    |
| <code>print(c)</code>                     | <code>OUTPUT c</code>     |
| <i>Using + operator for concatenation</i> |                           |
| <code>a = 'Hello '</code>                 | <code>a ← 'Hello '</code> |
| <code>b = 'World'</code>                  | <code>b ← 'World'</code>  |
| <code>c = a + b</code>                    | <code>c ← a + b</code>    |
| <code>print(c)</code>                     | <code>OUTPUT c</code>     |

### Random number

|                          |  |                              |
|--------------------------|--|------------------------------|
| Random integer           | <code>import random</code><br><code>random.randint(0,9)</code> | <code>RANDOM_INT(0,9)</code> |
| Choice                   | <code>random.choice('a','b','c')</code>                        |                              |
| Random value from 0 to 1 | <code>random.random()</code>                                   |                              |

**Selection** represents a decision in the code according to some condition. The condition is met then the block of code is executed otherwise it is not. Often alternative blocks of code are executed according to some condition.

|                                |  |
|--------------------------------|--|
| <code>x=RANDOM_INT()</code>    | <pre> graph TD     Start([Let x = Random]) --&gt; Decision{Is x &lt; 10?}     Decision -- YES --&gt; YesBox[Let y = 1]     Decision -- NO --&gt; NoBox[Let y = 0]         </pre> |
| <code>IF x &lt; 10 THEN</code> |  |
| <code>y=1</code>               |  |
| <code>ELSE</code>              |  |
| <code>y=0</code>               |  |
| <code>ENDIF</code>             |  |

|                                      |   |  |
|--------------------------------------|---|--|
| <code>IF ...</code>                  | <code>IF i &gt; 2 THEN</code><br><code>j ← 10</code><br><code>ENDIF</code>  | <code>if i &gt; 2:</code><br><code>j=10</code>   |
| <code>IF ... ELSE ...</code>         | <code>IF i &gt; 2 THEN</code><br><code>j ← 10</code><br><code>ELSE</code><br><code>j ← 3</code><br><code>ENDIF</code>   | <code>if i &gt; 2:</code><br><code>j=10</code><br><code>else:</code><br><code>j=3</code>   |
| <code>IF ... ELSE IF ... ELSE</code> | <code>IF i ==2 THEN</code><br><code>j ← 10</code><br><code>ELSE IF i==3</code><br><code>j ← 3</code><br><code>ELSE</code><br><code>j ← 1</code><br><code>ENDIF</code> | <code>if i ==2:</code><br><code>j=10</code><br><code>elif i==3:</code><br><code>j=3</code><br><code>else:</code><br><code>j=1</code> |

**Iteration** Sometimes we wish the code to repeat a set of instructions

**WHILE** loops are used when the we do not know beforehand the number of iterations needed and this varies according to some condition.

|   |  |
|---|--|
| <code>x = 0</code><br><code>while (x &lt; 10):</code><br><code>x = x + 1</code> | <pre> graph TD     Start([Start]) --&gt; LetX[Let x = 0]     LetX --&gt; Decision{Is x &lt; 10?}     Decision -- YES --&gt; LetXPlus[Let x = x + 1]     LetXPlus --&gt; Decision     Decision -- NO --&gt; Stop([Stop])         </pre> |
|---|--|

|   |   |
|---|---|
| <code>while True:</code><br><code>print("Hello World")</code>                                 | <code>WHILE TRUE</code><br><code>OUTPUT "Hello World"</code><br><code>ENDWHILE</code>   |
| <code>a=0</code><br><code>while a&lt;4:</code><br><code>print(a)</code><br><code>a=a+3</code> | <code>a ← 0</code><br><code>WHILE a &lt; 4</code><br><code>OUTPUT a</code><br><code>a ← a + 3</code><br><code>ENDWHILE</code> |

**FOR** loops are used when we know before hand the number of iterations we wish to make.

|  |   |
|--|---|
| <code>for a in range(3):</code><br><code>print(a)</code> | <code>FOR a ← 0 TO 3</code><br><code>OUTPUT a</code><br><code>ENDFOR</code> |
|--|---|



## Nested structures - Use constructs (e.g. WHILE, FOR, IF) inside another.

|  |  |
|--|--|
| use a nested FOR loop to print out a grid                | <pre>for i in range (10):     for i in range (10):         print ("x ",end="")     print()</pre> |
| Use a nested while and if to print out only even numbers | <pre>i=0 while i&lt;51:     if (i%2==0):         print(i)     i=i+1</pre>                        |

## Lists

|                                |  |
|--------------------------------|--|
| Create a list                  | shapes=["square", "circle"]  |
| Access element by index pos    | shapes[1] -> circle  |
| Append item to list            | shapes.append("triangle")  |
| Remove item from list          | shapes.remove("circle")  |
| Remove item from list by index | shapes.pop(1)  |
| Insert item into list          | shapes.insert(2, "rectangle")  |
| Number of elements in a list   | len(shapes)  |
| Get index pos of item in list  | shapes.index("triangle")   |
| Concatenating lists            | <pre>shapesGroup1["square", "circle"] shapesGroup2=["triangle"] shapes=shapesGroup1+shapesGroup2</pre> |
| Loop through list              | <pre>for i in range(len(shapes)):     print(shapes[i])</pre>   |
| Reverse elements in a list     | shapes.reverse()   |
| Order elements in a list       | shapes.sort()  |

## 2D lists - A list of lists

|                                  |   |
|----------------------------------|---|
| Create a 2D list                 | d = [ [23, 14, 17], [12, 18, 37], [16, 67, 83]]                           |
| Another way to create a 2D list  | <pre>a = [23, 14, 17] b = [12, 18, 37] c = [16, 67, 83] d = [a,b,c]</pre> |
| Access element by index position | d[1][2] -> 37   |

## Strings

|                             |                 |                 |
|-----------------------------|-----------------|-----------------|
| Get length of a string      | len("Hello")    | LEN("Hello")    |
| Character to character code | ord("a") -> 97  | ORD("a")        |
| Character code to character | chr(101) -> 'e' | CHR(101)        |
| String to integer           | a=int("12")     | a=INT("12")     |
| String to float             | a=float("12.3") | a=FLOAT("12.3") |
| integer to string           | a=str(12)       | a=STR(12)       |
| real to string              | a=str(12.3)     | a=STR(12.3)     |

|   |  |
|---|--|
| Concatenation -merge multiple strings together  | <pre>a="hello " b="world" c=a+b print(c) -&gt; hello world</pre> |
| Return the position of a character If there is more than 1 of the same character the position of the first character is returned. | <pre>student = "Hermione" student.index('i')</pre>               |
| Find the character at a specified position  | <pre>student = "Hermione" print(student[2]) -&gt; r</pre>        |

## sub strings - select parts of a string

|                                   |                            |
|-----------------------------------|----------------------------|
| Example                           | student="Harry Potter"     |
| Output the first two characters   | print(student[0:2]) Ha     |
| Output the first three characters | print(student[:3]) Har     |
| Output characters 2-4             | print(student[2:5]) Rry    |
| Output the last 3 characters      | print(student[-3:]) Ter    |
| Output a middle set of characters | print(student[4:-3]) y Pot |

\*A negative value is taken from the end of the string.

**Subroutines** are a way of managing and organising programs in a structured way. This allows us to break up programs into smaller chunks.

- Can make the code more modular and more easy to read as each function performs a specific task.
- Functions can be reused within the code without having to write the code multiple times.
- **Procedures** are subroutines that do not return values
- **Functions** are subroutines that have both input and output

|  |   |  |
|--|---|--|
| <b>Procedure:</b><br>No input parameters or return           | <pre>SUB greeting()     OUTPUT "hello" ENDSUB</pre>   | <pre>def greeting():     print("hello")  call: greeting()</pre>                    |
| <b>Procedure: One input parameter, no return</b>             | <pre>SUB greeting(name)     OUTPUT     "Hello", name ENDSUB</pre>                                   | <pre>def greeting(name):     print("Hello", name)  greeting("grey")</pre>          |
| <b>Function:</b><br>1 input parameter, and 1 return value    | <pre>SUB add(n)     a = 0     FOR a = 0 TO n         a = a + n     ENDFOR     RETURN a ENDSUB</pre> | <pre>def add(n):     a=0     for a in range(n+1):         a=a+n     return a</pre> |
| <b>Function:</b><br>Two input parameters, and 1 return value | <pre>SUB (num1,num2)     sum=num1+num2     return sum</pre>   | <pre>def add(num1,num2):     sum=num1+num2     return sum  greeting(1,2)</pre>     |

The **scope** of a variable determines which parts of a program can access and use that variable.

A **global variable** is a variable that can be used anywhere in a program. The issue with global variables is that one part of the code may inadvertently modify the value because global variables are hard to track.

A **local variable** is a variable that can only be accessed within a certain block of code typically within a function. Local variables are not recognized outside a function unless they are returned. There is no way of modifying or changing the behavior of a local variable outside its scope.

Global variables need to be defined throughout the running of the whole program. This is an inefficient use of memory resources. Local variables are defined only when they are needed and so have less demand on memory. Local variables only exist within the subroutine.

## Reading and writing files

**Open file** Whatever we are doing to a file whether we are reading, writing or adding to or modifying a file we first need to open it using:

```
open(filename, access_mode)
```

There are a range of access mode depending on what we want to do to the file, the principal ones are given below:

| Access Mode | Description   |
|-------------|---|
| r           | Opens a file for reading only   |
| w           | Opens a file for writing only. Create a new file if one does not exist. Overwrites file if it already exists. |
| a           | Append to the end of a file. Create a new file if one does not exist.   |

## Reading text files

|   |  |
|---|--|
| read - Reads in the whole file into a single string | <pre>f=open("file.txt", "r") print(f.read()) f.close()</pre>   |
| readline - Reads in each line one at a time         | <pre>f=open("file.txt", "r") print(f.readline()) print(f.readline()) print(f.readline()) f.close()</pre> |
| readlines - Reads in the whole file into a list     | <pre>f=open("file.txt", "r") print(f.readlines()) f.close()</pre>  |

## Writing text files

|                                 |   |
|---------------------------------|---|
| Write in single lines at a time | <pre>file=open("days.txt", 'w') file.write("Monday\n") file.write("Tuesday\n") file.write("Wednesday\n") file.close()</pre> |
| Write in a list                 | <pre>say=["How\n", "are\n", "you\n"] file=open("say.txt", 'w') file.writelines(say) file.close()</pre>                      |

## Data Validation Routines

|  |   |
|--|---|
| <i>Check if an entered string has a minimum length</i> | <pre>OUTPUT "Enter String" s ← USERINPUT IF LEN(S) &gt; 5 THEN   OUTPUT "STRING OK" ELSE   OUTPUT "TOO SHORT" ENDIF</pre> |
| <i>Check is a string is empty</i>                      | <pre>OUTPUT "Enter String" s ← USERINPUT IF LEN(S) == 0 THEN   OUTPUT "EMPTY STRING" ENDIF</pre>                          |
| <i>Check if data entered lies within a given range</i> | <pre>OUTPUT "Enter number" s num ← USERINPUT IF num &gt; 1 AND num &lt; 10   OUTPUT "Within range" ENDIF</pre>            |

## Authentication Routine

```
OUTPUT "Enter Username"
username ← USERINPUT
OUTPUT "Enter Password"
password ← USERINPUT

WHILE username != "bart" OR password != "abc"

  OUTPUT "Login failed"
  OUTPUT "Enter Username"
  username ← USERINPUT
  OUTPUT "Enter Password"
  password ← USERINPUT

ENDWHILE

OUTPUT "Login Successful"
```

## Debugging

**Syntax errors** – Errors in the code that mean the program will not even run at all. Normally this is things like missing brackets, spelling mistakes and other typos.

**Runtime errors** – Errors during the running of the program. This might be because the program is writing to a memory location that does not exist for instance. eg. An array index value that does not exist.

**Logical errors** - The program runs to termination, but the output is not what is expected. Often these are arithmetic errors.

## Test data

Code needs to be tested with a range of different input data to ensure that it works as expected under all situations. Data entered need to be checked to ensure that the input values are:

- within a certain range
- in correct format
- the correct length
- The correct data type (eg float, integer, string)

The program is tested using normal, erroneous or boundary data.

**Normal data** - Data that we would normally expect to be entered. For example for the age of secondary school pupils we would expect integer values ranging from 11 to 19.

**Erroneous data** - Data that are input that are clearly wrong. For instance, if some entered 40 for the age of a school pupil. The program should identify this as invalid data but at the same time should be able to handle this sensibly which returns a sensible message and the program does not crash.

**Boundary data** - Data that are on the edge of what we might expect. For instance if someone entered their age as 10, 11, 19 or 20.



# GCSE Design and Technology

# Year 11 GCSE DT Knowledge organiser Spring Term

## Non Exam Assessment (NEA)

This term you will make your product independently using manufacturing skills relating to your chosen material area (Wood, metal or Plastic.) Once built your prototype project will be evaluated against the specification, tested and surveyed to gain the opinions of others.

## Section E: Realising design ideas (20 marks)

### Section D: Developing design ideas (20 marks)

To get the maximum marks you need to produce:

- Very detailed development work using a wide range of 2D/3D techniques (including CAD where appropriate) in order to develop a prototype.
- Excellent modelling, using a wide variety of methods to test their design ideas, fully meeting all requirements.
- Fully appropriate materials/components selected with extensive research into their working properties and availability.
- Fully detailed manufacturing specification is produced with comprehensive justification to inform manufacture.

**Model 1**  
From the peer evaluation they commented on how the cable would be managed. To fix this I would have it coming out the cone's tip then going through the bottom of a wooden base at the back. This means the cable will be out of the way and not getting tangled up.

I would put a thin metal sheet at the back of the light so that the projected light is directed just towards one area of the room. The sheet would need to be more than halfway round the light to do this. This was an issue brought up by the client if they were going to buy lights for a Boarding House room.

The light would need a way of being able to replace the light bulb inside when it needs changing. The easiest way would be to have a hinge so the light can come off and on, however it will need to be attached to the light so it isn't lost or damaged. I would add a hinge so the cap can open for the user to change the bulb. The hinge might look a bit out of place on the inside of the light so as to not affect the aesthetics of the light.

**Model 2**  
I would add one or more book slots in the back side of the light as an additional feature. This would give the back additional use aside from just directed light only at the user. There could be several slots for more books but they might need more support. The client brought up having a book stand when asked about other functions.

This development is an idea from the peer evaluation group and they suggested making the dome higher and having a storage box underneath. This would provide more storage space which is useful as the light takes up quite some space on a table. The storage space would be useful to slide in a book or a phone to hold or protect.

**SUMMARY:** Following the model development of two of my models, I have decided to choose Model 1 to develop as my final product. I came to this decision after looking at several ways both models could be developed and the first model will be most appropriate as a light for my client. This model also refers closely to my design specification and can be developed even further to make it completely suitable.

### Your tasks:

- Use photographs and drawings of your models to complete the design development section of the NEA.
- Describe every picture to get your ideas across
- Write about things that are good with your design. Highlight things that need to be improved. Suggest ways you will improve them
- Include additional sketches to show how you will modify your design as you move on to the next stage of making
- Annotate your drawings and photographs to show what materials will be used and details of how you will make it (naming tools, joining methods, describe the process of how it will be made)
- Produce a final design drawing (or model) and annotate it fully using ACCESSFM (this will be your "Manufacturing specification")
- Add a summary and client feedback on every slide!



[Follow these links to an ACCESSFM worksheet](#)

### Section E: Realising design ideas (20 marks)

To get full marks in this section you need to make your final model to a high standard and show:

- The correct tools, materials and equipment (including CAM where appropriate) have been consistently used or operated safely with an exceptionally high level of skill.
- A high level of quality control is evident to ensure the prototype is accurate by consistently applying very close tolerances.
- Prototype shows an exceptionally high level of making/finishing skills that are fully consistent and appropriate to the desired outcome.
- An exceptionally high quality prototype that has the potential to be commercially viable has been produced and fully meets the needs of the client/user.

### Your tasks:

- Use photographs and drawings of your final model to show the quality of the work
- Annotate your photographs to show what materials are used and detail how you made it (naming tools, joining methods, describe the process of how it was made)
- Include a summary and feedback from your client.

**TOP**  
1. For all the 3D printed components I exported my CAD drawings as .stl files then opened them on makerware to be printed. I have a total of ten 3D printed components.  
2. I spray painted two of 3D printed components; I chose two different blues that suited my colour scheme.  
3. Three components needed to be laser cut so I exported my CAD drawings as .dxf files and created the components to be transferred to the laser cutter.  
4. The plywood components were sanded together on the belt sander then had to be oiled with Danish Oil and the polypropylene had to be folded on the indents.

**Manufacturing Diary**

**BASE**  
1. I cut two 40x20x200mm meranti blocks using a tenon saw then I drilled the holes for the dowels and acrylic supports. After this, I sanded both pieces with sandpaper till it was smooth enough for use.  
2. The dowels were cut to length of 235mm with a coping saw then glued with PVA glue into the holes in the wood blocks.  
3. I sanded the edges of the top of the base so the dowels would fit flush into the wood. Then I was oiled with Danish Oil and when it was dry, I added four feet to the meranti blocks and screwed the four support brackets.  
4. I cut four acrylic rods with a coping saw and sanded the edges with the disc sander so they were smooth.

**ASSEMBLY**  
1. The polypropylene diffuser is attached to the shade with four nuts and bolts. These are then attached to the plywood components with four nuts and bolts.  
2. The four corner clips slide onto each corner and fit above the corner holes. The light bracket just sits inside the shade.  
3. The base is already assembled and just needed to fit the four acrylic rods into the support brackets and fix them to the top support clips.

**SUMMARY:** My manufacturing diary records the processes to make my light including the different programmes, tools and equipment needed. It shows how it was made and also how it was finally assembled to complete the light.



<https://youtu.be/4uWfo4NK6Gs>



<https://youtu.be/AfKbYcS4RXo>

Follow these links to see videos of how to make woodwork joints

Enterprise



### What is Market Segmentation?

Market Segmentation is the process of grouping potential customers together based on different factors. It is basically the method used by businesses to identify their target customer/market. Markets can be segmented in different ways and some businesses choose to use more than one characteristic to specifically segment their market.

### How can markets be segmented?

- **Age** – This is basically how old the customer is. Businesses tend to segment their market into age brackets. Toys, for example, are aimed at younger audiences, potentially between ages 3 and 13.
- **Gender** – This is whether the target customers are typically going to be male or female. Make-up, for example, is targeted at females – this doesn't mean that males cannot buy it, it is just who the business is targeting!
- **Occupation** – Occupation means the job or career that the people within the target market may have. This could be a specific job, for example Gym equipment being targeted at Personal Trainers, or a more general group of jobs, Office Workers for example.
- **Income** – Some businesses segment their market based on how much money their potential customers make. Luxury branded items, for example, will be targeted at customers with more disposable (spare) income.
- **Geographic** – This is when businesses segment their market by their location. A local newspaper, for example, will segment their market to include only those in the area in which the newspaper reports.
- **Lifestyle** – Businesses could segment their market based on what their customers' lifestyle is like; this is basically their hobbies, their routines and their habits. Some people enjoy going on holiday abroad each year, this is their lifestyle.

### What are the benefits of Market Segmentation?

By segmenting their market, businesses are:

- Able to focus on the wants/needs of specific customers and more likely to meet these wants/needs.
- More likely to make sales because they've focused on specific groups of people (if they segment successfully).
- More able to focus their advertising and other marketing at the right groups of customers – if their market is segmented to include female customers, then the business could choose to advertise in magazines aimed at females, for example.
- More able to produce a specific customer profile, which is a portrait of the business's main target customer.

Cambridge National in Enterprise & Marketing  
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### How do customers vary (how are they different)?

Customers are different/vary because of:

- The amount of money they are **able** to spend
- The amount of money they are **willing** to spend (some customers have more money, but may not be willing to spend this money)
- The **quantity** of products/services they require
- The **quality** of products/services they require
- The **location** in which they want/can purchase items
- The **time** in which they want to/can purchase items.

### What Customer Feedback Techniques are available for business start-ups?

Customer Feedback Techniques are the methods a business uses to allow customers to tell them what they think about their products or services and can include:

- Social Media / Online Communities
- Websites with reviews
- Online surveys
- Customer comment cards
- Comments made to staff members
- Telephone/email surveys
- Email contact forms

### Why are Customer Feedback Techniques useful for new business start-ups?

If things aren't going well for a business, customer feedback will give them the reasons why. Taking action could improve sales and help businesses meet customer wants/needs better. Customer feedback also makes people/customers feel they are being listened to.

### What is Market Research?

Market Research is the process of finding out what customers want and what they need. Businesses typically carry out Market Research before developing a new product as well as during the testing of the product to get the opinions of their potential customers.

### What is the purpose of Market Research?

The purpose of Market Research is to find out what customers want and need – this helps businesses develop products that are more likely to be successful. Research also helps understand customers' tastes and opinions and can change the design or specification of products. Finally, Market Research can also be used to gauge what products are already on the market and what competitors are doing.

### What is Primary (field) Market Research?

Primary Research, or Field Research, is when businesses gather their own data and information. This can be done through surveys, questionnaires, focus groups, observations, consumer trials and 'taste tests'. The data gathered is unique to the business and does not already exist.

### What are the benefits of Primary (field) Research?

Carrying out Primary Research means that the results are exactly what the business wants to find out, because this research has been tailor made for their own specific needs. Researchers can include everything the business wants to find out from their potential customers.

### What are the drawbacks of Primary (field) Research?

Primary Research is usually more expensive to carry out than Secondary Research because the business is creating and analysing everything from scratch. This also means that Primary Research is more time consuming to carry out.

### What is Secondary (desk) Market Research?

Secondary Research, sometimes called Desk Research, is when the business uses data or information that already exists. This is not tailor made for the business. Methods of Secondary Research include Internet research, books, newspapers and data already collected by competitors, the Government or other sources of statistics.

### What are the benefits of Secondary (desk) Market Research?

Secondary Research is quicker to complete, because the data has already been collected and, in some cases, analysed. Secondary Research is also cheaper to carry out – looking in newspapers for competitor research is clearly cheaper than preparing, carrying out and analysing a questionnaire, for example.

### What are the drawbacks of Secondary (desk) Market Research?

The data that is used when completing Secondary Research is not unique and not specific to the business's needs, unlike when Primary Research is carried out. Secondary Research doesn't allow businesses to ask further questions to those that took part in the research either.



## Forms of Ownership for Business Start-ups...

### Sole Trader

- ☛ **Number of Owners:** 1 (one owner, but can have employees working there)
- ☛ **Legal Requirements to Start:** Register as self-employed with HMRC; (HMRC is the Government department in charge of collecting tax).
- ☛ **Liability:** Unlimited Liability – the debts are the responsibility of the owner (disadvantage).
- ☛ **Decision Making:** The owner is responsible for all the business's decisions (advantage).
- ☛ **Distribution of Profits:** The owner chooses what to do with any profits made (advantage).

### Partnership

- ☛ **Number of Owners:** 2 minimum
- ☛ **Legal Requirements to Start:** Register with HMRC. A Deed of Partnership is also usually drawn up to state how the business will operate.
- ☛ **Liability:** All partners will have Unlimited Liability. They will all be responsible for any debt the business may have (disadvantage).
- ☛ **Decision Making:** Decision making is shared between partners; this is usually included in the Deed of Partnership. This can be a disadvantage if owners fall out over decisions.
- ☛ **Distribution of Profits:** % share will be agreed within the Deed of Partnership (shared profit is a disadvantage of this type of ownership).

### Limited Liability Partnership (LLP)

- ☛ **Number of Owners:** 2 minimum
- ☛ **Legal Requirements to Start:** Register with HMRC and complete an LLP Agreement that outlines how the LLP will be run.
- ☛ **Liability:** Partners have Limited Liability. They only stand to lose what they have invested if the business gets into financial difficulty (an advantage of this type of ownership).
- ☛ **Decision Making:** This will be decided when the business is formed and written in the LLP Agreement.
- ☛ **Distribution of Profits:** Again, this will be in the LLP Agreement.

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### What is liability (in terms of Business Ownership)?

Liability means responsibility and it refers to whether owners will be responsible for the debt of a business, should it get into financial difficulty.

### Limited Liability...

If an owner has Limited Liability, they will only lose what they have invested in a business. Shareholders in companies have limited liability – if they invested £500, and the business failed and owed money, they would only lose their £500 – they wouldn't have to cover any more of the debt, even if the business owed millions.

### Unlimited Liability...

This is a risk for a business owner as, if they have Unlimited Liability, they are responsible for all the debts of a business. This means that if their business fails and owes people money, they will have to cover this debt, even if it means losing their personal possessions.

### What is a franchise?

A franchise is when someone buys the rights to an existing business's name to run as their own business. Basically, they're setting up their own business but using the name and ideas of an existing business.

### Benefits of owning a franchise...

The franchisee (who buys the franchise) will benefit from guidance and help from the franchisor (who sells the rights to their business name). The business idea is already a success, so they could be more likely to succeed than if setting up on their own. They will also benefit from any advertising the franchisor does.

### Drawbacks of owning a franchise...

Franchisees have to pay the franchisor for the rights to their name – this is more expensive than setting up a new business. Franchisees must also pay royalties to the franchisor on a regular basis. It is also unlikely the franchisee can make changes to the business format.

### What is Capital?

Capital is the name given to the money that is used to start-up a new business or to launch a new product.

### Sources of Capital...

- ☛ **Own Savings** – This is the owners' own money. This method doesn't involve interest but are limited by how much savings they have.
- ☛ **Friends & Family** – Borrowing from friends or family may not include interest or paperwork but can lead to friction if not paid back.
- ☛ **Loans** – Loans from banks or other organisations can help raise capital quickly but will have interest added to the amount paid back.
- ☛ **Crowdfunding** – This is where lots of a people (sponsors) pledge small amounts of money, usually online. This can be slow to raise the amount of capital needed but doesn't involve interest payments.
- ☛ **Small Business Grant** – Sometimes Governments give grants to encourage businesses to set up. Grants often involve no interest payments but strict criteria needs to be met and funds are limited.
- ☛ **Business Angels** – Investors on the TV show 'Dragons Den' would be considered Business Angels. They invest in a business idea in exchange for a share of profits and/or part ownership of the business.

### What is a Business Plan?

A Business Plan is a document that is drawn up before a business is launched to describe the new business idea.

### What should a Business Plan contain?

- Business Aims and Objectives (what it wants to achieve/when)
- Business Strategies
- Business Operations (how will the business be run on a daily basis. Who owns the business? Who will make decisions?)
- Sales Plan
- Marketing Plan (marketing, promotions and advertising?)
- Financial Forecasts (cash flow forecasts – how much money is predicted to come in and go out each month? How much profit does the business predict it will make in the first year/over a longer period?)

### Why is it important for new start-ups to have a Business Plan?

New businesses can be difficult to set up and, unfortunately, most will fail. Having a Business Plan *should* reduce the risk of failure, especially if the plan is detailed and realistic, as all eventualities will be planned for. A Business Plan is also used to share the business's ideas with third parties – it is unlikely, for example, that a bank will lend money to a new start-up without a detailed plan that includes financial forecasts.



### What are Costs?

Costs are the things businesses have to pay for in order to produce a product or provide a service.

### What are Fixed Costs?

Fixed costs are things a business pays for that do not change depending on the amount of a product a business makes – so these costs stay the same no matter how many products a business produces.

### Examples of Fixed Costs for a Cake Shop...

Rent for the shop would be a fixed cost because the cost will stay the same no matter how many cupcakes are produced and sold. The shop's insurance, staff wages and phone bill will also be examples of fixed costs.

### What are Variable Costs?

Variable costs are the costs a business pays that change depending on how many products a business produces – these costs increase when more products are made.

### Examples of Variable Costs for a Cake Shop...

The ingredients used in the cakes would be an example of a Variable Cost because this cost will increase if more cakes are made. The packaging for the cakes will also be a variable cost, if more cakes are made and sold then more packaging will be required.

### How are Total Costs calculated?

Total cost is just the fixed costs plus the variable costs. You will, however, need to account for the number of products made when including variable costs.

For example, if the shop's fixed costs are £1000 and their variable costs are £0.20 per cupcake, their total costs when they produce 500 cupcakes will be:

$$\begin{aligned} &\text{Fixed Costs} + (\text{Variable Cost Per Unit} \times \text{Units Produced}) \\ &\quad \quad \quad \text{£1000} + (\text{£0.20} \times 500) \\ &\quad \quad \quad \text{£1000} + \text{£100} = \text{£1100 Total Costs} \end{aligned}$$

### How to calculate Total Costs for 400 cupcakes when Fixed Costs are £2000 and Variable Costs are £0.45 per unit...

$$\begin{aligned} &\text{£2000} + (\text{£0.45} \times 400) \\ &\text{£2000} + \text{£180} = \text{£2180 Total Costs} \end{aligned}$$

## Cambridge National in Enterprise & Marketing

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### What is Revenue?

Revenue is the money generated from selling products or services. It is not profit, but the money coming into a business from sales.

### How is Total Revenue calculated?

Total Revenue is calculated by:

$$\text{Selling Price} \times \text{Number of Sales}$$

### What is Profit?

Profit is the money left over from revenue once costs have been paid – it's the money a business makes once all costs have been covered.

### How is Total Profit calculated?

Total Profit is calculated by:

$$\text{Total Revenue} - \text{Total Costs}$$

### What is Profit per Unit? How is it calculated?

Profit per Unit is the amount of profit a business makes on just one item sold.

Profit per Unit is calculated by:

$$\text{Selling Price per Unit} - \text{Total Costs per Unit}$$

### Example calculations...

Selling Price = £1.20 per cake  
Fixed Costs = £350  
Variable Costs = £0.20 per cake

- Total Costs for 500 cakes =  $350 + (0.20 \times 500) = \text{£450}$
- Revenue for 500 cakes =  $500 \times 1.20 = \text{£600}$
- Profit per Unit =  $\text{£1.20} - (\text{£450} \div 500) = \text{£0.30}$

### What is Break-even?

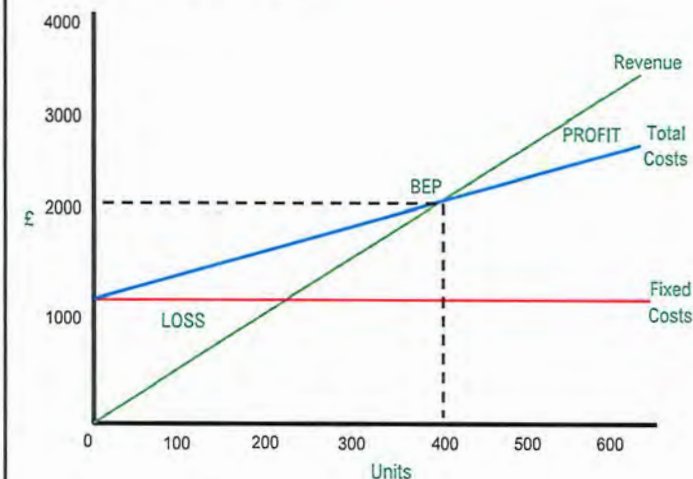
Break-even is the point at which a business does not make a profit or a loss – its revenue from sales and its total costs are equal. The number of products that must be produced/sold to reach this point is called the Break-even Point.

### How is Break-even calculated?

The formula for Break-even is:

$$\frac{\text{Fixed Costs}}{\text{Selling Price per Unit} - \text{Variable Cost per Unit}}$$

### A labelled Break-even graph...



This business's Break-even Point is 400 Units.

### Why is Break-even information useful for a business?

Businesses who calculate their Break-even point know what output they need in order to be profitable; so, they know how many products to produce or can generate a sales target in order for them to make a profit.

### What does increasing selling prices do to the Break-even Point?

Increasing selling prices will lower a business's Break-even Point, they will need to produce/sell less in order to Break-even.

### What impact does increased costs have on the Break-even Point?

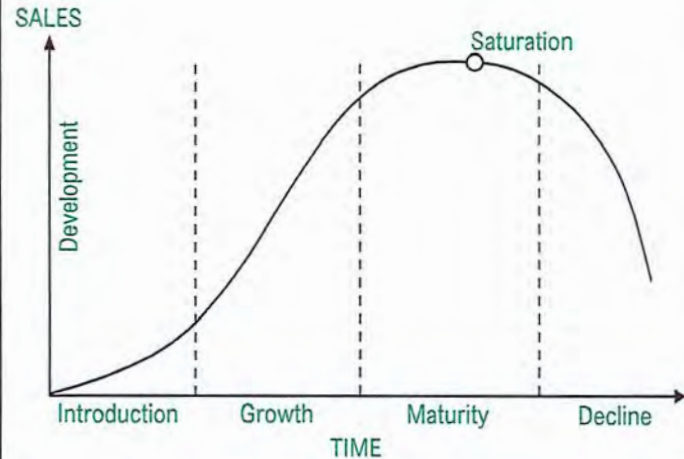
An increase in either Fixed or Variable Costs (or both) will result in a higher Break-even Point for a business; they will need to produce/sell more in order to Break-even.



### What is the Product Lifecycle?

All products have a life span – this is short for some products or, in the cases of popular products, can be quite long. The Product Lifecycle is a set of stages that a product will go through in its lifetime. It is important to note that not all products go through all stages of the lifecycle.

### The Product Lifecycle...



### The stages of the Product Lifecycle...

⊛ **Development** – This is the stage before the product is released. At this stage, the business will be designing and testing the product as well as completing their market research.

⊛ **Introduction** – At this stage, the product is launched onto the market. Businesses might be advertising the new product a lot at this stage to increase awareness and might include introductory offers. Sales will increase steadily in the introduction stage (if successful).

⊛ **Growth** – If the launch of the product is a success, it will enter the growth stage (remember not all products go through all stages of the lifecycle, some may decline and never grow). At the growth stage, sales of the product will increase rapidly.

⊛ **Maturity** – At this stage, most customers have tried or bought the product. New competitors might be on the scene. Sales are at their highest, but the rate of sales growth will slow down.

⊛ **Decline** – In this final stage, sales decline. If sales decline continues then the product will be withdrawn from the market. If businesses are aware of the Product Lifecycle though, they will be able to extend the life of a product before it enters the decline stage.

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R064 Learning Outcome 3 Knowledge Organiser

### What is an Extension Strategy?

An Extension Strategy is the name given to the action a business takes when it identifies a product is close to entering the decline stage of the Product Lifecycle. These actions aim to extend the life of a product, by keeping the product within the maturity stage, and should improve sales.

### What Extension Strategies can businesses use?

Businesses could advertise their product to remind customers that it exists and to encourage them to purchase it. The price of the product could be reduced, or the product could be updated to encourage new sales. Businesses might choose to explore other markets – like targeting a different audience or selling in another country. This would expose the product to new customers. The packaging of the product could be updated to get customers' attention.

### What is Product Differentiation?

As the name suggests, Product Differentiation refers to what is DIFFERENT or what STANDS OUT about the product or service a business is launching. Businesses usually identify what is different about their product in the development stage of the product lifecycle.

### How can Product Differentiation be achieved?

- Businesses should try to build a strong brand image for their goods or services.
- Businesses should focus on the function, cost and appearance of their products (these are variables of the Design Mix Model).

To stand out, business could offer improved/better:

- Design mix (see above)
  - Location
  - Product Features
  - Product Functions
  - Better services (delivery etc.)
  - After sales services (extended guarantees etc.)
  - Design/Appearance of their products
- ...or they could identify a product's USP

Differentiation is about the product itself, not the price etc.

### What is a USP?

USP stands for **Unique Selling Point**.

This is a specific thing that a business identifies about their product or service that is different (unique). Businesses identify a USP for their products or services to help them DIFFERENTIATE from others on the market.

### How can identifying a USP for a product help sales?

If a business identifies a USP for a product or service, they can use this within their advertising. If the market already has existing products or services being sold, having a USP will help a new product stand out and will give customers a reason to change their habits and purchase the new product.

### What are the three categories of External Factors that could affect Product Development?

☆ **Technological Developments** – technology is changing and updating at a fast pace. Businesses must keep up to date with these developments or they'll be left behind by competitors. Technology could speed up the manufacturing of products, speed up the design process for new products or impact on customers' preferences.

☆ **Economic issues** – the state of the country's economy can have an impact on whether businesses are likely to develop new products or not. In a **recession**, for example, people are generally struggling to make ends meet and businesses will struggle with sales/survival – they're unlikely to invest in new product development.

If there is an economic **boom** then more people are employed and have money to spend; businesses will make more sales but may struggle to keep up with production of existing products to meet increased demand, so they may not be able to focus as much on developing new products.

☆ **Legal Issues** – businesses need to make sure they understand different laws when developing new products and ensure they do not break any of these laws. Laws could have an impact on the way a product is manufactured or could change the designs of some products to ensure they meet **safety standards** within a particular country. Businesses must ensure they do not break **Copyright** law; so they can't copy other people's work that already exists. They must also ensure they do not copy anyone else's product ideas that are covered by a **Patent** (the business might choose to patent their new ideas to stop others copying them too). Meeting legal obligations could cost the business more to produce a product but will ensure the business is less likely to break laws and therefore should avoid having legal cases brought against them.



### What factors do businesses consider when setting a price for a new product?

- ✳ Income levels of target customers (how much they're able to pay)
- ✳ How much target customers are willing to pay for products
- ✳ The prices competitors are charging for similar products
- ✳ The amount products cost to produce

### Why is it important for businesses to consider these factors before setting a price?

If businesses didn't consider what customers are able/willing to spend, then the price set could be too high – this would mean the business loses out on sales. If the product was priced a lot higher than that of the business's competitors, then it would struggle to compete. If the cost of production is not considered, businesses could end up selling a product at a loss.

### Methods of Advertising to attract and retain customers...

✳ **Leaflets** – these are small handouts given to customers in the street or posted to people (not specifically addressed to anyone). Businesses use these because they're cheap to make and can be kept by customers if needed (so they can be referred to for the business's phone number, for example). They are, however, often thrown away before being looked at.

✳ **Social Media** – websites/apps such as Facebook, Twitter and Instagram. These are used because they're cheap to advertise and accounts are usually free to create. It is possible to target adverts and specific people. Social Media is not, however, guaranteed to be used by all target customers, particularly older age groups.

✳ **Websites** – multiple pages hosted on the Internet. Websites can be accessed by customers around the world at any time of day. They are, however, less effective if not promoted or not kept up to date.

✳ **Newspapers** – these can be either local (in one area) or national (all around the country). Advertising in newspapers can be expensive but can get a large audience. Newspapers are less effective when targeting younger customers though and adverts are easily lost with the amount of information on any single page.

✳ **Magazines** – magazine advertising can also be expensive but often magazines are based on specific topics or aimed at a specific age group/gender, so this means it's easy for a business to target their advertising.

✳ **Radio** – Radio is likely the most expensive method of advertising out of the six methods. Adverts can grab people's attention with sound/music, but customers can't keep any information or might miss parts.

## Cambridge National in Enterprise & Marketing R064 Learning Outcome 4 Knowledge Organiser

### What is a Pricing Strategy?

A pricing strategy is a specific system used to set prices. There are lots of different pricing strategies that businesses can use, and some businesses use more than one on the same product. There are four you need to know for your exam (below). REVISE THEM!

### Pricing Strategies...

#### Competitive Pricing is...

When a business looks at what competitors are charging when considering what price they are going to charge for their products or services. It doesn't necessarily mean they charge a lower price (though they could in order to be competitive).

#### Psychological Pricing is...

When businesses avoid using round numbers for their prices, instead choosing to end prices with figures like 99p. This gives the psychological impression that the products are not as expensive - £2999 instead of £3000, for example, is only £1 off, but appears cheaper!

#### Price Skimming is...

When businesses charge a HIGH price for a new product or service because people will be willing to pay for it as it's new and sought after. This price is then lowered over time as other products are released or the product itself becomes more common.

#### Price Penetration is...

When businesses charge a LOW price when a product or service is first launched and then increase the price over time. This encourages people to give the product or service a chance, with the hope that they'll buy it again. This is a way of changing customers' established buying habits and is used in crowded markets.

### Methods of Promotion...

✳ **Discounts** – these are appropriate for all products or services. They help businesses attract customers, who will buy because of a discounted price, and can encourage repeat custom if the price is discounted again at a later date.

✳ **Competitions** – competitions are often used by businesses that advertise on social media. They encourage people to interact with the brand, which can attract new customers.

✳ **Buy one get one free (BOGOF)** – these are suited more to businesses that sell products, rather than services, and to businesses that sell products that people consume (use a lot of) – like groceries. These offers can be expensive for a business as they have to give away an additional product with each sale of a specific product.

✳ **Free gifts/product trials** – where a free gift is given with every purchase or a small 'test' product is offered to encourage customers to try a new product out.

✳ **Point of Sale Advertising** – point of sale refers to the place a product is sold; these are usually adverts within stores or at checkouts.

✳ **Loyalty Schemes** – this promotion method is used for products that people consume a lot of or buy regularly, like coffee. These schemes are mainly used to retain customers, as their loyalty will be rewarded with discounts/freebies.

### What is customer service?

Customer service is when a business provides assistance, support or advice to the people that are buying their products or services. Good customer service will mean people are happy to return and can also lead to a good reputation, which can help to attract new customers.

### Customer Service Techniques...

✳ **Good Product Knowledge** – customers expect businesses to have staff that know the products they're selling inside out! As more and more people buy online, businesses that offer expert knowledge can compete more with online retailers. This can attract customers.

✳ **Customer Engagement** – this means that the business's employees interact with customers in a polite way and make them feel special. This can help retain customers – if they're happy with the service, they'll likely return.

✳ **After Sales Service** – businesses can offer guarantees on products, maintenance and servicing. All of these additional services will help attract customers but will also mean that customers return to the business.



### What is a Functional Area?

A Functional Area is a 'department' within a business. Each department has its own specialisms and responsibilities, known as their functional activities. Functional Areas will often work together, communicating to ensure the business runs smoothly.

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R064 Learning Outcome 6 Knowledge Organiser

## Functional Areas / Activities

### Human Resources

#### Description...

The Human Resources Functional Area deals with the business's employees.

If you think that this function deals with the PEOPLE, then it should be easy to remember by relating the word HUMAN to PEOPLE within the business.

#### Main Activities/Responsibilities...

- Recruiting employees
- Ensuring the right number of people are working within the business (no shortages, not too many employees)
- Training employees
- Performance management (giving employees targets and checking on how well they're working)
- Health and Safety within the workplace
- Ensuring the business keeps to all laws relating to employment and employees

### Marketing

#### Description...

The Marketing Functional Area is responsible for identifying what customers wants and needs are.

This Functional Area is then responsible for developing products that meet these wants and needs.

#### Main Activities/Responsibilities...

- Carrying out Market Research
- Finding out customers' opinions
- Gathering feedback from customers
- Developing a marketing mix for the products the business offers.
- The Marketing Mix involves the 4 P's... PRODUCT, PRICE, PLACE and PROMOTION. The marketing function focus on getting this mix right so the product has more chance of success.

### Operations

#### Description...

Sometimes referred to as the 'Production Department', this Functional Area is responsible for the process that turns inputs (raw materials) into outputs (finish goods) that can be sold to customers.

#### Main Activities/Responsibilities...

- Planning how products will be manufactured
- Producing the product or service
- Quality control
- Stock control
- Ordering stock
- Logistics (delivery of stock / finish products)

### Finance

#### Description...

This Functional Area is responsible for everything to do with money in the business. They also organise the financial performance reports on an annual basis.

#### Main Activities/Responsibilities...

- Budgets
- Organising resources
- Ordering
- Preparing financial statements which will be submitted to HMRC (HMRC is the Government department that deals with tax).
- Reporting on financial performance; if it's a company, these reports will be available for all to see.

### What is the difference between function activities in a small start-up business and a large company?

In a small business start-up, all of the above functional activities are likely to be carried out by the same person (if it's a sole trader business) or a handful of people (in a partnership). There won't be dedicated teams of people to do all of the different activities required.

In larger firms, Functional Areas will have big teams of people all working together on specific tasks within the same department. The departments will still communicate with one another, but there is less likely to be shared responsibilities.

### Summary of some main activities...

Checking Quality of Products

Operations

Manufacturing Products

Operations

Organising delivery of parts

Operations

Advertising Products

Marketing

Carrying out Market Research

Marketing

Paying employees' wages

Finance

Health and Safety

Human Resources

Posting adverts for a job

Human Resources



# Food Preparation and Nutrition

Year 11 Food Preparation and Nutrition knowledge organiser Spring Term

**What's assessed:** Food preparation assessment (70 marks)

Students' knowledge, skills and understanding in relation to the planning, preparation, cooking, presentation of food and application of nutrition related to the chosen task.

Students will prepare, cook and present a final menu of three dishes within a single period of no more than three hours, planning in advance how this will be achieved.

**How it's assessed:** Written or electronic portfolio including: evidence of research and analysis of the chosen task

- ✓ evidence of making 3-4 dishes outside of the single 3 hour period to demonstrate technical skills. These dishes will be used to justify the choices of dishes for the final menu. There is an expectation that candidates will not simply re-make the same dishes.
- ✓ evidence of planning, preparing, cooking and presenting a menu of three dishes within a single period of no more than 3 hours.
- ✓ analysis and evaluation of the nutritional, cost and sensory properties of the three dishes

| <b>Marking criteria:</b>   |  |
|--|--|
| Section  | Description  |
| <p><b>Section A: Researching the task (6 marks)</b><br/>Students will research and analyse the culinary tradition related to the task</p>  | <ul style="list-style-type: none"> <li>• Relevant, concise and accurate research that shows discrimination when selecting and acquiring information to answer the task.</li> <li>• Detailed understanding and analysis of the dietary group, life stage or culinary tradition.</li> <li>• Selected a varied range of relevant dishes closely reflecting the research and chosen task</li> </ul>  |
| <p><b>Section B: Demonstrating technical skills (18 marks)</b><br/>Students will make 3–4 dishes to showcase their technical skills</p>  | <ul style="list-style-type: none"> <li>• Competently executes a wide range of complex technical skills/processes (eg filleting fish or cutting vegetables with precision and accuracy eg julienne) to produce excellent quality dishes.</li> <li>• Selects and uses appropriate equipment confidently and accurately.</li> <li>• Extensive review of technical skills that leads to appropriate and justified final dishes.</li> </ul>   |
| <p><b>Section C: Planning for the final menu (8 marks)</b><br/>As a result of demonstrating technical skills, students will provide explanation for the final three dishes related to eg ingredients, processes, technical skills, nutrition, food provenance, cooking methods and portion size.</p> | <p>Detailed review and full justification of the choice and appropriateness of the final three dishes related to the task and research eg nutrition, ingredients, cooking methods.</p> <ul style="list-style-type: none"> <li>• Detailed, realistic, logical and accurate plan including selecting appropriate techniques for the making of the final dishes.</li> <li>• The time plan will include accurate timings, reference to food safety, relevant and accurate dovetailing.</li> </ul>  |
| <p><b>Section D: Making the final dishes (30 marks)</b><br/>Students will prepare, cook and present a menu of three dishes within a single period of no more than three hours.</p>   | <p>Competently executes a wide range of complex technical skills and processes to an excellent standard (such as filleting fish or cutting vegetables with precision and accuracy eg julienne) in the making of the three final dishes.</p> <ul style="list-style-type: none"> <li>• Selects and uses appropriate equipment with precision and accuracy.</li> <li>• The three final dishes show a high level of demand, complexity and challenge.</li> <li>• Final three dishes include a wide range of finishing techniques such as garnishing and decoration eg piping. All dishes are accurately presented with attention to detail and finished to an excellent standard.</li> <li>• Excellent evidence of time management. All three dishes produced very successfully within the three hour period. The student followed the time plan closely using the correct sequence with excellent linking and application of food safety principles.</li> </ul> |

|  |   |
|--|---|
| <p><b>Section D: Making the final dishes (30 marks)</b> Students will prepare, cook and present a menu of three dishes within a single period of no more than three hours.</p>   | <ul style="list-style-type: none"> <li>• Competently executes a wide range of complex technical skills and processes to an excellent standard (such as filleting fish or cutting vegetables with precision and accuracy eg julienne) in the making of the three final dishes.</li> <li>• Selects and uses appropriate equipment with precision and accuracy.</li> <li>• The three final dishes show a high level of demand, complexity and challenge.</li> <li>• Final three dishes include a wide range of finishing techniques such as garnishing and decoration eg piping. All dishes are accurately presented with attention to detail and finished to an excellent standard.</li> <li>• Excellent evidence of time management. All three dishes produced very successfully within the three hour period. The student followed the time plan closely using the correct sequence with excellent linking and application of food safety principles</li> </ul> |
| <p><b>Section E: Analyse and evaluate (8 marks)</b> Students will carry out sensory evaluation and record the results for all of their practical dishes. For the final dishes, students will carry out and record nutritional analysis, costing and identify improvements to their dishes.</p> | <ul style="list-style-type: none"> <li>• Accurate nutritional analysis data for the three final dishes which is fully explained with conclusions and recommendations. Accurate and excellent knowledge of nutrition is demonstrated.</li> <li>• Detailed and appropriate sensory testing with detailed analysis and evaluation.</li> <li>• Final dishes are costed with the results of this costing analysed and explained.</li> <li>• Detailed, relevant and creative improvements suggested for the final dishes.</li> </ul>  |



French

# French Year 11 Spring Term - Future Plans

## Jobs

je suis - I am  
avocat - a lawyer  
mécanicien - a mechanic  
maçon - a builder  
patron - boss  
coiffeur - hairdresser  
serveur - waiter  
vendeur - sales assistant  
facteur - postman  
boucher - butcher  
boulangier - baker  
infirmier - nurse  
médecin - doctor  
vétérinaire - vet  
pilote - pilot  
pompier - fireman  
agent de police - policeman  
comptable - accountant  
créateur de mode - fashion designer  
directeur d'entreprise - company director  
ingénieur - engineer

Jobs in French have both masculine and feminine forms.

Click on the QR code:



## Future Plans

Je voudrais... - I would like...  
passer mes examens - to sit my exams  
réussir mes examens - to pass my exams  
prendre un annee sabbatique - to take a gap year  
voyager - to travel  
faire un apprentissage - to do an apprenticeship  
aller à la fac - to go to university  
faire du bénévolat - to do charity work  
me marier ou me pacser  
habiter avec mon copain/ma copine - to live with my boy/girlfriend  
travailler en équipe - to work in a team  
travailler dans le commerce - to work in business

## Work Experience

J'ai fait un stage..- I did work experience..  
dans un bureau - in an office  
dans un magasin de vêtements - in a clothes shop  
dans un salon de coiffure - in a hairdressing salon  
dans un banque - in a bank  
J'ai aidé les clients - I helped the customers  
J'ai rangé les vêtements - I tidied the clothes  
J'ai tapé des documents - I typed documents  
J'ai fait des photocopies - I did photocopies  
J'ai lavé les cheveux des clients - I washed customers hair  
J'ai fait du café - I made coffee  
J'ai répondu au téléphone - I answered the phone  
J'ai envoyé des emails - I sent emails

## Helping at home and earning money

Je fais le ménage - I do the housework  
Je fais la vaisselle - I do the washing up  
Je fais mon lit - I make my bed  
Je fais la cuisine - I do the cooking  
Je mets la table - I lay the table  
Je sors la poubelle - I take out the bin  
Je débarrasse la table - I lay the table  
Je garde mon petit frère - I look after my brother  
Je passe l'aspirateur - I do the hoovering  
Je range ma chambre / mes affaires - I tidy my room  
Je balaie le plancher - I sweep the floor  
J'étends la linge - I put out the washing  
Je tonds le gazon - I mow the lawn  
Je promène le chien - I walk the dog  
J'essuie la vaisselle - I do the drying up  
Je fais du babysitting - I babysit  
Je livre des journaux - I deliver papers  
Je reçois \_\_\_ livres par semaine - I get \_\_\_ pounds per week

## The Perfect Tense with avoir

To form the perfect you need to use the verb *avoir* in the present tense:

j'ai - i have  
tu as - you have  
il / elle a - he / she has  
on a / nous avons - we have  
vous avez - you have  
ils /elles ont -they have

You then add the past participle:

-er verbs = é (j'ai joué)  
-re verbs = u (j'ai perdu)  
-re verbs = i (j'ai fini)

## The Perfect Tense with être

There are 14 verbs which use *être* to form the perfect tense:

The most important verb which uses *être* is "aller"

*Je suis allé* - I went



## Oak National Academy -

Lesson on the units we cover in the Spring Term can be found on The Oak National Academy website.



Geography



# T1

Find a playlist of explainer clips by scanning or clicking the QR code

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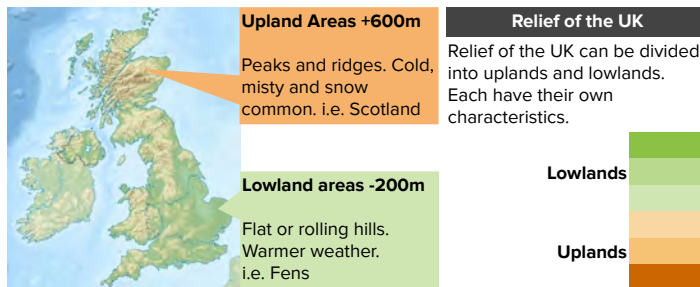
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# Landscapes and physical processes



## Geography Knowledge Organiser

### 1.1.1 - Distinctive landscapes



**Relief of the UK**  
Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.



#### Glaciation in the UK

Over many thousands of years, glaciation has made an impression on the UK's landscape. Today, much of upland Britain is covered in u-shaped valleys and eroded steep mountain peaks.

| During the ice age   |  |
|--|--|
| Ice covered areas eroded and weathered landscapes to create dramatic mountain scenery. |  |
| After the ice age  |  |
| Deep valleys and deposition of sediment revealed                                       |  |

#### What is a landscape?

A landscape has visible features that make up the surface of the land. Landscapes can be broken down into four 'elements'.

| Landscape Elements |                   |
|--------------------|-------------------|
| <b>Physical</b>    | <b>Biological</b> |
| -Mountains         | -Vegetation       |
| -Coastlines        | -Habitats         |
| -Rivers            | -Wildlife         |
| <b>Human</b>       | <b>Variable</b>   |
| -Buildings         | -Weather          |
| -Infrastructure    | -Senses           |

### 1.1.2/3 - Human activity

**Honeypot site** - A location which attracts a large number of tourists who, due to their numbers, place pressure on the environment and local people.  
**Carrying capacity** - The number of people which a region can support without damaging the location and environment.  
**Visitor pressure** - tourists who, due to their numbers, place stress on the environment and local people.

| Positives of visitor pressure  | Negatives of visitor pressure   |
|--|---|
| Employment opportunities are created to meet the demands of the tourists | Jobs are often seasonal or part time. This makes it harder to support family. |
| Tourism brings in money and will boost the local economy                 | There is overcrowding in the peak seasons                                     |
| There will be upkeep of the area, making it a clean place to live        | Businesses are designed for the tourists                                      |
| Crime can be reduced due to higher levels of employment                  | There can be congestion on the roads  |
|  | Scenic walks and hikes are damaged by footpath erosion                        |

**(1.1.3) Management: repairing footpaths**

**Stone pitching** - This technique involves digging stone into the ground to form good solid footfalls. This ancient technique is used extensively in the central fells using stone which is naturally occurring.

**Soil Inversion** - A digger is used to construct a ditch drain. The soil removed from the drain is placed alongside to create a hard wearing walking surface. Grass seed mix is then sown to encourage vegetation to bind all the works together.

**Sheep wool** - The fleece is placed between the soil and the stones to prevent the stone from sinking into the soil. This creates a 'floating' path and also absorbs some water to slow surface runoff.

### 1.2.1 - Processes & landforms (Rivers)

| Erosion                 |  |
|-------------------------|--|
| <b>Attrition</b>        | Rocks that bash together to become smooth/smaller.                             |
| <b>Solution</b>         | A chemical reaction that dissolved rocks.                                      |
| <b>Abrasion</b>         | Rocks hurled at the base of a cliff to break pieces apart.                     |
| <b>Hydraulic Action</b> | Water enters cracks in the cliff, air compresses, causing the crack to expand. |
| Transportation          |  |
| <b>Solution</b>         | Minerals dissolve in water and are carried along.                              |
| <b>Suspension</b>       | Sediment is carried along in the flow of the water.                            |
| <b>Saltation</b>        | Pebbles that bounce along the sea/river bed.                                   |
| <b>Traction</b>         | Boulders that roll along a river/sea bed by the force of the flowing water.    |
| Deposition              |  |

When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition.

#### Freeze-thaw weathering

**Stage One**  
Water seeps into cracks and fractures in the rock.

**Stage Two**  
When the water freezes, it expands about 9%. This wedges apart the rock.

**Stage Three**  
With repeated freeze-thaw cycles, the rock breaks off.

#### Weathering

**Chemical**  
Action of chemicals within water dissolving the rock.

**Biological**  
Rocks that have been broken down by living organisms or plant roots.

#### Formation of a waterfall

- 1) River flows over alternative types of rocks.
- 2) River erodes soft rock faster creating a step.
- 3) Further hydraulic action and abrasion form a plunge pool beneath.
- 4) Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.
- 5) Waterfall retreats leaving steep sided gorge.

#### Formation of floodplains and levees

When a river floods, fine silt/alluvium is deposited on the valley floor. Closer to the river's banks, the heavier materials builds up to form natural levees.

#### Formation of a meander

A meander is a curve in a river's course formed when erosion and deposition take place on opposite river banks. The two sides of the meander eventually meet and create a straight channel.

**Inside bend:**  
Slowest speed  
Deposition  
Slip-off slope/point bar

**Outside bend:**  
Fastest speed  
Erosion  
River cliff/undercut

#### Formation of a V-shaped valley

The river has eroded downwards.

These stones scrape along the bed of the river, eroding it downwards.

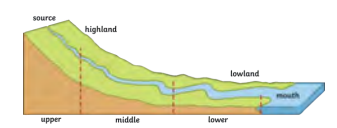
Weathering breaks up this rock. It falls into the river and is used for more erosion.

#### River long profile

**Upper course**  
Near the source, the river is flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed vertically to form narrow valleys.

**Middle course**  
Here the gradient get gentler, so the water has less energy and moves more slowly. The river will begin to erode laterally making the river wider.

**Lower course**  
Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.



# 1.2.1 - Processes & landforms (Coasts)

### Formation of bays and headlands

- 1) Waves attack the coastline.
- 2) Softer rock is eroded by the sea quicker forming a bay, calm area causes deposition.
- 3) More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.

### Formation of coastal landforms

1. Crack
2. Cave
3. Arch
4. Stack
5. Stump

Wave-cut platform exposed at low tide

1. Hydraulic action widens cracks in the cliff face over time. Abrasion forms a wave cut notch between HT and LT.
2. Further abrasion widens the wave cut notch to form a cave.
3. Caves at both sides of the headland break through to form arch
4. Weather above/erosion below –arch collapses leaving stack.
5. Further weathering and erosion leaves a stump.

### Types of coastline

**Concordant**  
A concordant coastline occurs where the bands of differing rock types run parallel to the coast. The outer hard provides a protective barrier to erosion of the softer rocks further inland. Sometimes the outer hard rock is punctured allowing the sea to erode the softer rocks behind. This creates a cove which is a circular area of water with a relatively narrow entrance way from the sea.

**Discordant**  
Discordant coastline occurs where bands of differing rock type run at right angles to the coast. The different resistance to erosion leads to the formation of headlands and bays.

Concordant coast with only 1 rock type

Discordant coast with many rock types

### Formation of coastal spits (longshore drift)

Material moved along beach in zig-zag way

Coastline changes direction

Spit curved with change of wind direction

Material deposited in shallow, calm water, so form a spit

Spit

Prevailing winds bring waves in at an angle

- 1) Swash moves up the beach at the angle of the prevailing wind.
- 2) Backwash moves down the beach at 90° to coastline, due to gravity.
- 3) Zigzag movement (Longshore Drift) transports material along beach.
- 4) Deposition causes beach to extend, until reaching a river estuary.
- 5) Change in prevailing wind direction forms a hook.
- 6) Sheltered area behind spit encourages deposition, salt marsh forms.

### Mass movement

Mass Movement is the downhill movement of cliff material

**Rockfall** As the weathering processes weaken the structure of the cliff rock fragments fall away.

**Landslide** Large blocks of the cliff slide down to the base of the cliff due to erosion weakening the base of the cliff

**Slumping** When soft rocks like clay become too wet from rainfall and weakened by erosion, the entire cliff face slips down in a curve, making steps in the cliff

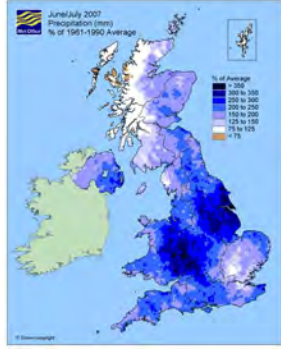
### Wave-cut landforms

1. Sea attacks base
2. Wave-cut notch
3. Cliff collapses
4. Wave-cut platform
5. Cliff retreats

1. The sea attacks the base of the cliff between the high and low water mark.
2. A wave-cut notch is formed by erosional processes such as abrasion and hydraulic action - this is a dent in the cliff usually at the level of high tide.
3. As the notch increases in size, the cliff becomes unstable and collapses, leading to the retreat of the cliff face.
4. The backwash carries away the eroded material, leaving a wave-cut platform.
5. The process repeats. The cliff continues to retreat.

# 1.2.2 - Rates of change

**Climate**  
The rainfall map of the UK shows variations in rain. Less precipitation occurs in low land areas. East England Most precipitation occurs in upland areas. Scotland.



**These differences mean...**  
Uplands experience more weathering, erosion and mass movement.

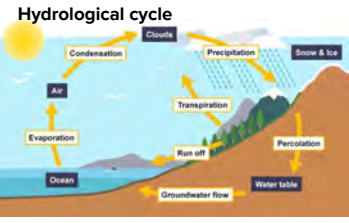
**Geology**  
Some rock types erode faster than others (sedimentary limestone or clays erodes quicker than metamorphic granite). The direction rocks are layered in can also affect this eg. concordant or discordant coastlines



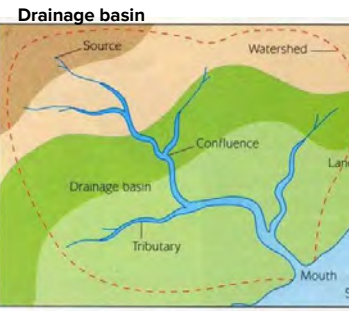
**Human activity**  
Humans can increase rates of change such as footpath erosion on cliffs or building on floodplains but humans can also put management in place is slow erosion or transport processes, like dams, groyne, river dredging & afforestation.



# 1.3.1 - Drainage basins



**Surface runoff**- water runs across the ground to a river  
**Infiltration**- water seeps into the soil in the ground  
**Percolation**- water seeps into rock deeper in the ground  
**Groundwater flow**- water flows through the soil and rock in the ground



**Condensation**- when water vapour cools to form clouds  
**Evaporation**- where water is turned into water vapour (gas)  
**Precipitation**- any water that falls from the sky (rain, snow etc)  
**Interception**- vegetation traps water before it reaches the ground  
**Transpiration**- water is evaporated from the leaves of vegetation

**Drainage Basin**- is the area of land drained by a river and its tributaries  
**Watershed**- the area of high land forming the edge of a river basin  
**Source**- where a river begins  
**Mouth**- where a river meets the sea  
**Tributary**- a small river or stream that joins a larger river  
**Confluence**- the point at which two rivers meet  
**Main river channel**- main river flow in the drainage basin  
**Floodplain**- flat land on the sides of the river that takes the overflow water

# 1.3.2 - River flooding

- Factors influencing how rivers flood:**
- Steep Slopes** - If the land surrounding a river is steep, rainfall will run quickly across the ground as surface runoff, increasing the river's discharge
  - Urbanisation** - Roads and pavements are built using a tarmac, an impermeable material. Rainfall flows quickly over tarmaced surfaces as it cannot infiltrate into the ground, leading to rapidly increasing discharge
  - Geology** - If a drainage basin has impermeable rock, water is unable to percolate into the rock. As a result, the rainfall flows into the river via throughflow and surface run off
  - Heavy or prolonged rainfall** - A high volume of rainfall will cause a river's discharge to increase rapidly, increasing the chances of the river bursting its banks
  - Vegetation** - Trees intercept rainfall as it falls from the sky. If there is a lack of vegetation, more rainfall reaches the ground and eventually the river, seeing a large increase in discharge

# 1.3.3 - Flood management

**Hard Engineering** - Hard engineering management involves using artificial structures, such as dams and embankments which try to control rivers. They tend to be expensive.

**Soft Engineering** - Soft engineering management is a more natural approach to manage flooding, it does not involve building artificial structures, but takes a more sustainable approach to managing the potential for river flooding.



## River defences

### Hard Engineering

**Channel straightening** Removing meanders, increases velocity to remove flood water.

**Artificial Levees** Man-made banks heighten river so flood water is contained.

**Channel widening** Makes river wider to increase capacity for a flood.

### Soft Engineering

**Afforestation** Planted trees soak up rainwater, reduces flood risk.

**Managed Flooding** Naturally let some areas flood to protect settlements.

## Home study questions



### DEVELOPING

**Describe** how tourists can have benefits and negatives to honeypot sites [3 marks]

**Explain** why a waterfall migrates backwards the source [4 marks]

### SECURING

**Analyse** the pattern of average precipitation (rainfall) in the UK (1 . 2 . 2) [6 marks]

**Explain** the difference between discordant and concordant coastlines [4 marks]

### MASTERING

'Urbanisation is the most significant factor in flooding' **To what extent** do you agree with this statement? [8 marks]

**Sketch and annotate** the formation of a spit [6 marks]

### CHALLENGE

**Create** a spider diagram to show how all the erosional processes and landforms of rivers and coasts are linked

**Draw** out a river long profile and **label** where the different landforms and processes would usually occur



# T2

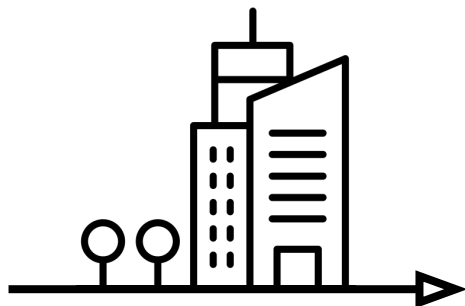
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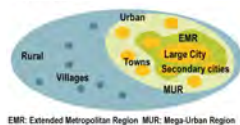
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## Rural-urban links



Geography Knowledge Organiser

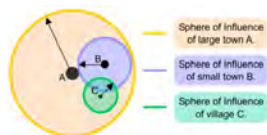
### 2.1.1 - Rural-urban continuum



A **rural-urban continuum** is the gradual change from a very built up urban area (like a large city) through to rolling countryside and sparsely populated villages. There is no clear line between urban and rural, as represented by the diagram

#### Service provision

As we move along the continuum from the most rural to the most urban locations, the number of services provided by each settlement increases. For example, in a small village there is likely to be a post office and a. However, in a large city there are a large number of shops, supermarkets, banks, hospitals and entertainment providers.



A **sphere of influence** is the area around the settlement from which people are attracted to visit or work due to the services the settlement provided. Large cities have more services so have a larger sphere of influence in the area

#### Counter-urbanisation

The movement of people from urban to rural areas to live.

#### Reasons for counter-urbanisation:

- Housing** - cheaper & bigger
- Transport** - improved roads and increased car ownership
- Employment** - more workplaces now located on urban-rural fringe
- Environmental factors** - less noise and air pollution

#### Impact of counter-urbanisation:

- Higher house prices** - increased demand
- Decrease in traditional services** - (village shops) residents now shop in urban areas
- Increase need for local schools**
- Traffic congestion**
- Commuting - People often choose to live in cheaper rural areas and commute to work rather than paying higher urban prices, or just work from home*

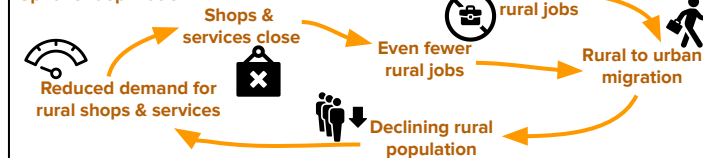
### 2.1.2 - Changing rural areas

#### Rural change

- Counter-urbanisation, sphere of influences and technological change has led to:
- Reduction or change in employment opportunities in rural area
  - Closure of rural services like banks and post offices
  - Increase in house prices rural areas, especially in accessible "commuter belt"
  - Increased "second" home ownership
  - Some locals can no longer afford local houses
  - Reduction in bus services

Some of the more remote rural areas have experienced lots of negative changes. These include **depopulation** and **deprivation**. Deprivation is often characterised by a lack of public transport, healthcare and education.

#### Spiral of deprivation



#### Sustainable rural community

- Things that need to be considered when creating a sustainable community;
- Availability of jobs** – encourage jobs based in rural areas by encouraging more companies to locate there
  - Education** – ensuring local schools remain open
  - Healthcare** – ensure all locals can access healthcare (transport links to cities)
  - Village services** – encouraging shops, pubs and post offices to remain open
  - Transport** – ensuring public transport runs regularly and can be accessed by all
  - Internet** – ensure fast and reliable broadband

### 2.2.1 - Changing population

#### UK population change factors

- |   |   |  |
|---|---|--|
| <b>Social</b><br><b>Healthcare</b> - free and accessible for all, so people are living longer<br><b>Marriage/culture</b> - People are marrying later and having a family later, reducing the number of children they can have | <b>Economic</b><br><b>Careers</b> - many women now chose to have a career, than start a family<br><b>Maternity pay</b> - Getting paid while looking after a newborn child encourages more people to have children | <b>Political</b><br><b>Contraception</b> - is widely available<br><b>Mat-/Pat-ernity rights</b> - Mothers and Fathers now have the rights to paid leave to care for a newborn, so encouraging more people to have children |
|---|---|--|

#### UK migration

- |   |   |
|---|---|
| <b>Migration to the UK</b><br>Stable government<br>More available jobs<br>Good healthcare system<br>Already have family in the UK<br>Good education system<br>Better rates of pay | <b>Migration within the UK</b><br>Cost of housing cheaper somewhere else<br>Change in lifestyle - retiring to a rural area<br>Searching for work - more jobs in a cities<br>Moving to reduce the commuting time - live closer to work<br>Moving closer to family for care needs |
|---|---|

#### UK's ageing population

- |  |   |  |
|--|---|--|
| <b>Causes</b><br>Low birth rate and low death rate means we have more people living for longer (high life expectancy). The UK now have more people aged 60+ than ever before | <b>Social/Health effects</b><br>- OAPs have more health issues, straining NHS<br>- Increased demand for care homes and carer services<br>- More people living longer increases demand for homes | <b>Economic effects</b><br>- Not enough working aged population to pay taxes<br>- Healthcare, free public transport etc costs the state more money<br>- Pension costs for government increases |
|--|---|--|

### 2.2.2 - UK towns and cities



#### Egan's wheel

Egan's wheel outlines the criteria that needs to be met for a community to be sustainable. There is a social, economic and environmental focus. All of these categories must be met in order to have a sustainable community in urban and rural places.

#### Greenfield development

Greenfield sites are those that have not been built on before.

They are easier and cheaper to build on as there's nothing to knock down and there's more land available.



But this isn't sustainable as it is destroying the natural environment and animal habitats.

#### Brownfield development

Brownfield sites are those that have been built on before and is often derelict.

Planning permission is often easy to obtain and there are already existing services.



This is a more sustainable method of development however space is often limited and it can be expensive.

### 2.2.3 - Changing retail

#### Retail change in the UK

- |  |  |   |
|--|--|---|
| <b>Economic factors</b><br>More home delivery firms making deliveries cheaper, congestion in cities, free parking in out of town centres, high city centre parking costs | <b>Cultural factors</b><br>Car dependant society, habit of bulk buying weekly or monthly shops | <b>Technological factors</b><br>Development of high speed broadband, improved websites that can be used to compare prices, internet banking |
|--|--|---|

#### Out of town centres

- |  |   |
|--|---|
| <b>Benefits</b><br>Large free parking areas<br>Less congestion at out of town location<br>Quick and easy access (near motorway network)<br>Often room for expansion<br>Near suburban housing | <b>Costs</b><br>Can cause decline in city centre<br>Can increase congestion out of town<br>Often has the same chain stores at out of town centres – so does not support smaller independent shops.<br>Land use conflicts in out of town areas – areas in high demand from business parks and golf courses |
|--|---|

#### Internet shopping

- |  |  |
|--|--|
| <b>Benefits</b><br>Convenient and often cheaper<br>Can buy products not available locally<br>Can buy at any time or any location<br>Less time consuming<br>Traffic congestion is reduced<br>Jobs created for those delivering products | <b>Costs</b><br>Not everyone, (the elderly) have internet<br>Goods might be difficult to return<br>City centre shops might close, leads to jobs losses and decline<br>More delivery vans = more congestion<br>Using bank details can lead to fraud |
|--|--|

## 2.3.1 - Global urbanisation

Distribution of global cities



As a result of globalisation, places around the world are now more connected than ever before. **Global cities** have become key globally connected places.

Although global cities are distributed widely across the world it is not an even distribution. For example;  
 North America, Western Europe and South Asia have clusters of global cities  
 Africa has very few  
 India has 8  
 China has 14

### Changes over time

The rate of urbanisation varies across the world. In many HICs the period of rapid urbanisation occurred back in the 1800s, whereas many LICs are experiencing it at the moment.

## 2.3.2 - Urbanisation in global cities

London (HIC global city)

### Reasons for growth

**Natural population change** – from the migrants and young workers who were attracted to the city for work  
**Migration** – the UK attracted many from ex-colonies as well as people from other EU countries  
**Connections** – London is the financial capital of UK and for most of the global finances too. It has the stock exchange. It is also home to large MNCs. London is also a major trading and transport hub.

### Way of Life

The UK has huge numbers of cultures and races, as well as white British people there are huge numbers of migrants from India, Pakistan, Bangladesh, Canada, USA, Kenya, Zimbabwe and other ex-British colonies  
 London houses a major world financial centre and a range of business specialisms which attract a highly skilled workforce.  
 However London's unemployment rate was one of the highest in the UK



### Challenges

#### Poverty

Often people who live in inner-city areas experience a poor quality of life. This is because the inner-city is typically a zone with older housing and declining industry. There is a lack of housing provision; access to services; access to open land; safety and security.

#### Traffic Issues

London has massive problems with congestion. From the 1950s, car ownership has grown at a very quick rate. The increasing population of the city has meant roads are crowded and transport services such as the underground and buses struggle to cope

#### Urban decline

Some areas of a London suffers from out-migration of people and businesses, derelict buildings, high unemployment. This was common in the inner cities of the UK in the 1980s, leading to further poverty in these areas.

Mumbai (NIC global city)

### Reasons for growth

**Natural population change** – in 1974 the fertility rate was 4, although this has now reduced to 1.8. Natural change was therefore a big factor in the 1970's and 1980s but less so now.  
**Migration** – the pull factors for Mumbai are cheap rail travel, jobs and better education. The push factors from the surrounding countryside are poor standards of housing, healthcare and sanitation.  
**Connections** – Mumbai is the financial capital of India and home to the stock exchange. It is also home to large MNCs.

### Way of Life

Mumbai is a city of contrasts. One obvious one is the difference between rich and poor. Many well education people live in expensive properties while the majority of the city live in slums and work in the informal economy (in roles such as street vendors and rubbish collectors)  
 In the slums there is a lack of sanitation, adequate housing and open sewers are just some of the issues that face people living in these areas. Disease often spreads quickly due to the conditions and lack of health care facilities.



### Informal sector

**Wages are low** = families unable to save and cannot afford to send children to school = children fail to get an education and forced to work in informal sector  
**Informal workers don't pay tax** = government does not raise income and cannot afford to invest in schools or hospitals = **children fail to gain a good education** and forced to work in the informal sector.

### Challenges

**Reducing poverty and deprivation** – with such a large proportion of people living in slums. Education opportunities for these people are being increased, in addition to improved healthcare and sanitation.  
**Housing** – the majority of people live in slums, are pavement dwellers or live in crawls (four or five story tenement buildings with shared facilities). These areas suffer from overcrowding and the risk of fire, flooding or collapse.

## 1.3.3 - Connected global cities

**Global Cities are connected to each other and other places around the world by:**



**Finance and Trade** - global cities are the world's financial centres as banks locate their head offices in these cities and decisions regarding world trade are made here. This makes them very important places for the economy.



**Migration and Culture** - global cities attract economic migrants from all over the world. This pattern of migration results in cultural diversity which means that new languages, traditions, foods, celebrations and religions are brought to the country. For example in London over 250 languages are spoken.



**Governance and Decision-Making** - global cities are home to some of the most influential businesses and companies in the world where decisions made can influence the rest of the globe. For example the UN has headquarters in New York and yet employs 41,000 people worldwide.



**Ideas and Information** - global cities are home to many of the world's largest television and film industries, broadcasting all across the globe.



**Transport Hubs** - global cities are home to some of the world's largest airports which allow for the movement of people, goods and tourists across the globe. For example about 158 flights arrive at Dubai International Airport.

## Home study questions

### DEVELOPING

**Define** what an rural-urban continuum is [2 marks]

**Explain** how the spiral of deprivation leads to depopulation [4 marks]

### SECURING

**Analyse** the distribution in global cities around the world (2.3.1) [6 marks]

**Explain** why building on brownfield sites is more sustainable than on greenfield sites [4 marks]

### MASTERING

'The challenges associated with an NIC global city are more difficult to solve than those of HIC global cities' **To what extent** do you agree with this statement? [8 marks]

**Decide** why Europe and North America has the most significant concentration of global cities [6 marks]

### CHALLENGE

**Link** greenfield and brownfield developments to as many different elements of this module as possible

**Create** a spider diagram to show how Newcastle is linked to the rest of the world (a connected global city)



# T3

## Tectonic hazards



### Geography Knowledge Organiser

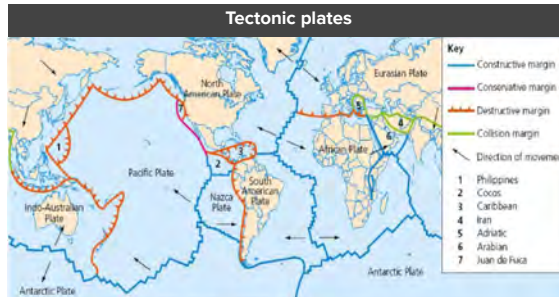
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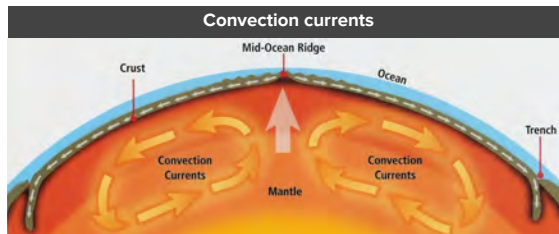
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### 3.1.1 - Tectonic processes and landforms



The earth is made up of a series of layers. The outer layer is called the crust. This is made of 2 different types:

- Continental Crust** (which is on average 35km thick)
- Oceanic Crust** (which is much thinner, between 6-8km)



Heat from the core causes **convection currents** in the mantle and these currents slowly move the plates

**Tectonic boundaries**

**Constructive**

**Mid-oceanic ridge**  
**Oceanic crust**

**Destructive**

**Deep ocean trench**  
**Fold mountain**  
**Oceanic crust**  
**Continental crust**

**Conservative**

**Friction builds up as plates force past each other.**

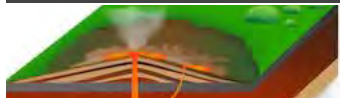
**Hot spot**

**Island chain**  
**Oceanic crust**  
**Magma plume**

1. Intense radioactivity in the Earth's interior creates a large column of magma (known as a magma plume)
2. The plume rises, melting and pushing through the crust above
3. The plume lies in a fixed position under the plate – as the plate move over it, a series of new volcanoes are created along the plate

### 3.1.1 - Tectonic processes and landforms

**Volcanic landforms**



**Shield volcano characteristic**  
Low profile  
Wide base  
Thin runny lava  
Made up of layers of lava  
Frequent and gentle eruptions



**Stratovolcano characteristic**  
High profile  
Narrow base  
Thick, slow lava  
Made up of layers of mainly ash  
Infrequent and violent eruptions

| Feature       | How it is formed   | Found at              |
|---------------|--|-----------------------|
| Ocean trench  | Where subduction takes place   | Destructive           |
| Fold mountain | Continental crust is crushed and folded upwards                                | Destructive           |
| Ocean ridge   | As lava cools a ridge is formed under the sea                                  | Constructive          |
| Rift valley   | Where 2 continental plates pull apart  | Constructive          |
| Caldera       | A large depression or crater formed by large stratovolcanoes or supervolcanoes | Destructive & hotspot |
| Cinder cone   | Bowl shaped crater of a shield volcano   | Constructive          |
| Lava tube     | Under the ground, basic lava develops a hard crust through which lava flows    | Constructive          |
| Geysers       | Water in the ground heated by the magma explodes onto the surface              | Destructive & hotspot |

### 3.2.1 - Tectonic impacts

**Volcano effects**

**MONTERRAT 1995-7**

- Health**
  - Ash clouds caused breathing problems
  - 19 deaths
  - 100s injured
- Infrastructure**
  - The capital, Plymouth, has been covered in layers of ash and mud
  - Lahars have destroyed large areas urban areas
  - The only airport was destroyed
- Economy**
  - Farmland abandoned (significant unemployment)
  - Prevented tourism so tourism economy suffered
  - Capital city is abandoned and rebuilt in the north

**Earthquake effects**

**HAITI 2010**

- Health**
  - 250,000 people died.
  - 300,000 people were injured.
  - Cholera spread through temporary camps
- Infrastructure**
  - Airport and port damaged
  - 30,000 buildings collapsed
  - Hospitals and medical centres were destroyed
- Economy**
  - Damage to the main clothing industry
  - Tourist industry will take years to recover
  - Infrastructure damaged reduced trade, imports and exports

**Tsunami effects**

**SOUTHEAST ASIA 2004**

- Health**
  - Over 220 000 deaths
  - 650 000 injured
  - 5-6 million needing emergency aid
- Infrastructure**
  - 1,000s of railway lines, roads, bridges and airports were destroyed
  - Hospitals within 30mi of the coastline were destroyed
  - Water supplies contaminated
- Economy**
  - Fishing industry devastated
  - Tourism, dropped 80%
  - Reconstruction cost billions of pounds

**Vulnerability to tectonic hazards**

- Physical factors**
- Duration** - the longer a hazard lasts the more severe the impact
- Predictability** - hazards that hit with no warning have a larger impact
- Volcanoes**
- Lava flows** - Molten rock flows down the side of a volcano (Local)
- Lahars** - Volcanic mudflows consisting of a mixture of ash and water (Local)
- Pyroclastic flow** - Burning clouds of gas and ash (Local)
- Ash clouds** - Ash thrown into the atmosphere (Regional/National/Global)
- Earthquakes**
- Magnitude** - the stronger the hazard the more severe the impacts

- Human factors**
- Wealth** - poor people are less able to withstand disasters and recover from it
- Education** - where populations are able to read and write, written messages can be used to spread warning or give advice about how to cope
- Governments** - can support education and can pass building regulations
- Age** - children and the elderly are more vulnerable
- Health** - healthy people are more able to cope
- Population density** - the more people living in the area the more that will be affected
- Time of the day** - e.g. earthquakes in rush hours have a more devastating effect
- Emergency services** - richer countries have well trained and well resourced response



## 3.2.2 - Tectonic management



**Earthquakes are difficult to predict but there are some monitoring techniques:**

- Laser beams can detect plate movement
- A seismometer is used to pick up vibrations in the earth's crust. These can lead up to an earthquake



**Monitoring Techniques used to predict volcanic eruptions include:**

- Remote sensing. Satellites monitor gas emissions and thermal imaging can work out the temperature within the volcano.
- Seismometers can pick up movements in the earth which sometimes occur before an eruption.



**Tsunami warning system:**

- Following the 1960 Chilean earthquake the Pacific countries decided to set up the Pacific Tsunami Warning System (PTWS).
- This is a network of seismometers and ocean buoys that detect earthquakes and ocean movements.
- Warnings are then given to local centres, which warn local people using the TV, radio, text messages and sirens.

### Hazard planning strategies

**Hazard Mapping** highlights areas affected by or vulnerable to earthquakes, volcanoes and tsunamis so planning and money can be targeted at these areas

**New building technology** can also reduce the impact of earthquakes. Often they are built to absorb the energy and withstand the earth's movement

**Emergency planning:**

- An exclusion zone can be set up around a volcano
- Lava flows can be diverted

Emergency services can be trained and given the equipment needed

People put together emergency kits which include first aid items, blankets etc.



## Home study questions



### DEVELOPING

**Describe** how a hot spot creates island arcs [2 marks]

**Compare** the differences between shield volcanoes and stratovolcanoes [4 marks]

### SECURING

**Analyse** the distribution of the 3 different plate boundaries around the world (3 . 1 . 1) [6 marks]

**Explain** how tsunamis impact the health and infrastructure of a country [6 marks]

### MASTERING

'Human vulnerabilities are responsible for more deaths than the physical risks associated with tectonic hazards' **To what extent** do you agree with this statement? [8 marks]

**Explain** how tectonic hazards are managed [4 marks]

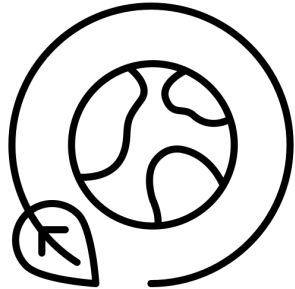
### CHALLENGE

**Research** the responses to the 3 hazard case studies (Montserrat, Haiti and SE Asia) and add these to the space below

**Explain** how tsunamis are a secondary effect of earthquakes

# T5

## Weather, climate and ecosystems



### Geography Knowledge Organiser

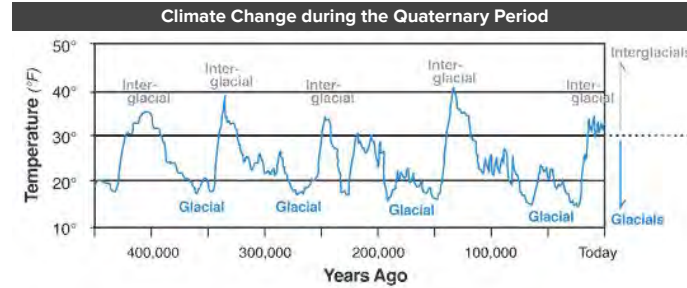
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### 5.1.1 - Climate change evidence



Over a long period of time (the last 400,000 years) there have been natural cycles of cooling and warming. The periods of time the average global temperature was below 15°C are known as **glacials**, and periods of warmth are known as **interglacials**.

| Evidence for climate change |  |
|-----------------------------|--|
|                             | Ice cores from the Antarctic show the amount of CO <sub>2</sub> and methane in the atmosphere have changed over the last 420,000 years |
|                             | Historical records, such as diary extracts   |
|                             | CO <sub>2</sub> levels in the atmosphere   |
|                             | Measurements by the met office show temperature has increased by 0.6°C over the past 100 years.  |

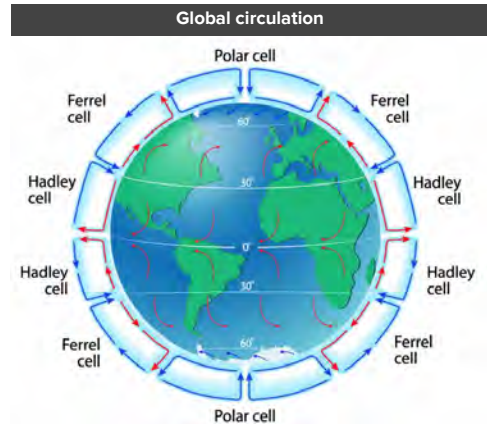
### 5.1.2 - Climate change causes

**Carbon cycle**

**Greenhouse effect**

The greenhouse effect is natural but humans have worsened the impacts. Carbon Dioxide and Methane are greenhouse gases which trap heat in the atmosphere. As more gases build up more heat is stored, warming the planet.

### 5.2.1 - Weather hazards



1. At the equator insolation heats the Earth which heats the air above
2. Hot air rises creating low pressure – as it rises it travels north and south
3. This air eventually cools and sinks at about 30° north/south of the equator – this creates high pressure
4. This air then returns to the equator (known as the intertropical convergence zone ITCZ)

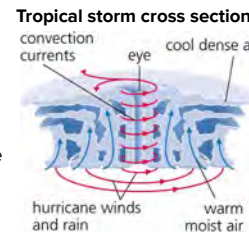
**Low pressure & tropical storms**

Warm air rises because it is less dense. When it reaches the edge of the atmosphere it cannot rise any further and moves north and south. The edge of the atmosphere is cold and so the air cools too. Low pressure can create a hazard called a tropical storm, which is also known as a hurricane, cyclone or typhoon

**Tropical storm causes (CYCLONE PAM 2015)**  
 Occurred near the island chain of Vanuatu in the South Pacific  
 Tropical storms can only form over large/deep oceans  
 Ocean temperatures of at least 27°C  
 Water depth of at least 50 meters  
 Gentle winds in the atmosphere to draw air up from water surface

**Tropical storm effects (CYCLONE PAM 2015)**  
 11 people died  
 90000 homeless  
 Hospitals and schools destroyed  
 Widespread destruction of fruits, vegetables, root crops and livestock  
 Stormsurge flooded coastal areas and contaminated freshwater supplies

**Tropical storm responses (CYCLONE PAM 2015)**  
 Emergency aid sent by Australia, Fiji, New Zealand and UK  
 153 temporary school built  
 Repairs to infrastructure to provide safe drinking water  
 Blankets & tents given to those made homeless  
 28 schools used as evacuation centres



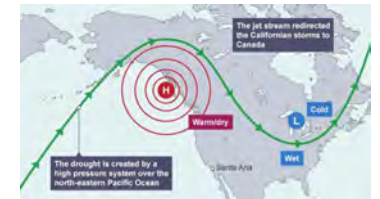
**High pressure & droughts**

As the air cools in the outer atmosphere it becomes heavier and starts to sink. This air moves back to the ground. This is called high pressure. As the air reaches the surface it starts to warm again and the cycle continues. High pressure can produce a hazard called a drought - a long period of no available water due to intense heat.

**Drought causes (CALIFORNIA 2012)**  
 The jet stream was further north than normal, pushing low pressure systems north and allowing high pressure systems to sit over the state creating a heat wave.

**Drought effects (CALIFORNIA 2012)**  
 A hosepipe ban was introduced  
 Homes were destroyed by wildfires  
 Hydroelectric power dams stopped producing electricity  
 Crops could not be grown and 17,000 agriculture jobs were lost  
 Fish died as high temps caused an oxygen decrease

**Drought responses (California 2012)**  
 12,500 water metres installed in homes  
 400,000 water saving toilets installed  
 3.2 million square feet of turf removed.  
 50% of Orange County's water supply is now imported from other areas.



## 5.2.2 - UK weather variations

**Weather** - the conditions of the atmosphere over a short period of time, often a day  
**Climate** - the weather of a place averaged over a period of time, often 30 years

### Factors affecting Climate in the UK



**Latitude** –the north of the UK has cooler temperatures than the south  
**Altitude** – mountain areas have cooler temperatures. Temperatures decrease by 1°C for every 200m of elevation.



**Ocean currents** – the North Atlantic drift brings warmer water to the UK, keeping the climate milder in winter and cooler in summer.  
 Different winds directions also bring different **air masses**:



- Pm** North westerly brings polar maritime air (cool and showery)
- Tm** South westerly brings tropical maritime (mild and wet)
- Pc** Easterly brings polar continental (cold and dry)
- Tc** South easterly brings tropical continental (warm and dry)
- Am** Northerly brings arctic air (cold and snow in winter)



### Low Pressure (depressions)

Begin in the Atlantic and move east  
 Brings rain, cloud and wind  
 Air rises, cools and condenses forming clouds

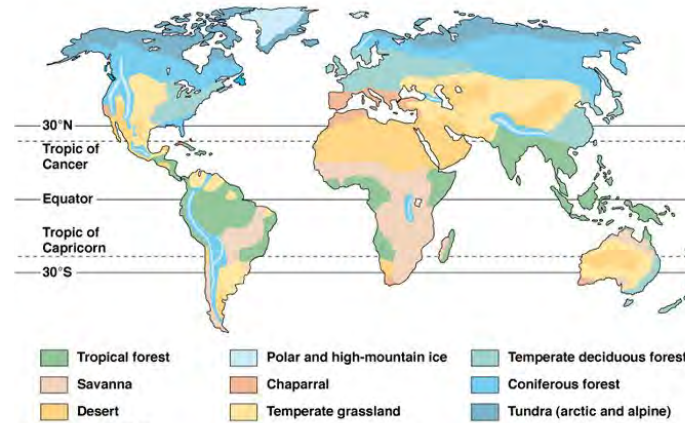
### High Pressure (anticyclone)

Low wind speed, stable conditions with no clouds  
 In summer they bring hot weather, which may lead to drought  
 In winter they bring cold (frosty) nights

### Microclimate

**Physical features** - hills, trees can block the wind and sun. Water cools the air  
**Shelter** - Buildings, trees and hills can shelter from the wind  
**Surface (albedo)** - dark surfaces heat up quicker than light surfaces  
**Buildings** - Buildings store up heat and redirect wind direction  
**Aspect** - locations facing south have sun all day, the north doesn't receive sunlight

## 5.3.1 - Ecosystems



Large scale **ecosystems** are known as **biomes**.

**Climate** – the most important factor in determining their distribution  
**Rainfall** – the amount and patterns determine the distribution of biomes  
**Temperature** – when rainfall is reliable and distributed evenly temperature becomes the most important factor

**Other factors can also have an influence e.g.**  
 Tropical rainforests are located either side of the equator where hot and wet conditions allow continuous growth of plants

## 5.3.2 - Ecosystem processes

### Tropical rainforest characteristics

**Shrub layer.** It is dark and gloomy with very little vegetation.  
**Under canopy.** It is the second level up. There is limited sunlight. Saplings wait here for larger plants and trees to die  
**Canopy.** This is where the upper parts of most of the trees are found. The canopy is typically about 65 to 130 feet (20 to 40 metres) tall.  
**Emergents.** These are the tops of the tallest trees in the rainforest. These are much higher, and so are able to get more light than the average trees in the forest canopy.



### Nutrient cycle

The rainforest nutrient cycling is rapid. The hot, damp conditions on the forest floor allow for the rapid decomposition of dead plant material. This provides plentiful nutrients that are easily absorbed by plant roots.



### Water cycle

The roots of plants take up water from the ground and the rain is intercepted as it falls - much of it at the canopy level. As the rainforest heats up, the water evaporates into the atmosphere and forms clouds to make the next day's rain.



### Carbon cycle

Rainforests contain about 40 to 50% of the carbon in the biomass, and very little in the soil due to the rapid nutrient cycling



### Key services

- Regulating climate and air quality
- Preventing Soil Erosion
- Carbon Storage
- Provisioning Goods (food, fuel)
- Flood prevention

### Biodiversity

Biodiversity is the variety of plant and animal life in a particular habitat, a high level of which is considered to be important and desirable. The tropical rainforest has a higher level of biodiversity than savannah

## 5.3.2 - Ecosystem processes

### Savanna characteristics

**Grasses and trees** - The savanna is a grassland with scattered trees and shrubs.  
**Rainy and dry seasons** - Savannas have two distinct seasons in regards to precipitation. There is a rainy season in the summer with around 15 to 25 inches of rain and a dry season in the winter when only a couple of inches of rain may fall.  
**Large herds of animals** - There are often large herds of grazing animals on the savanna that thrive on the abundance of grass and trees.  
**Warm** - The savanna stays pretty warm all year.



### Nutrient cycle

Nutrients are cycled quickly during the dry season in the tropical heat. Wildfires are common and nutrients are returned to the soil when vegetation burns.



### Water cycle

All most all rain falls during the rainy season. Vegetation quickly absorbs and stores this water for the dry season. Little water is lost by transpiration due to waxy leaves and low surface area of the plants.



### Carbon cycle

Majority of carbon is stored in vegetation with a lesser amount in soil. During dry seasons, wildfires can burn vegetation, releasing CO<sub>2</sub> into the atmosphere.



### Key services

- Preventing Soil Erosion
- Carbon Storage
- Provisioning Goods (food, fuel)

### Small scale ecosystem: sand dunes

Sand Dunes are a build up of sand around vegetation. This requires loose sand and prevailing winds which blow on-shore. They are formed through a processes known as succession. As plants die and decompose it nourishes the soil making it better quality and now more fragile plants will start to grow.

## 5.4.1 - Human uses

### Gwynt y Môr offshore wind farm

Offshore wind farms are located in the sea close to the shoreline as winds are stronger, unobstructed and do not impose on cities/population as much. Gwynt y Môr is located 15km off the north coast of Wales

The demand for renewable energy is increasing as non-renewables such as coal and gas are depleting

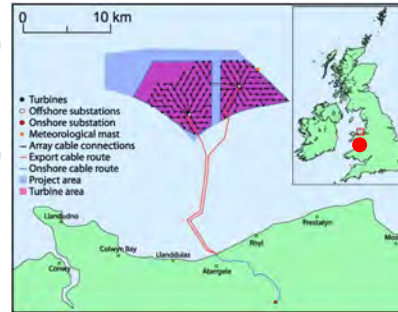


### Advantages

Produces power for 400,000 homes

Creates 100+ jobs

Helps with global climate change efforts



### Disadvantages

RSPB says it affects bird migrations and their normal routines

National Trust has concerns over affecting heritage and tourism

Locals are opposed as it spoils the natural beauty

## 5.4.2 - Human impacts

### Tropical rainforest uses

**Advantages:**  
**Infrastructure,** hospitals and education can be improved  
**Raw materials,** eg tropical hardwoods such as ebony and mahogany, can be sold for a good price abroad.  
**Large-scale farming** brings money into the country and provides food and jobs.  
**Small-scale farming** provides food for rainforest communities.

**Disadvantages:**  
**Land clearance** for farming, transportation and mining can lead to **deforestation**.  
**Loss of fertile soils** that make farming possible are quickly washed away when the forest is cleared.  
**Loss of animal habitat** occurs when trees are cut down. Hence, deforestation can result in endangering animals and plant life, or even causing them to become extinct.

### Savanna uses

**Advantages:**  
**Small-scale farming** provides food for rainforest communities.  
**Raw materials,** eg fuel (firewood)

**Disadvantages:**  
 Large areas of grassland have been turned into **farmlands** for growing crops and for rearing cattle.  
 Animals have been **hunted** for their valuable body parts or for sport.  
**Loss of fertile soils** that make farming possible are quickly washed away when the forest is cleared.





## 5.4.3 - Ecosystem management

### Tropical rainforest management



**Selective logging** – only cutting down older trees and not rare species. The International Forest Stewardship Council makes people aware of products made from sustainable timber.



**Agro-forestry** – growing new trees alongside crops



**Wildlife corridors** – connecting separated areas of forest with strips of vegetation so animals can move between areas



**Eco-tourism** – encouraging small groups of sustainable tourism. Money made is used to protect the ecosystem and uses local tour guides and companies.



**Debt-swaps** – HICs cancel debts which LICs have, if they protect their rainforests from over-exploitation

### Savanna management



**Crop rotation** – growing different crops and giving the land time to rest between planting to allow soil to recover nutrients



**Afforestation** – planting more trees to protect the soil



**Drought-resistant crops** – Planting genetically modified crops which can withstand long periods of water shortage



**Population control** – Encouraging people to have fewer children so less crops and water are needed in the area



## Home study questions



### DEVELOPING

**Describe** the economic effects of a low pressure hazard [3 marks]

**Give** three ways that humans have influenced the carbon cycle [3 marks]

### SECURING

**Analyse** the pattern of temperature change over the last 450 million years (5.1.1) [6 marks]

**Explain** how low pressure systems forms [3 marks]

### MASTERING

**Discuss** how sustainable the use of one ecosystem is [8 marks]

**Explain** the factors that influence changes in weather for the UK [6 marks]

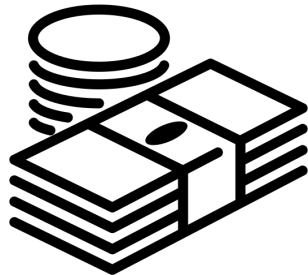
### CHALLENGE

**Decide** how deforestation would affect the nutrient, water and carbon cycles in the tropical rainforest - present your decision as a paragraph or concept map

**Evaluate** how successful you think management strategies for the savanna ecosystems are

# T6

## Development and resource issues



### Geography Knowledge Organiser

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## 6.1.1 - Measuring development

### Measures of development

- Gross domestic product (GDP)** - the total value of all goods and services produced within a country
- Gross National Income (GNI)** - (per capita) average wage per person
- Employment structure** - the type of work people do (for example, primary, secondary, tertiary)
- Poverty** - the % of the population that earn less than \$1.90 a day
- Limitations of these measures**
  - They only measure wealth and not social factors (like life expectancy)
  - They do not show inequality in country (gap between rich and poor)
  - They do not show the cost of living (ie. the amount that can be bought with the average wage)

### Development continuum

A development gap exists between richer and poorer countries. The "Brandt" line splits the world into more developed "global north" countries and less developed "global south" countries.



However, the Brandt line is a bit too simplistic. In reality there is a "development continuum". This is a sliding scale from super rich countries to the very poor. The World Bank splits countries into 4 categories based on their Gross National Income (GNI):

- HICs** with GNI of \$12,736 or above
- Upper Middle Countries** with GNI between \$4126 and \$12735
- Lower middle countries** with GNI of \$1046 to \$4125
- LICs** with GNI of \$1045 or less

## 6.2.1 - Uneven development

### Causes of uneven development

Trade involves buying goods from other countries (imports) and selling them (exports). **HICs** generally export valuable goods such as electronics, cars and financial products. They import cheaper primary products like tea, sugar and coffee. **LICs** do the opposite. This means they earn little and remain in poverty

The prices of these products go up and down but HICs tend to have the biggest influence over them. LICs lose out when the price drops, but have little control over it. Increasing this trade and changing the balance of imports/exports is essential for LICs to develop. Some HICs impose tariffs (import costs) and quotas (a limit to the amount of imports) which also affects LICs.

### Multinational corporations (MNCs)

MNCs have grown as a result of globalisation. Often they are free to decide where they locate many aspects of their company. The headquarters is usually found in a global city such as London. However, other parts of the company can be located around the world. Factors like, government incentives, location of raw materials, labour costs and reduced costs for buildings and land make a difference.



| Advantages of MNCs in LICs                                      | Disadvantages of MNCs in LICs                              |
|---|--|
| Created jobs and improved local skills                          | Investment could be transferred to other countries quickly |
| Pays higher wages than most local Companies                     | They have large demand for energy/water                    |
| Helped attract more MNCs  | They have reputation for workers abuse                     |
| Contributes to tax which helped pay for schools, hospitals etc. | They might undermine national culture                      |



## 6.2.1 - Uneven development

### Tourism

As a result of globalisation the tourist industry has grown rapidly. It now accounts for 1-in-11 jobs worldwide. It is increasingly becoming important for low and middle income countries. Rapid growth is due to:

- Early retirement & higher life expectancy mean people can spend time travelling
- People earn more so have more disposable income
- Modern aircraft make is cheaper and quicker
- The internet allows people to research destinations

**Mass tourism**  
Where tens of thousands of people going to the same resort often at the same time of year



**Enclave tourism**  
Where tourists pay one price and get all travel, accommodation, food and drink in one place



**Cruise holidays**  
Cruise ships sell all inclusive packages



| Advantages of tourism in LICs   | Disadvantages of tourism in LICs  |
|---|---|
| Employs thousands directly and hundreds of thousands indirectly, bringing billions to the economy | Many tourist development are partly owned by foreign companies. Some profits leak (send) overseas                   |
| Tourism is encouraging new skills and improving language skills of locals                         | Jobs are seasonal, many people lose their jobs in the wet or winter season  |
| New services such as transport can be used by tourists and locals                                 | The growth of sex tourism can become an issue in some countries   |
| New national parks are being created to protect wildlife and encourage tourism                    | The arrival of tourists can cause a decline in local cultures, for example loss of language or religious traditions |






## 6.2.2 - Managing development

### Aid

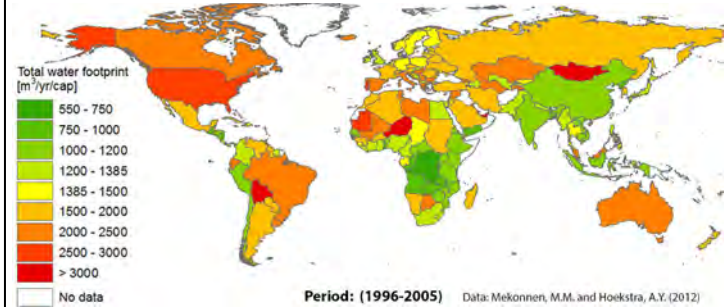
Aid is the transfer of resources from a richer country to a poorer country. Different types of aid include:

- Bilateral aid** – between two countries
- Multilateral aid** – money donated by richer countries via organisations such as the UN
- Short term emergency aid** – immediate relief following a natural disaster
- Long term development aid** – a sustained programme of aid which aims to improve the standard of living
- Debt abolition** – when richer countries cancel debt owed by poorer countries
- Aid from non-governmental organisations (NGO's)** – given through charities such as Oxfam.

| Advantages of aid for LICs  | Disadvantages of aid for LICs  |
|---|--|
| Emergency aid saves lives and reduces misery  | Aid can increase dependency on the donor country   |
| Development aid can lead to long term improvements and increase standards of living       | Profits from the large projects can go to multinationals and donor countries               |
| Assistance in developing natural resources benefits global economy                        | Aid doesn't always reach the people who need it and can be kept by corrupt officials       |
| Aid for industrial development creates jobs and aid for agriculture increases food supply | Aid can be spent on prestige projects in urban areas rather than in the areas of real need |
| Provision of medical training and supplies improves health                                | Aid can be used as a weapon to exert political pressure on the receiving country           |



## 6.3.1 - Water demand



The global consumption of water is rising. This is because:

- Population is rising**
- Economic development** - The more developed a nation the more water used
- Increased need by agriculture** - irrigating crops
- Industrial growth** - As more MNCs invest in NICs and LICs the more water needed
- Consumerism** - HICs use appliances like dishwashers and washing machines

**Water footprint - a measure of humanity's use of fresh water and/or polluted**  
We don't just use water to drink and for hygiene reasons. 70% of our water is used to produce food (crops & animals). Industries use water in 'cooling processes'. Water is need in thing like clothing - fabrics have to be grown.

**Water security - the capacity to safeguard the sustainable availability and access to drinking water**  
The UK generally have excellent access to water all year round. Some places don't, where water isn't clean or always available. Sometimes it's too expensive to transport or access (economic scarcity) or it's not available due to droughts (physical scarcity).

## 6.3.2 - Water sustainability



**Dams:** Dams block the flow of a river, creating a large reservoir to the rear which can be used all year round. Dams can be expensive to build, and the reservoir may flood local settlements and ecosystems.



**Water transfers:** When water is transferred from an area that has a surplus of water to an area that is experiencing a shortage. This may be conducted within a country, but it can also be conducted from one country to another. For example, Lesotho transfers water to areas of South Africa experiencing physical water scarcity.



**Desalination plants:** Desalination is the process by which salt is extracted from water. At these plants, salt is removed from seawater to make it safe to drink. Such plants are extremely expensive to run.



**Water conservation:** This is when an attempt is made to actually use less water in the first instance. For example, many toilets have dual-flush systems to reduce the amount of water used. In addition, meters may be installed within households so residents can check their water usage

### Over-abstraction of groundwater

India is a country that is over extracting its groundwater (the water table is 4m lower than in 2000)

#### Reasons for this

- Some states like Gujarat have a long dry season
- Surface stores (like reservoirs) are often polluted
- Cheap electricity has encouraged farmers to dig deeper wells

#### Solutions

The government can build more dams (this is an example of top down development) Farmers could be encouraged to conserve water e.g. rainwater harvesting (this is bottom up development)

## 6.4.1 - NIC regional development

### India's regional patterns

Northeast has higher levels of poverty (over 30% of people)

South has the least levels of poverty (less than 10%)

The east generally has lower levels of poverty (around 15%)

### Physical reasons

**Northern India** is more mountainous and dry, so it has poor soil and climate to grow crops. **The south** has a more humid climate with rains.



### Political reasons

**Kerala (in the south)** funds education and encourages families to have fewer children = better quality of life (less pressure on resources)

**Kashmir (in the north)** has seen conflicts/wars and is in a mountainous area = not very populated, poor access, dry climate.

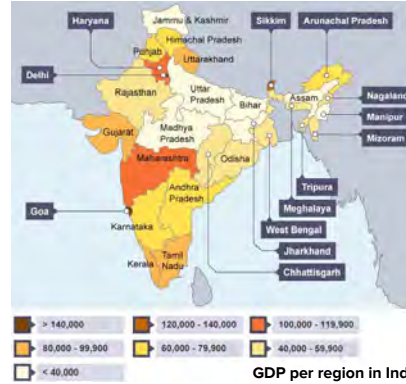
**Maharashtra (in the east)** has the capital city and attracts lots of industries like manufacturing and has ports for trade



### Cultural reasons

India had a **caste system** (some people had more rights than others). Although it's illegal now it still has an impact on people today with types of jobs people can do.

**Girls and women are discriminated** against particularly in rural areas



## 6.4.2 - UK regional development

### UK's regional patterns

There is a north-south divide in the UK for development. The divide recognises the social and economic differences between Southern parts of the UK (more developed) and the rest of the UK (less developed).



### Economic reasons

With the **largest markets located in the south-east**, which also includes **good access to European markets**, companies have greatest potential to **maximise profits by locating in the south**.



### Social reasons

With over 20 million people of the UK's population living within a one hour commute of London, many **businesses prefer to locate themselves close to their customers**, and within **commuting distance of their staff**. **Many universities are in the south** of the UK, including Oxford and Cambridge, which provide many workers - who **employers may perceive as being most skilled** and desirable.



### Political reasons

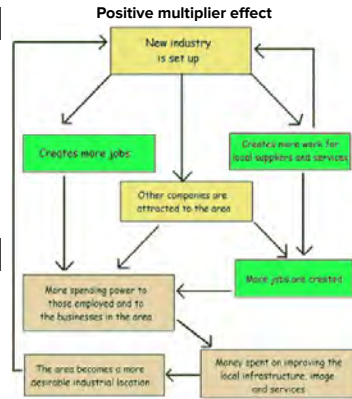
**Many large companies have headquarters (HQ) in the south-east**, making it easier to make crucial decisions. Even though government policy has tried to encourage investment in other parts of the UK it is **still more convenient for other smaller businesses to start up where there is already infrastructure** to support.



## 6.4.3 - Managing UK development

### Positive multiplier effect

Regional inequality can be reduced by investment in deprived areas of the UK. Various strategies have been used in the past which usually includes investing in infrastructure in an area which is deprived to try and promote a **positive multiplier effect**. However, when industries close there is also a **negative multiplier effect**.



### Local strategies (Newcastle)

**Newcastle Enterprise Package** - supporting new business

**Newcastle Science City** - a partnership between Newcastle University, Newcastle City Council and the European Regional Development Fund supporting the innovation and technology sectors

**The Millennium Bridge** - crossing the river Tyne

The **improvement of transport links** to the Northern places in the UK. This improves accessibility, attract new investment and therefore may create a positive multiplier effect (eg. HS2)

**Relocation of major business and offices**, sometimes head offices in other parts of the UK, such as Manchester. This encourages other businesses to invest in the areas

## Home study questions

### DEVELOPING

**Outline** the measures of economic development [3 marks]

**Give** three reasons why LICs receive less money from international trade [3 marks]

### SECURING

**Analyse** the pattern of global water usage (water footprint) (6.3.1) [6 marks]

**Describe** what a water footprint is [2 marks]

### MASTERING

**Evaluate** which factor/reason (social, economic or political) is the most significant cause of UK regional inequality [8 marks]

**Decided** whether foreign aid is overall a good or bad thing for LIC development [8 marks]

### CHALLENGE

**Create** a concept map to show how MNCs and tourism are linked and how these are also linked to uneven development in LICs/NICs

**Research** how the High Speed railway 2 (HS2) project will have benefits for the north of England





# T7

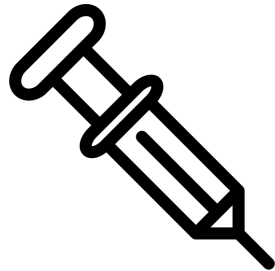
Find a playlist of explainer clips by scanning or clicking the QR code

CLICK ME



SCAN ME

# Social development



Geography Knowledge Organiser

## 7.1.1 - Measuring development

### Measures of social development

- Life expectancy** - The average age a person is expected to live
- Literacy rates** - % of people in a population that can read or write
- Infant mortality rate** - Number of babies per 100 live births who die under the age of 1
- Average number of people per doctor**
- Average food (calorie) consumption**
- Number of homeless people**
- Deaths from unsafe water and sanitation**

### Measures of gender development

Gender equality is ways in which a country can be measured through social development. So a comparison between genders is useful, such as:

- Fertility rate** - The average number of births to a woman in her lifetime
- Male/female literacy rates**
- Male/Female life expectancy**
- Male/female food consumption**
- Male/female employment rate**
- Gender development index (GDI)** - measures gender inequalities in three key aspects: *reproductive health, empowerment and economic status*

### Human development index (HDI)

A measure of the development in a country taking into account wealth, education and average life expectancy. The human development index (HDI) is calculated from four development indicators and measures a country's progress across a range of factors:

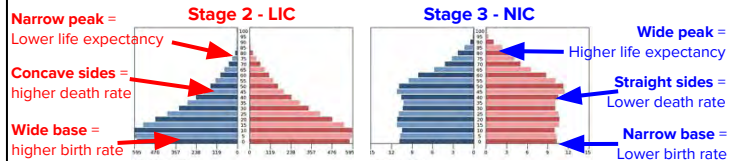
- Average length of schooling in years**
- Literacy rates**
- Gross national income (GNI)** - The average income in a country per person

## 7.2.1 - Development issues in Africa and Asia

### Changing birth rates and death rates

| Higher birth rates   | Lower birth rates   | Higher death rates   | Lower death rates  |
|--|---|--|--|
| Children provide labour on farms (E)<br>Large families are seen as a sign of virility (S)<br>Women may lack education and stay at home to raise a family rather than work (S)<br>A high infant mortality rate encourages larger families to ensure survival of some children (S) | People tend to marry later and therefore have reduced child-bearing years (S)<br>Women are educated and often follow careers which delay starting families (P)<br>The high cost of living means it is expensive to raise children (E)<br>Couples prefer to spend money on holidays & cars (E) | HIV, Ebola and other difficult to control diseases are having an impact on death rates in LICs (S)<br>In HICs, the increasingly higher proportion of elderly people in ageing societies is leading to an increase in death rates (S) | Better healthcare and vaccination programmes are more available to people (P)<br>Less physically demanding jobs put less stress on people physically (S)<br>People are educated about health and hygiene (P)<br>Water supplies are more reliable and cleaner (P) |

### Population structure



## 7.2.1 - Development issues in Africa and Asia

### Child labour

It is estimated that there is currently 168 million child workers and 73 million of these are children under the age of ten. Sub-Saharan Africa has the highest number of child workers mainly working on farms farming products such as cocoa and cotton.

- Poverty** - parents need money or their parents have died
- No (free) education** - have to pay or no formal education
- AIDS** - Disease means a lot of middle-aged people are too ill or have died - so children are the only option



### Primary education challenges

In 2010 there were 4.98 million children in child labour, whereas by 2011 there were 4.35 million child labourers. The lack of education is a key cause of child labour. Out of the 62% of India's children that do not attend school, 62% of those are girls. The reasons for this include:

- Poor quality of school buildings**, facilities and teaching.
- Attitude to women in society**: many families still have an oppressive attitude towards women
- Many girls are expected to marry young** through arranged marriages.
- The **fear that sexual harassment of girls** may bring dishonour to the girl's family.

### Responses to child labour

**The International Labour Organisation (ILO)** - It collects data from different countries and uses this data to set targets which can be used to monitor progress. The ILO then makes recommendation to individual governments as to how this can be achieved in their country which frequently include:

- Improving access to education** for all children so that they can succeed in life
- Creating more trade unions** to prevent and protect against child labour
- Improving social security systems** so that the poorest in society are supported rather than them relying on their children (sick pay & unemployment benefits)

### International refugee movements

Forced migrants are those we call refugees and asylum seekers. They have been pushed out of their homes but there aren't pull factors attracting them to somewhere

- Refugee** - Someone who has fled their home due to serious risk to life or liberty
- Asylum seeker** - Someone who has applied to another country for protection/support as a refugee

### Causes of forced migration

- Lack of food/water** - often causes by droughts or blights (plant diseases)
- Natural disasters** -flooding, earthquakes, tsunamis etc.
- War & conflict** - either between countries or civil war (inside one country)
- Persecution** - risk to life or liberty due to politics, sexual orientation, religion, ethnicity

### Responses to forced migration

- National governments in Europe**
  - Germany and Sweden see the refugees as victims and have welcomed them to their countries and help them to integrate into their societies
  - Austria is trying to limit the number of refugees to 80 a day
  - The UK has agreed to accept 20,000 refugees from Syria by 2020 and it will accept more unaccompanied Syrian child refugees

### International agreements

- With an increasing numbers of migrants from Asia and Africa reaching Europe illegally the following changes have been made:
  - In 2016 border controls were temporarily introduced to 7 Schengen countries
  - An EU naval operation has been put into place to monitor the Mediterranean Sea to prevent human smuggling and trafficking
  - EU member states agreed to provide task forces of national experts and support teams to work in hotspots such as Greece and Italy to expedite refugee screening

## 7.2.2 - Health issues in Africa

### High infant mortality rate (IMR)

**Neonatal infection** - a high rate of infection from the process of delivering the baby 10% of early childhood deaths are caused by diarrhoea  
 The **lack of skilled birth attendants** leads to many children dying within 24 hours of being born  
**Lack of vaccinations** and mosquito nets to stop diseases



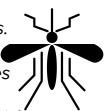
### Human immunodeficiency virus (HIV)

HIV is disease which attacks the body's immune system. Over 70% of people who have HIV live in Africa. Infection rates are higher in urban areas



### Malaria

Malaria is a disease passed on by parasites in mosquitoes. Infection rates are higher nearer water sources like lakes & rural areas. Children and pregnant women are most at risk



- Emotional impact on relatives and families, as well as on the individual (S)
- Cost involved in treating the disease, eg. drugs means that most people go without treatment (E)(S)
- Those infected will not eventually be able to work, lowering the productivity and potential wealth of a country (E)(P)
- Leads to fewer jobs and less wealth in a country (E)
- Children may be left without parents and brought up by their grandparents (S)

- Large number of children aged under five die (S)
- Adults are too weak to work which leads to a loss of productivity (E)
- People remain poor and do not have a lot to eat (S)(E)
- A country's limited resources are used up in health care rather than in education or improving services (E)(P)
- Tourists may be less likely to visit a country so there is less revenue (E)

# 7.2.2 - Health issues in Africa

## Health issues responses



Investment in medical care and treatment in hospitals **(HIV/Mal)**



Health campaigns (adverts) about risks and prevention **(HIV/Mal)**

Free condoms **(HIV)** and mosquito nets for beds **(Mal)**

UN's AIDS Fast Track programme - leading education & funding **(HIV)**



UN's 'roll-back malaria' programme which leads a worldwide government response **(Mal)**



The '**Roll Back Malaria**' initiative had over 500 partners working together to provide a co-ordinated response to the disease. One of the UN's Millennium Development Goals is that the incidence of the disease should have reduced by 2015. Today the UN fast track strategy is aiming to end the epidemic by 2030 through contraception, education and medication.



### Top-down approach

Decisions are made at governmental level and usually involve a high cost. Communities likely to be affected by the decisions have no say as to what is done.

The advantages of these types of schemes are that they may be part of a strategic plan which aims to develop the infrastructure of the country. However, the frequently lead the country into debt and the jobs that are created are often not for the local community.

### Bottom-up approach

Decisions are made by the local communities that they will affect. They try to help communities by helping them to help themselves.

The advantages of these types of schemes are that they are small scale and so cost much less, are more sustainable and usually meet the needs of the local community better.

# Home study questions



## DEVELOPING

**Describe** the economic effects of a low pressure hazard [3 marks]

**Explain** why using HDI is better than GDP or GNI for measuring development [4 marks]

## SECURING

**Analyse** the differences between the stage 2 and stage 3 population pyramids (7.2.1) [6 marks]

**Explain** why infant mortality rate (IMR) is an important factor to judge development [3 marks]

## MASTERING

**Evaluate** how successful the responses have been in stopping international refugee movements into Europe [8 marks]

**Discuss** why poverty and poor development often leads to more child labour [6 marks]

## CHALLENGE

**Discuss** how diseases like HIV and malaria can have significant impacts on a country's social and economic development. Record your discussion as a paragraph or spider diagram

**Evaluate** whether top-down or bottom-up approaches are better for improving the health development of LICs

# Graphic Design



# Year 11 Graphic design Knowledge organiser Spring Term

## Topic: Unit 4 – graphic design portfolio

Knowledge: students learn what a portfolio is and show good examples, explore career paths in graphic design and present their best work in their own portfolio.

Skills: Analysis of the work of others, presentation skills, being discerning of quality design, being critical of their own work.

### LO1

| Grading descriptors   | Example   |
|---|---|
| <b>Pass:</b> Describes relevant opportunities in the graphic design industry and how work is presented  | Learners will describe a range (more than three) of examples of working in graphic industries, different types of presentation methods and promotional formats, and ways to present and promote their work.<br><br>There will be little evidence of how examples of working in the graphic design sector and presentation formats are linked. |
| <b>Merit:</b> Describes relevant opportunities in the graphic design industry and how work is presented, <u>and makes some links between them</u>     | Learners will describe a range (more than three) of examples of working in graphic industries, different types of presentation methods and promotional formats, and ways to present and promote their work.<br><br>There will be some evidence of how examples of working in the graphic design sector and presentation formats are linked.   |
| <b>Distinction:</b> Describes relevant opportunities in the graphic design industry and how work is presented and <u>explains how they are linked</u> | Learners will describe a range (more than three) of examples of working in graphic industries, different types of presentation methods and promotional formats, and ways to present and promote their work.<br><br>There will be an explanation of how examples of working in the graphic design sector and presentation formats are linked.  |

## Different types of Presentation methods

A digital portfolio could take different forms:

- a showreel,
- presentation, (e.g. powerpoint)
- interactive app,
- website,
- a cloud drive
- or folders on a USB drive
- Blogs and social media



Graphic designers often present their work in a Portfolio. A portfolio is a collection of your best work that is used to show to clients to demonstrate your ability and styles. For unit 4 you must compile all of the best work produced in year 10 and 11 and review your skills as a graphic designer.

### LO2

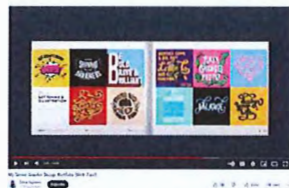
| Delivery and assessment   |
|---|
| In this LO the learner must produce a graphic design portfolio and demonstrate the following skills:  |
| <b>Breadth of work</b><br>Learners must have a minimum of six completed pieces and/or experimental pieces to demonstrate their breadth of work and intentions as a graphic designer. Breadth would be indicated by a range of disciplines (eg typography, advertising, packaging) or by examples of ideas or interpretations of themes. Work may be selected from earlier units to be used if relevant to learner's intentions. |
| <b>Editing and selection</b><br>Learners should review their work, including experimental work, edit it by making adjustments to size, shape or resolution/finish, and make selections for the portfolio. These should be made on the basis of the effective presentation of graphic design skills.   |
| <b>Selection of format</b><br>Learners should select and use the most appropriate format in which to display their work/intentions, eg digital/physical, interactive/static.  |
| <b>Presentation skills</b><br>Learners should demonstrate skill in the effective presentation of their portfolio. Learners will not be credited for quantity of work but for the careful consideration and presentation of the work they have edited and selected.  |
| <b>Reasons for choice</b><br>Learners will record why they have chosen specific pieces of work to include within the portfolio and what these show in relation to their graphic design practice.  |



### LO3

The learner must evaluate:

- strengths and weaknesses
- technical skills
- creative responses
- presentation skills



Follow this link or scan the QR code to a video with great tips on how to design your portfolio.

<https://youtu.be/A22TQsr7Aew>



| Grading descriptors   | Example   |
|---|---|
| <b>Pass:</b> <u>Describes</u> a range of strengths and weaknesses of their graphic design practice with supporting evidence   | Learners have identified a range of strengths and weaknesses, technical skills, creative responses and presentation skills within the graphic design work, making reference to their portfolio.   |
| <b>Merit:</b> <u>Describes</u> a range of strengths and weaknesses with supporting evidence and <u>describes the impact on their graphic design practice</u>  | Learners have identified a range of strengths and weaknesses, technical skills, creative responses and presentation skills within the graphic design work and will describe how these affected their graphic design work.   |
| <b>Distinction:</b> <u>Describes</u> a range of strengths and weaknesses of their graphic design practice with supporting evidence, showing evidence of <u>recognising different levels of importance</u> | Learners have identified a range of strengths and weaknesses, technical skills, creative responses and presentation skills within the graphic design work and will describe how these affected the design work.<br><br>Learners will recognise the levels of importance when describing the impact of different factors upon their design work. |



# Health and Fitness





### Health Component Of Fitness



| Component                       | Definition   | Sporting Example  | Test                  |
|---------------------------------|--|---|-----------------------|
| <b>Muscular Endurance</b>       | The ability of a muscle group to repeat a movement for a prolonged period.   | Push Ups in Circuit Training  | Sit Up Test           |
| <b>Flexibility</b>              | Range of movement around a joint.  | Splits in Gymnastics  | Sit and Reach         |
| <b>Body Composition</b>         | Describes the percentage of fat, bone, muscle and water in the body.   | Endomorph- sumo wrestling<br>Mesomorph- swimming<br>Ectomorph- marathon running | Skinfold Caliper Test |
| <b>Muscular Strength</b>        | The amount of force a muscle can exert against a resistance.   | Weightlifting   | Hand Grip Dynamometer |
| <b>Cardiovascular Endurance</b> | The ability to exercise the whole body for prolonged periods. This involves the cardio (heart) and vascular (blood vessels). | Running at the end of a netball match   | 12 minute cooper run  |

### Sport/ Skill Component Of Fitness



| Component            | Definition   | Sporting Example                       | Test                 |
|----------------------|--|--|----------------------|
| <b>Agility</b>       | The ability to change the position of the body quickly and to control the movement of the whole body | Rugby player dodging a defender        | Illinois Agility Run |
| <b>Balance</b>       | The ability to retain the centre of mass over the body above the base of support                     | Handstand in Gymnastics                | Standing Stork       |
| <b>Coordination</b>  | The ability to use two or more body parts together   | Batsman striking the ball in cricket   | Hand Wall Toss Test  |
| <b>Power</b>         | The ability to undertake strength performances quickly<br>Strength x Speed =                         | The jump phase of the Long Jump        | Standing Long Jump   |
| <b>Reaction Time</b> | The time in between stimulus and the onset of movement   | A sprinter responding to the start gun | Ruler Drop           |
| <b>Speed</b>         | The rate at which an individual is able to perform movement.   | Running the 100m                       | 30 metre sprint      |

# Year 11 Health & Fitness Spring Knowledge Organiser

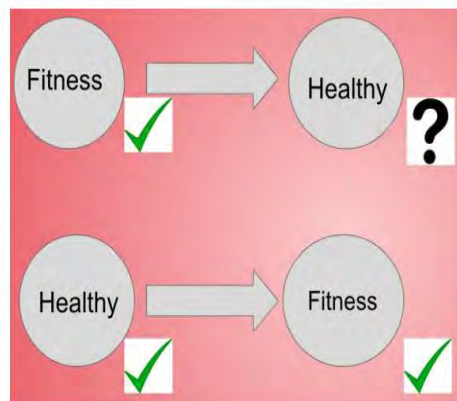
**F – FREQUENCY**    how often you train  
**I – INTENSITY**    how hard you train  
**T – TIME**    how long you train  
**T – TYPE**    type of activity you do

## Health and Fitness

### Definitions

Health - a state of complete physical mental and social well being, not merely the absence of disease.

Fitness - the ability to meet the demands of the environment.



You can be fit and not healthy because you might not have social and mental health.

To be healthy you have to be fit because you need to have the physical side.

- S – SPECIFICITY**
- P – PROGRESSION**
- O – OVERLOAD**
- R – REVERSIBILITY**
- T – TEDIUM**

- **SPECIFICITY**- making the training specific to the needs of the sport or individual.
- **PROGRESSION**- gradually increasing the training that you are doing.
- **OVERLOAD**- doing more training
- **REVERSIBILITY**- any training gains can be lost if training does not continue.
- **TEDIUM**- training needs to keep the athlete motivated.







# Year 11 Health & Fitness Spring Knowledge Organiser

## Diet and Energy Balance

**Balanced diet** - Eating the right foods in the right amounts. This will allow us to exercise and work properly

**Varied diet** - If we don't eat a variety of foods in the correct proportions, we won't get all the nutrients we need to make up a balanced diet



The Eatwell guide shows us what foods we should be eating and in what quantities. E.g. the largest parts of the diet should come from:

- Fruit & Vegetables
- Starchy carbohydrates

Variety is important to get all the necessary nutrients. There are seven nutrients.

- Carbohydrates
- Fats
- Proteins
- Vitamins
- Minerals
- Fibre
- Water

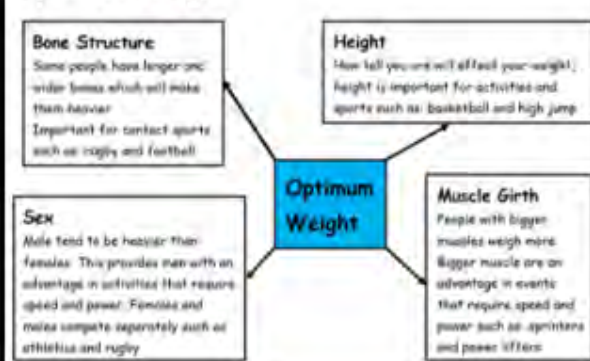
## Energy Balance



The energy balance makes sure the calories we take in is equal to the number of calories we expend.

- If we take in more calories, we will gain weight
- If we take in too little calories, we will lose weight
- We need to have a balance so we have the correct nutrients for energy

## Optimum Weight



## Dietary Manipulation

### Protein intake:

Protein should be consumed as soon as possible after exercise; this increases protein synthesis and therefore muscle growth. This is used by performers such as sprinters, shot putters and power lifters

### Carbohydrate loading:

This strategy involves eating foods high in carbohydrates 1 to 4 days before an event. These increases glycogen stores in the muscle. This is used by endurance athletes such as marathon runners

### Hydration:

Water prevents dehydration, dehydration causes: dizziness, fatigue, heat stroke, muscle cramps, nausea and the thickening of blood. Water should be consumed before during and after exercise

## Macronutrients

### Carbohydrates

#### Function:

- Provide us with energy in both aerobic and anaerobic activities
- Eaten in large quantities compared to other macronutrients

#### Found in:

- Bread, rice, pasta, potatoes



### Fats

#### Function:

- Provide us with energy, is stored in the body and can lead to weight gain
- Should be the smallest percentage of macronutrients in the diet

#### Found in:

- Butter, oil, fatty meats, fried food



### Proteins

#### Function:

- Used for growth and repair, it can provide us with energy
- May be used by athlete for growth and repair of muscles

#### Found in:

- Cheese, milk, eggs, lean meat, fish



## Micronutrients

### Vitamins & Minerals

- Vitamins and minerals keep our body healthy and can improve your immune system,
- Vitamins are found in fresh fruit and vegetables
- Minerals are found in vegetables and meat

**Vitamin D:** Found in dairy products and helps the body absorb calcium

**Calcium:** Found in milk and other dairy products and helps keep our bones strong



### Water

- Water prevents dehydration and is found in most liquids and many foods



### Fibre

- Fibre aids the digestive system and is found in foods such as cereals, vegetables and nuts










# Year 11 Health & Fitness Spring Knowledge Organiser

**Muscular Strength**  
**Test:** Hand Grip Dynamometer Test  
**Protocol:** Grip the dynamometer in one hand. Start with your hand up and bring down to side while pulling in handle. No swinging your hand.




| Advantages  | Disadvantages   |
|---|---|
| <ul style="list-style-type: none"> <li>Simple and easy to complete</li> </ul> | <ul style="list-style-type: none"> <li>Only one size of dynamometer which may affect reading.</li> <li>Focuses solely on forearm strength.</li> </ul> |

**Agility**  
**Test:** Illinois Agility Test  
**Protocol:** Start lying down at the start line. Complete course as quick as possible (10m x 5m – 4 central cones)





| Advantages  | Disadvantages   |
|---|---|
| <ul style="list-style-type: none"> <li>Simple and easy to complete</li> </ul> | <ul style="list-style-type: none"> <li>Motivation dependant / Timing errors.</li> </ul> |

**Muscular Endurance**  
**Test:** 1 minute sit up test  
**Protocol:** Complete as many full sit ups/press ups as possible in 1 minute.




**Test:** 1 minute press up test  
**Protocol:** Complete as many full sit ups/press ups as possible in 1 minute.




| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>Simple test to complete</li> <li>Minimal equipment needed.</li> </ul> | <ul style="list-style-type: none"> <li>Difficult to assess whether each repetition is performed correctly. Difficult to accurately measure large groups.</li> </ul> |

**Speed**  
**Test:** 30m Sprint Test  
**Protocol:** Start from stationery position. Complete distance in the quickest possible time. Time is stopped when chest crosses the line.




| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>Quick test to complete.</li> <li>Minimal equipment needed and can be performed anywhere with a flat 50m run.</li> </ul> | <ul style="list-style-type: none"> <li>Running surfaces/weather conditions can affect the results.</li> <li>Inaccuracies with stopwatch usage.</li> </ul> |

**Flexibility**  
**Test:** Sit and Reach Test  
**Protocol:** Sit with legs straight out in front and soles of feet against box/table. Reach forward without bending knees. No jerking movements.




| Advantages  | Disadvantages   |
|---|---|
| <ul style="list-style-type: none"> <li>Quick and easy to perform.</li> <li>Data table readily available for comparison</li> </ul> | <ul style="list-style-type: none"> <li>Can cause injury if not fully warmed up appropriately.</li> <li>Only measures flexibility of lower back and hamstrings.</li> </ul> |

**Power**  
**Test:** Vertical jump Test  
**Protocol:** Stand next to wall and mark an initial reach while feet are flat on the ground. Standing jump to reach as high as possible. Measure distance from first mark to second.




| Advantages  | Disadvantages  |
|---|--|
| <ul style="list-style-type: none"> <li>Quick and easy to perform.</li> <li>Easy to complete with large groups.</li> </ul> | <ul style="list-style-type: none"> <li>Technique plays a large role in successful completion.</li> </ul> |

**Cardiovascular Fitness (Aerobic Endurance)**  
**Test:** 12 min Cooper Run  
**Protocol:** Continuously run/swim for 12 minutes. Distance recorded.



| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>Minimal equipment needed</li> <li>Test can be self administered.</li> </ul> | <ul style="list-style-type: none"> <li>Inaccuracy of heart rate measurements</li> <li>Motivation dependant</li> </ul> |

**Reliability /Validity**  
**Validity** relates to whether the test actually measures what it sets out to measure.  
**Reliability** is a question of whether the test is accurate. It is important to ensure that the procedure is correctly maintained for ALL individuals.



**Results can be improved:**

- By using experienced testers & calibrating equipment
- Ensuring performers have the same level of motivation to complete each test
- Repeatedly test to avoid human error (x3)

**Test:** Harvard Step Test  
**Protocol:** Step continuously for 5 minutes. Measure heart rate at 1, 2 and 3 minutes after exercise.



| Advantages  | Disadvantages  |
|---|--|
| <ul style="list-style-type: none"> <li>Simple test to complete</li> </ul> | <ul style="list-style-type: none"> <li>Motivation dependant</li> </ul> |





# Year 11 Health & Fitness Spring Knowledge Organiser

| Warm up and cool down  |
|--|
| <p><b>Warming up should include:</b></p> <ul style="list-style-type: none"> <li>gradual pulse raising activity</li> <li>stretching</li> <li>skill based practices/familiarisation</li> <li>mental preparation</li> <li>Increase amount of oxygen and blood to the working muscles</li> <li>Increase in mobility through full range of movement at the joints</li> <li>Dynamic movements</li> <li>The speed of muscle contraction</li> </ul> <p><b>Cooling down should include:</b></p> <ul style="list-style-type: none"> <li>Low intensity exercises</li> <li>maintain elevated breathing and heart rate, eg walk, jog</li> <li>gradual reduction in intensity</li> <li>stretching</li> </ul> <p><b>The benefits of warming up:</b></p> <ul style="list-style-type: none"> <li>effect on body temperature</li> <li>range of movement increased</li> <li>psychological preparation</li> <li>practice of movement skills through the whole range of movement</li> <li>Injury prevention.</li> <li>Increased blood flow and O2 to the muscles</li> </ul> <p><b>The benefits of cooling down:</b></p> <ul style="list-style-type: none"> <li>allowing the body to recover</li> <li>the removal of lactic acid/CO2/waste products</li> <li>Prevent delayed onset of muscle soreness (DOMS) - the pain felt in the muscles the day after exercise.</li> <li>Lowers heart rate</li> <li>Circulation of blood and O2</li> <li>Lowers body temperature</li> <li>Aids recovery by stretching muscles</li> </ul> |

| Types of training   |  |  |   |
|---|--|--|---|
| <p><b>Circuit training</b><br/>A series of exercise stations whereby periods of work are interspersed with periods of rest. The content/demand of the circuit can be altered in order to improve different components of fitness.</p> | <p><b>Continuous training</b><br/>Sustained exercise at a constant rate (steady state) without rests, involving aerobic demand for a minimum of 20 minutes, eg running, swimming, rowing, cycling. It improves cardio-vascular fitness. Sometimes referred to as a steady state training.<br/>Appropriate to marathon runners.</p> | <p><b>Fartlek training</b><br/>Swedish for 'speed play'. Periods of fast work with intermittent periods of slower work. Varying speed, terrain and work:rest ratios. Often used in running; sprint, jog, walk, jog, sprint, etc.</p> | <p><b>High intensity interval training (HITT)</b><br/>Alternating periods of short intense anaerobic exercise with less intense recovery periods</p>  |
| <p><b>Weight training</b><br/>The use of weights/resistance to cause adaptation of the muscles.<br/>Chose appropriate weight/exercise depending on fitness aim, eg strength/power training or muscular endurance</p>                  | <p><b>Weight training</b><br/><b>One rep max:</b><br/>The maximal amount that can be lifted in one repetition by a muscle/group of muscles (with the correct technique).<br/><b>Repetitions:</b><br/>The number of times an individual action is performed. A set is a group of repetitions.</p>                                   | <p><b>Interval training</b><br/>Periods of training/work that are followed by periods of rest or low intensity exercise.</p>   | <p><b>Plyometric training</b><br/>Use of plyometric exercises eg bounding, depth jumping, to increase power. It includes an eccentric contraction (lengthening of the muscle) followed by larger concentric contraction (shortening of the muscle).</p> |

## PARQ

A PARQ is a Physical Activity Readiness Questionnaire:

- One of these should be completed by anyone who is wishing to undertake a new physical training programme.
- It is a self-screening/ assessment tool to indicate any potential reasons why someone may not be suited to training, or particular activities.
- It looks at medical and injury history.
- It is designed to try and help highlight any possible underlying health issues.
- May also look at emotional, mental and social factors affecting the participant, especially those which might impact on them performing regular exercise in public spaces or gyms.
- It asks the participant for general health information, usually around diet, alcohol consumption, smoking history.
- Typically used by personal trainers or sports coaches to help determine the suitability and safeness of a client or player taking part in a training programme.



# Health and social care

LO2: Understand the impact of discriminatory practices on individuals in health, social care and child care environments.



## Discriminatory Practice:

**Discrimination:** when people judge others based on their differences and use the differences to create disadvantage or oppression.



## What is discriminatory practice?

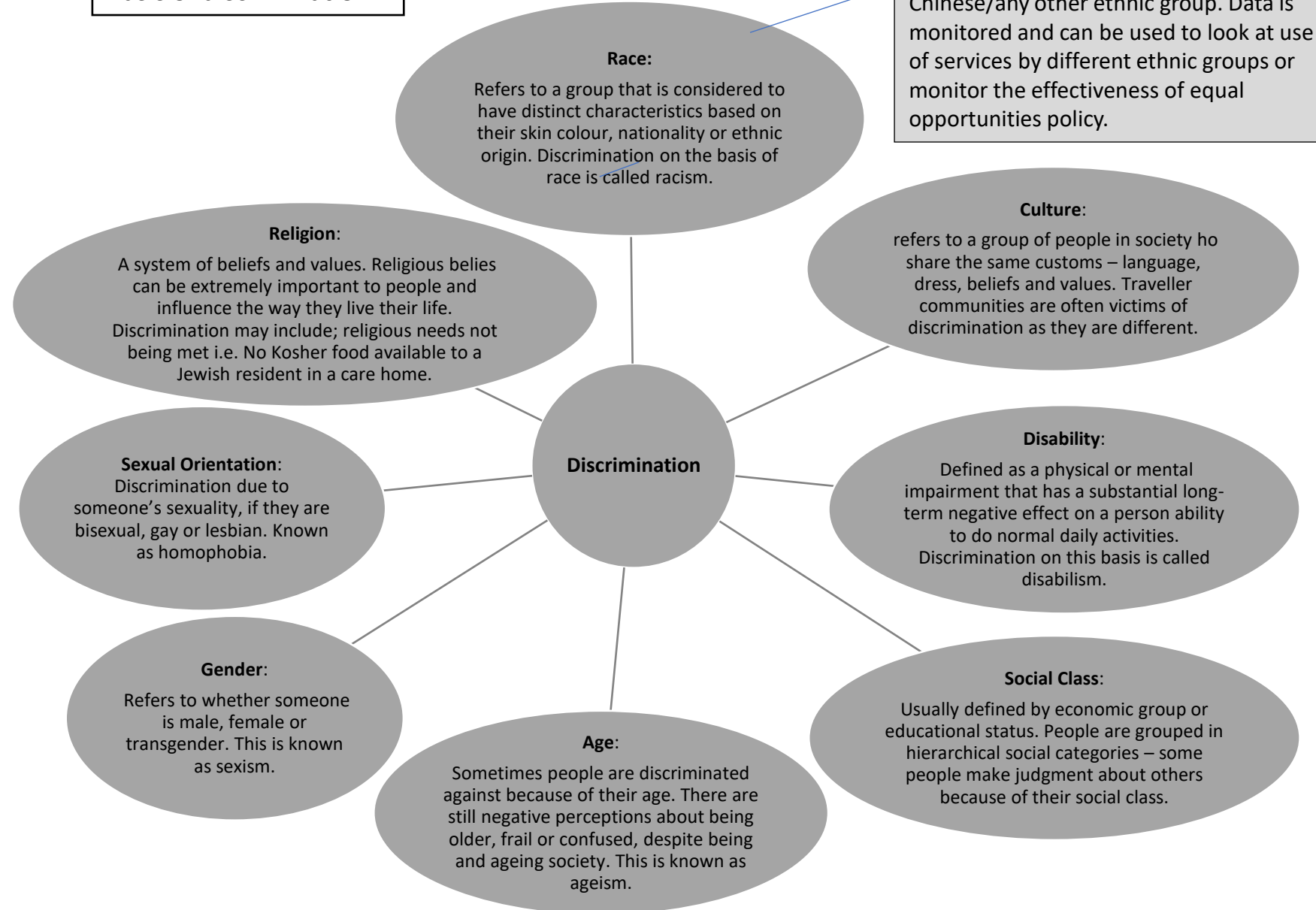
- Discriminatory practice involves treating someone unfairly or less favourably compared to others.
- Can take many forms; excluding someone from activities, physical abuse or verbal abuse.

## Direct & Indirect Discrimination:

**Direct:** intentionally putting someone at a disadvantage or treating them unfairly based on their differences. i.e. A woman told she cannot have a job because she is female is a victim of sex discrimination.

**Indirect:** When a policy, practice or rule applies to everyone, but can have a detrimental effect on some people. i.e. If a job advert said male applicants must be clean shaven, this would discriminate against me whose religious beliefs prevent them from shaving their beards.

## Basis of discrimination



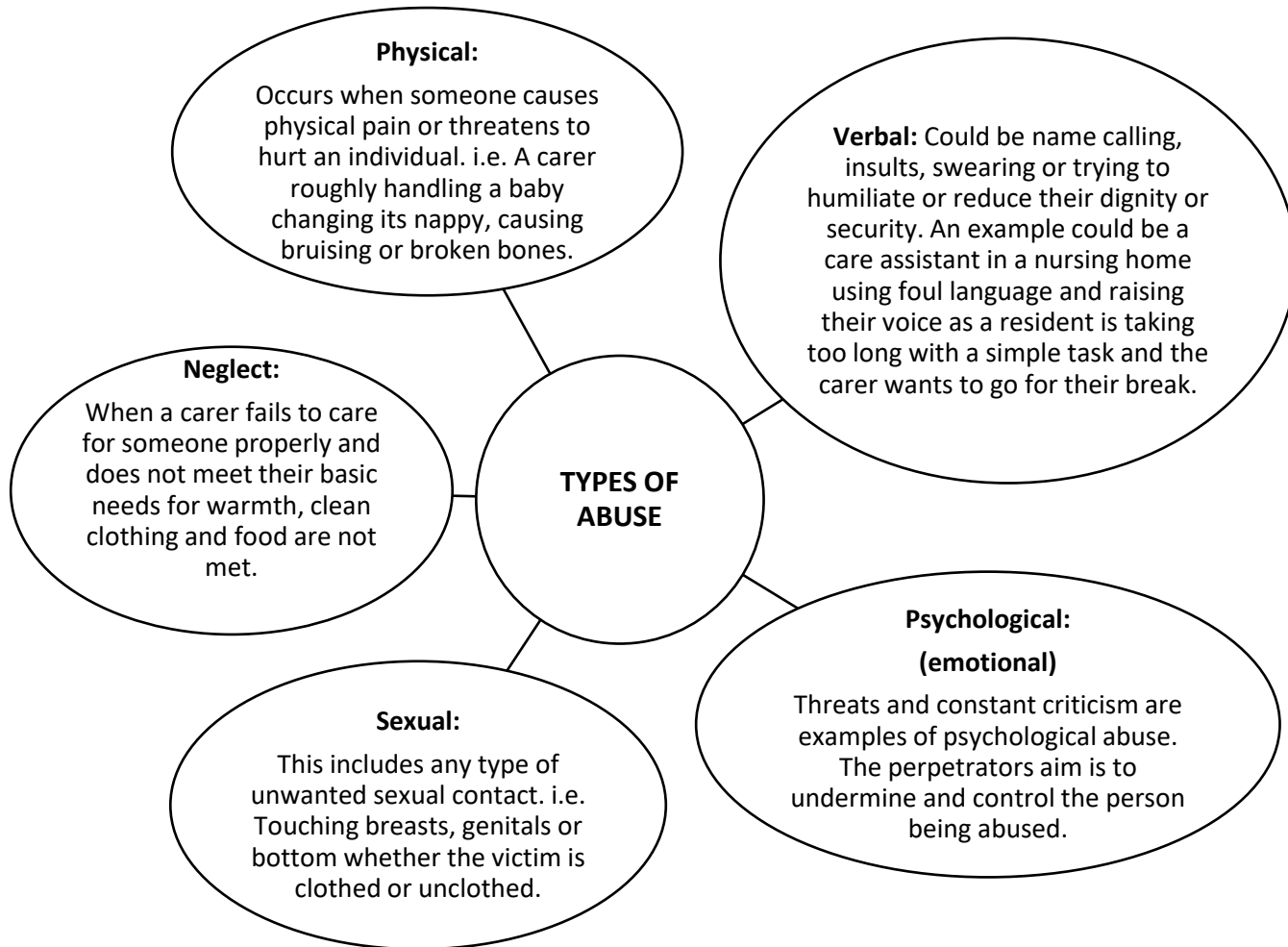
The NHS, emergency services and local authorities ask people to classify their race as; White, Black, Asian, Mixed Race, Chinese/any other ethnic group. Data is monitored and can be used to look at the use of services by different ethnic groups or to monitor the effectiveness of equal opportunities policy.

# ABUSE

## Types of Abuse:

The term 'abuse' refers to a wide range of negative and harmful ways of behaving.

## Types of abuse in health, social care and child care environments:



## 2.1. Terms you need to be familiar with:

- Prejudice** - when someone has a negative attitude towards or an unfair dislike of an individual or group of people. It is often based on poorly informed opinion or inaccurate information. i.e. Racial prejudice or people being punished because of their sexual orientation.
- Stereotyping** - making judgements about a person or groups of people based on prejudices. Making unfair assumptions that people with certain characteristics are the same. i.e. Midwives are always women or girls better behaved than boys.
- Labelling** - to identify people negatively as part of a particular group. Making the assumption they are all the same. i.e. All old people are frail and need looking after.
- Bullying** – threatening, intimidating, humiliating or frightening others. It is repeated behaviour intended to physically or psychologically hurt. It is more likely to occur in a situation where someone is in a position of power, like a manager or when an individual is dependant on a care worker or relative

## Who is affected?

There are three main groups of individuals who can be affected by discriminatory practice in health, social care and child care.

| Individuals requiring care & support  | Family, friends, relatives of individuals  | Practitioners   |
|---|--|---|
| Patients<br>Clients<br>People with disabilities<br>Babies<br>Children<br>Young adults<br>Older Adults | Parents<br>Grandparents<br>Sons & daughters<br>Step-family members<br>Best friends<br>Neighbours | Nurse<br>GP<br>Physiotherapist<br>Midwife<br>Health visitor<br>Social worker<br>Care assistant<br>Counsellor<br>Nursery assistant |

## Impact of discrimination on individuals.

Being discriminated against can have a negative impact on an individual in all areas of PIES and this can lead to health problems and social exclusion.

### Disempowerment:

Those that have suffered discrimination can feel disempowered. They can feel a lack of control in their life, especially if they are in a residential care environment as they are dependant on the carer who may be abusing them.

### Low Self-Esteem & Low Confidence:

Discrimination can destroy self-esteem and self-confidence leaving an individual feeling worthless.

### Poor Health and Well-being:

A persons health and well-being may be affected, they may become withdrawn and isolate themselves to avoid the situation., as they may be frightened of more discrimination. Or ill treatment.

Health problems can develop including; high blood pressure and anxiety. If an individual is already ill, their condition may deteriorate or their recovery be delayed.

Physical abuse can have serious and in some cases fatal consequences.

Effects are interrelated and don't occur in isolation. i.e. If a nurse experiences bullying in the work place, it can lead to a loss of concentration when completing tasks as they are worried and stressed. The nurse may become withdrawn socially and not want to go to work or become agitated or aggressive with colleagues or patients. This may reduce confidence causing more emotional effects like the nurse becoming frustrated and having low self-esteem.

### Unfair Treatment:

Individuals may not receive the care that they are entitled to and instead have to struggle to manage their daily lives to may not achieve their potential as they are not receiving the support they should be. They may feel marginalised and excluded from taking part in things due to discrimination making them feel unwanted.

### Effects on mental health:

Examples include depression, anxiety, self harming, developing and eating disorder, behaviour changes; such as becoming aggressive, becoming uncooperative, withdrawn or socially isolated.

### LO1 and LO2 Exam Tips:

- Make sure you can define equality and diversity.
- Make sure you know the six rights – choices, confidentiality, protection form abuse and harm, equal and fair treatment, consultation and right to life. (you have to be able to name them correctly!)
- If you are asked to identify the values for health and social care services, you must always include 'maintaining' or 'promoting' – miss the word and you lose the mark!
- Make sure you can give examples of applying the values of care – they are mostly interchangeable but you won't get marks for repeating them. For example. Providing food that meets cultural and religious needs is an example of a care setting supporting an individual's rights and beliefs and also value diversity – it should only be used for one.
- If a question asks you to describe 'ways' then you must write about two or three ways correctly to achieve the higher marks. If you only describe one, you're limited to half marks.
- Make sure you can give examples of the type of help and support advocates support groups and informal carers can provide for individuals.
- Effects can be physical, emotional, intellectual or social and are interrelated (they affect each other). For example, a child who experiences bullying may be cut and bruised as a result of an attack (physical effect). This can cause them to lose concentration and not achieve their potential in lessons (intellectual effect) due to being scared and stressed (emotional effect). This in turn may make them not want to attend school (social effects).



# History

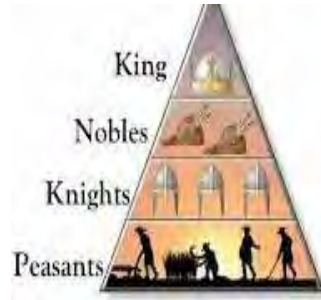
# GCSE History- Knowledge Organiser - Conflict and Upheaval 1337 - 1381 - Key Question 1 - English Society

## Key Terms

|               |  |
|---------------|--|
| Feudal System | The system of sharing land to share control and power  |
| Rural         | Countryside and villages   |
| Agriculture   | Farming  |
| Monarchy      | The King or Queen and Royal family   |
| Villeins      | Peasants - Farm workers who did not own any land   |
| Cottars       | The poorest type of villein  |
| Clergy        | People who worked for the church e.g. priests and monks  |
| Catholicism   | The only type of Christianity in the 14 <sup>th</sup> Century - Catholics were led by the Pope |
| Lollardy      | Lollards challenged the Catholic Church by asking for an English Bible                         |
| Monopoly      | Having full control over something   |
| Flanders      | A country in Europe where modern Belgium is. It was very rich and based around trade           |
| Wool Trade    | The buying and selling of sheep wool   |

## What was England like in the 14<sup>th</sup> Century?

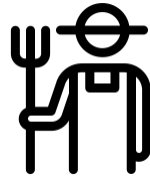
### Society



The Feudal System was used to control England. The King owned all land and shared it with his Lords in return for loyalty. They could then share it with knights for loyalty and resources and the Villeins were given jobs on the land in return for money.

Most people lived rurally and worked in agriculture. There were only 2 towns in England: London and York.

There were roads left by the Romans which could be used to travel but this still took time as all travel was by foot or horse back.



### Wool Trade



Most of England's wealth came from the Wool Trade. It had large areas of agricultural land dedicated to the raising of sheep. It also had large numbers of people working as weavers to turn the wool into wool which could be used to produce cloth and clothing.

King Edward III used the wool trade to create an alliance with Flanders. He granted Flanders a monopoly over English wool meaning they were the only people who could sell it. This was good for England as it gave them a rich ally but bad for the wool trade as it meant they could not sell their own wool!



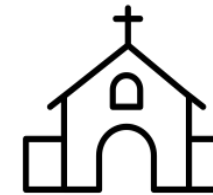
### Church



England was a Catholic country focused on Christianity. The Church controlled peoples beliefs and how they behaved (Bad behaviour made it more likely that your soul would not enter heaven).

The church was also the largest employer as it owned large areas of land for farming and the wool trade.

Priests carried out a number of duties in the community as did monks and nuns. The Pope was the head of the Church and more powerful than any monarchy as he was God's representative on Earth.



### Women

Women were seen as the property of men. Your father owned you and made all decisions for you until you were married and then your ownership transferred to your husband. The only women not controlled in this way were nuns who gave their lives to work for the Church.

Poor women worked alongside the men as farm labourers as well as looking after their families and homes. Rich women were taught to read and write as a symbol of their wealth and their lives revolved around having children to produce heirs for their husbands.



# Interactive Media



## R093: Audience demographics and segmentation

The target audience is the set of people who media products are aimed at.

### Location

If a local cake shop is only able to deliver cakes up to 10 miles away, the target audience's location would be people who live within 10 miles of the shop. Products may have a target audience that is local, national or international.

### Occupation

An occupation is the type of job that an audience does. When segmenting by occupation and audience, the category may be broad, for instance, middle income earners who work in an office.

### Education

Audiences are often segmented by the highest level of education they have achieved such as GCSEs, A Levels or degrees. Some publications may specifically aim at an audience with specialist knowledge in an area.

### Ethnicity

Ethnic groups are defined as a group of people who have common culture, country, religion or language. Media products may focus on a particular ethnicity. It is important not to offend or alienate anyone which the content of a media product.

### Interests

By understanding the hobbies and interests of an audience, media producers can identify what engages them. For instance, an outdoor adventure company has established that most of their customers enjoy horse riding, this is something they might promote on a leaflet.

### Age

Age groups may be clearly defined, such as 18-24, or use descriptive terms such as 'teenagers' or 'retired people'.

### Gender

Media products may be aimed more towards one gender than another. It is important that advertising and designs do not stereotype gender roles even if the target audience for a product is more likely to be one gender.



## Keywords

- Target audience
- Segment
- Occupation
- Ethnicity
- Education
- Interests
- Age groups
- Gender



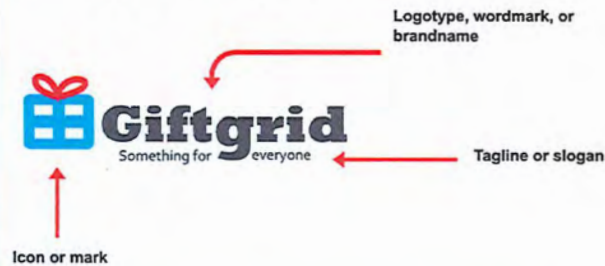
## R094: Components of visual identity

A visual identity gives customers or users a feeling and perception of the brand, product or service. It helps to visually communicate the values and personality of the brand with audiences or customers.

### Branding

The following are the components that you need to consider when creating a visual identity

- ⇒ Logo—words and/or images to represent the brand
- ⇒ Brand name
- ⇒ Slogan or strapline—a short memorable phrase



### Assessment support

You will need to produce a logo to obtain marks for your visual identity in Task 1.

### Keywords

- Logo
- Brand name
- Slogan/strapline
- Typography
- Graphics
- Colour palette
- Layout

During the assessment: ⇒ Graphical style  
⇒ Typography

When creating your visual identity, you will be asked to 'design a visual identity'.

You need to decide which parts of visual identity are required for the product you have been asked to make.

Areas you should consider include:

- ⇒ Logo
- ⇒ Name
- ⇒ Slogan

⇒ Colour palette  
⇒ Layout

You will need to show evidence for this in your planning documents such as mood boards, concept sketches, mind maps and visualisation diagrams. Your report will also allow you to record any justifications or decisions.

### Elements of visual identity

The following elements help to create a visual identity:

#### Typography

The style of text used

#### Graphics

This includes photos, images, illustrations, shapes and symbols

#### Colour palette

The particular group of colours or colour scheme that is to be used across all products

#### Layout

Layouts may be simple or complex. You will need to consider the audience and purpose of the product to decide which is appropriate



## R094: Concept sketch

A concept sketch is a series of simple freehand drawings or sketches that are used to develop an idea. This may also include some annotations with brief explanations of colour of the design itself.

Concept sketches are a good way to get basic ideas down on paper. As multiple ideas are created side by side. It is also a good way to compare and consider different potential ideas and select those that can be developed further.

### Features of a concept sketch

- Sketches are brief, usually just outlining the ideas.
- These give the feel of the idea rather than any detailed response to the brief.
- Commonly drawn in pencil or pen to quickly create multiple concepts.

### Example of a concept sketch for a logo design



### Keywords

- Concept sketch
- Drawing
- Sketch
- Idea
- Develop



### Assessment support

A concept sketch is great for showing how you have developed elements of the identity or final graphic. For instance, you may create a concept sketch to show how you developed a logo. All these sketches should be photographed or scanned and added to your report or evidence folder.

You may create concept sketches to show the development of your ideas for your visualisation diagram.



## R094: Concepts of graphic design

### Graphic design concepts

You should consider the key concepts of graphic design before you plan your final product, including:

Application of visual identity

Typography

Alignment

Use of white space

Use of colour and colour systems

### Colour trends

#### Pantone

Pantone is a system that allows colours to be precisely matched. For instance, one spot of colour on a logo may be specified with a pantone colour.



#### NCS (Natural colour system)

This system allows colours to be specified using the way colours are perceived.



### Colour systems

Colours are represented in graphic design using a number of different systems. When setting up a graphic you should choose the most appropriate setting.

|   |   |   |   |  |
|---|---|---|---|--|
| PMS: 2172<br>PMS: 2173<br>CMYK: 86 / 42 / 0 / 0<br>RGB: 66 / 130 / 208<br>HEX: 4282D0 | PMS: 2945<br>CMYK: 100 / 53 / 2 / 16<br>RAL: H 260 L 30 C 35<br>RGB: 41 / 88 / 140<br>HEX: 29588C | PMS: 2945<br>CMYK: 100 / 53 / 2 / 16<br>RAL: H 260 L 30 C 35<br>RGB: 41 / 88 / 140<br>HEX: 29588C | PMS: 3245<br>CMYK: 22 / 61 / 14 / 14<br>RGB: 112 / 191 / 195<br>HEX: 70C0C3 | PMS: 3017<br>CMYK: 31 / 45 / 11 / 11<br>RGB: 246 / 151 / 61<br>HEX: F99933 |
|---|---|---|---|--|

Wilhelmst Blue

### Keywords

- Graphic design
- Application of visual identity
- Typography
- Alignment
- White space
- Colour and colour systems

### Colour modes

#### RGB



#### Red Green Blue

This corresponds to the pixels on a screen. It is used for television and web images.

#### CMYK



#### Cyan magenta yellow key (black)

Each colour corresponds to the ink colour used in the print process. This is used in print products such as books,

### Assessment support

Having consistent graphic design concepts help to make your visual identity and final product more cohesive. Ensuring you are well prepared in the pre-production stage will allow the exam board to understand your way of thinking.



## R093: Health and safety

During all phases of a media production, any health and safety risks and hazards must be considered. Workers need to be mindful of hazards whether they are working at a computer, using photographic equipment or working on a film or television production.

A location recce is a visit to a location that might be used for photography, filming or recording. The purpose of the visit is:

- To check the safety of the site, that the site is accessible and that permission to use the site can be obtained
- Check sound issues—for example, is there any background noise such as heavy traffic
- Check lighting issues—for example, a large building may block the sun from reaching the location, additional lighting will be required
- Check facilities, such as toilets and parking areas
- Decide which shots and camera movement will work with the location

Detailed notes will be made and a series of photographs will be taken to show the potential location from all angles and times of day from reference. This provides information on the suitability of the location and helps to establish if there are any issues with safety and access that need to be incorporated into a risk assessment.

Anywhere where media people work, including where crew, actors or the public will be affected, must have a risk assessment. This is a document that identifies potential risks, their likelihood, the harm associated with the risk and how each risk will be

### Risk Assessment

|               |  |               |             |
|---------------|--|---------------|-------------|
| Site Name     |  | Risk-A number |             |
| Project       | Stay With Me - Music Video             | Name          | Jade Clarke |
| Location      | Outside, school site and James' house. | Assistants    |             |
| Date Assessed |  |               |             |

| What hazards have been identified? | What are the potential injuries or damage?<br>Severity (1, 2 or 3) | What measures have been taken to prevent injury or damage? | Number of people at risk | What additional measures or actions are required? | Who is responsible for action? | R |
|------------------------------------|--|--|--------------------------|---|--------------------------------|---|
| Using a longboard                  | 2, falling off board   | Using someone with experience to use this prop             | 1                        |   | Daniel, the main character     | 1 |

## Keywords

- Recce
- Health and safety
- Risk assessment

## Location recce



## Risk assessment

### QR codes





## R093: Health and safety

During all phases of a media production, any health and safety risks and hazards must be considered. Workers need to be mindful of hazards whether they are working at a computer, using photographic equipment or working on a film or television production.

### Examples of risks in television or film production

#### Moving objects

There are many ways that objects move to create hazards, for example a camera moving through the air or a car chase scene.

#### How to reduce risk

Get permission to close roads or walkways, make sure operators of cranes are trained and certified

#### Electrocution

If devices fail or are incorrectly wired, they may create a risk of electrocution.

#### How to reduce risk

Maintain equipment, only use qualified and trained crew, protect cables from being cut or damaged

#### Trip hazards

Equipment, such as lighting, will have many electric cables. A track for a dolly camera will also cause a tripping hazard.

#### How to reduce risk

Cable protectors, mats and ramps over cables, cables will be taped down with gaffer tape (thick strong tape)

#### Heavy equipment

Care needs to be taken when transporting heavy equipment such as lighting or cameras.

#### How to reduce risk

Equipment is transported in flight cases that may have wheels, staff are trained in how to safely move equipment

### Examples of risks when using computers

#### Neck/back problems

Having displays at incorrect heights or sitting with bad posture may lead to serious back or neck problems.

#### How to reduce risk

Have display directly in front of the chair, use a fully adjustable chair, have the display at eye level.

#### Eye strain

Looking at a display for a long time may result in headaches and aching eyes

#### How to reduce risk

Look away every 20 minutes, take longer breaks every 2 hours, use the computer in a well lit room.

## Keywords

- Health and Safety Act
- Hazard
- Equipment
- Halm
- Reduce
- Risk

### QR codes





## R093: How style, content and layout are linked to the purpose

A media product usually has a purpose or reason for its development. Some media products will have more than one purpose. The purpose is closely linked to the type of media product.

### Advertise

There are a wide range of media products with this purpose including print adverts such as billboards, posters and leaflets, TV/radio advertising as well as online banner advertising on websites and social media.



### Entertain

Most people spend a large amount of time each day being entertained by media products including TV shows, films, radio broadcasts, books, apps and computer games.

### Educate

Many media products aim to educate. Textbooks combine text, images and photos and are suited to independent study and revision. eLearning products are able to add interaction and video to the learning experience. Apps and games are able to teach through play.



### Inform

Posters are often used to display information such as your location on a map in a theme park. Information leaflets on health or financial products also help to inform.

### Influence

Media products often aim to influence behaviour. This may be used as part of advertising. It may also be used by governments or schools to promote healthy or safe behaviours.



## Keywords

- Purpose
- Advertise
- Entertain
- Educate
- Inform
- Influence





## R094: Mood board

### Mood boards

A mood board is a collection of images, text and colours that generate ideas for the look and feel of the product. They can be digital, (created on a computer), or physical.

A mood board is unlikely to include images used in the final product, but instead is there to give an idea for the theme, based on the client brief.

A Mood board is a key part of the planning process and should be created when planning the visual identity for the graphic product.

### Creating mood boards

When gathering content for the mood board, aim for a good variety of images, text that illustrates the typography and colours that will give a clear idea of the intended colour palette for the visual identity and digital graphic.

When creating your mood board, use all available space and fill the page. If creating a digital mood board, Photoshop, Affinity Photo, Word and PowerPoint are all examples of appropriate software for achieving this.

A physical mood board may also contain examples of textures and fabric. A digital mood board may contain photos of these.

If you produce a physical mood board, you will need to take a photo of it or scan it to submit it to the exam board.

### Physical mood board



### Digital mood board



### Keywords

- Mood board
- Colour
- Physical
- Digital

### Assessment support

A mood board will probably be the first planning document you create as it helps to give a feel for the visual identity of all other planning documents you will make. A mood board will include graphics and photos that give a feel for the visual identity, not ones that you will use in the final product.





## R093: Properties of image files

When using image files, you must consider where it will be used as this will alter the technical requirement of the image. For instance, an image used in a printed magazine will need a very high resolution.

### Resolution

Resolution is the number of pixels in a given area. It is measured as dots per inch (DPI) for print images and photographs and pixels per inch (PPI) for screen images.

The higher the PPI/DPI the higher the quality image

Printed documents such as books and posters typically use a resolution of 300 DPI. This means that there will be 300 printed dots in 1 inch of the printed document.

Web pages typically use images with a resolution of 72 DPI.

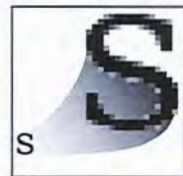
This is the measurement of an image in pixels. It is calculated by multiplying the pixel width by the pixel height. In this example, the image measures 500 wide and 300 pixels high so it has 15,000 pixels in total. A 10 megapixel camera will have 10 million pixels in one photo.



### Pixel dimensions

### Vector images

Vector images are made up of shapes such as lines, curves and fills. Files are small in size and can be made bigger or smaller without affecting the quality of the image. They are commonly used for icons, logos, diagrams, animations and illustrations. SVG images are vector images.



GIF, JPEG, PNG

Bitmap images, also known as raster images are made of small squares called pixels. File sizes tend to be larger. Images can be made smaller on the screen but if they are enlarged, they will become pixelated or blurry. Bitmap images are widely used in photographs. JPG and TIFF all use bitmap images.

### Bitmap images

### Keywords

- Resolution
- Dots per inch (DPI)
- Pixels per inch (PPI)
- Pixel dimensions
- Static file format
- JPG
- PNG
- SVG
- TIFF
- Vector
- Bitmap

### QR codes





## R094: Visual identity design style

A visual identity gives customers or users a feeling and perception of the brand, product or service. It helps to visually communicate the values and personality of the brand with audiences or customers.

### Business type and brand values

A visual identity design style should reflect the type of business or organisation that it represents. It should help to communicate the values and core principles of the brand.



### Comparison of visual identity

Kids Zone offer holiday clubs to young children. They wanted to create a visual identity that communicated feelings of fun, activity and creativity. They made use of bright colours as these would be attractive and appealing to children. The typeface chosen uses a playful decorative font.

By contrast, Royal Swan wanted a visual identity that showed an elegant and refined hotel.

They made use of a gold colour on the swan to suggest luxury. A contrasting dark blue colour was chosen to help give reassurance and trust in the brand. The chosen logo uses simple lines to help give a feeling of a clean, elegant design that is memorable. The choice of a serif typeface for the title helps to communicate a traditional atmosphere, whilst the use of the sans-serif typeface for the strapline 'Boutique Hotel' suggests a modern twist.

### Brand positioning

The brand's position in the marketplace can also be reflected in the visual identity in the visual design style. The style will change depending on whether a brand positions itself as an economy, mid-range or luxury brand.

Notice the visual identity of a brand of baked beans in a supermarket. A standard font, simple graphics and white background all help to give the feeling of an economy brand.

By contrast, a luxury brand of beans may have a stylish label that has been well designed.



## Keywords

- Values
- Position
- Economy
- Mid-range
- Luxury brand

### During the assessment:

As you develop your product's visual identity, you will need to justify your design choices. Justifying means that you have fully explained your reasons for doing something.

You may do this by annotating designs and/or producing a report.

An advantage of creating a report is that all your evidence will be in one place.

It's a good idea to make a report at the start of the product so that you have somewhere to put everything.



## R094: Purpose of a visual identity

A visual identity gives customers or users a feeling and perception of the brand, product or service. It helps to visually communicate the values and personality of the brand with audiences or customers.

Brands with a strong visual identity have an emotional connection with users and customers. The visual identity helps to establish a brand, make it stand out and develop brand loyalty over time.

A strong visual or brand identity is important to help customers recognise the brand. A brand's visual identity, including logos, colours, fonts and tone of voice, will be used throughout all of a brand's media products, from their company letterhead to their billboard poster or website. Companies usually have a set of brand guidelines to achieve this. Consistent use of this house style creates familiarity and ensures that the audience or customer recognises and remembers a brand.

### Keywords

- Visual identity
- Brand
- Loyalty
- Brand guidelines
- House style

### During the assessment:

As you develop your product's visual identity, you will need to justify your design choices. Justifying means that you have fully explained your reasons for doing something.

You may do this by annotating designs and/or producing a report.

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## R093: Work planning and documents used to support ideas generation

A mind map or spider diagram is a way to plan out thoughts and ideas in an organised way. A mind map can be created digitally or be hand drawn.

### Purpose of a mind map

- The purpose of a mind map is to outline ideas quickly
- A mind map also shows the connections between different ideas

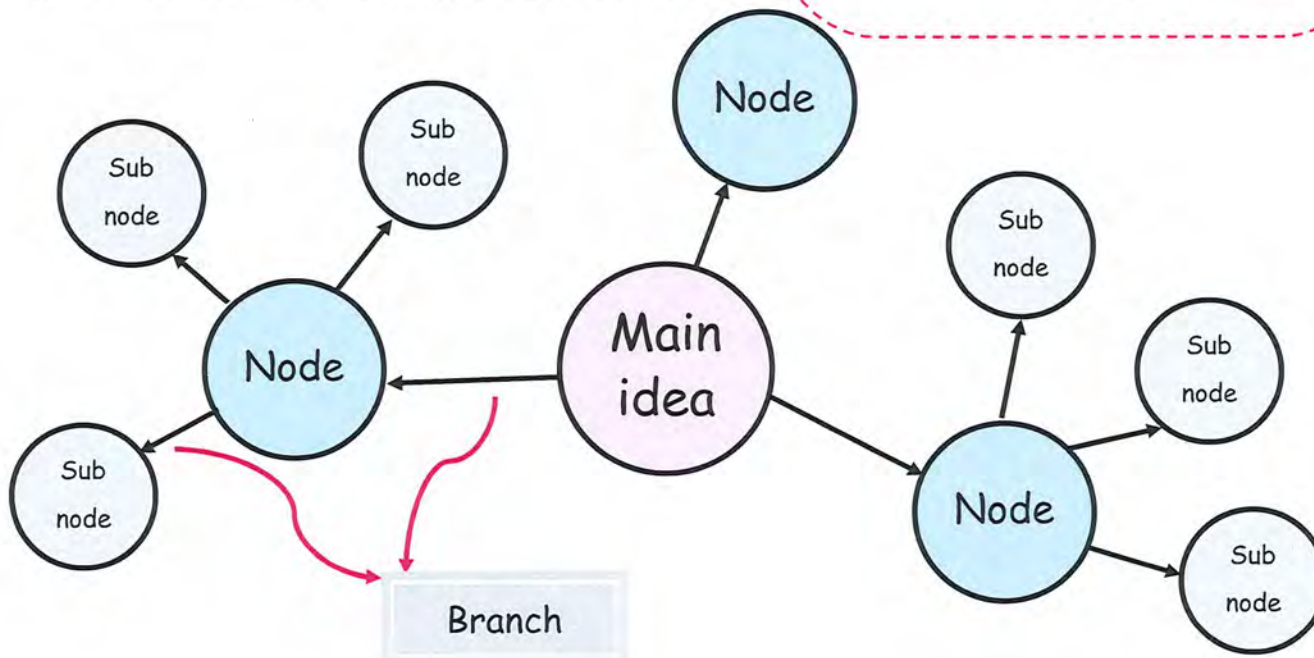
- Mind maps can be made digitally or hand drawn.
- Digital mind maps can be made on dedicated software (these can also be shared within a design team)

### Content of a mind map

- A mind map consists of the main or central idea in the middle
- Nodes are connected to the main idea using lines called branches
- Sub-nodes are connected to the nodes to help organise ideas
- Each node or sub-node includes text and/or images

### Keywords

- Mind map
- Digitally
- Hand drawn
- Central idea
- Node
- Branches
- Sub-nodes



### QR codes





## R093: Work planning and documents used to support ideas generation

A mood board is a planning document that assembles a range of materials in order to reflect the potential style of a media product.

### Purpose of a mood board

- Develop feeling and style of a product before it is made.
- Giving ideas for the later planning stages
- Refer to when producing the final media product
- Gain feedback from a client or design team

### Content of a mood board

#### Physical mood board

Produced on a large piece of paper or card and contain materials such as photographs, pages cut out from a magazine, fabrics, examples of typography and colour swatches/

#### Digital mood board

A digital mood board may include digital images, graphics, text, videos and audio files.

Digital mood boards are made in a wide range of software.



### Keywords

- Mind map
- Digitally
- Hand drawn
- Central idea
- Node
- Branches
- Sub-nodes

Physical mood board

Digital mood board

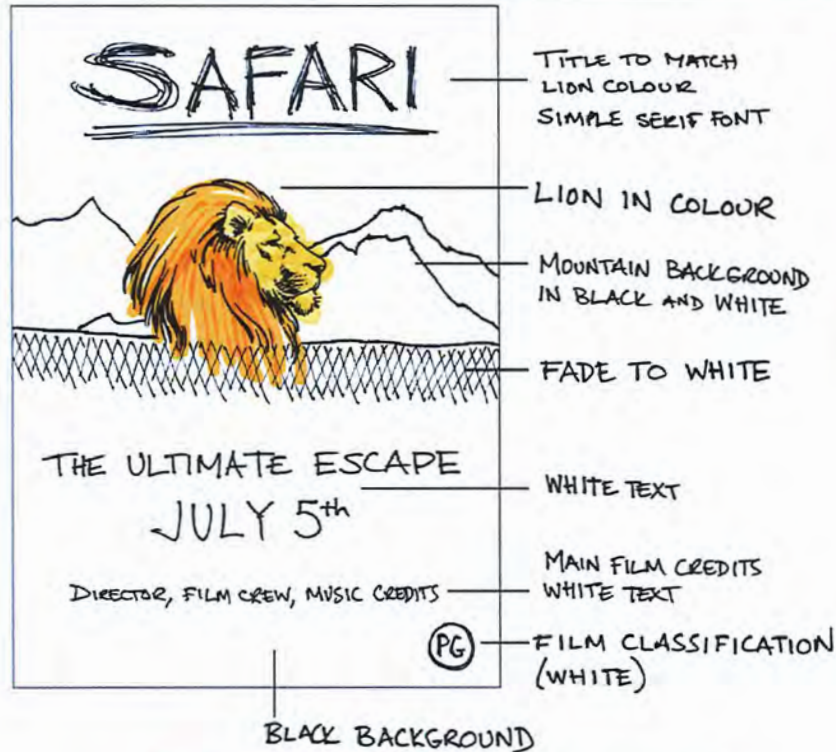
QR codes





## R093: Work planning and documents used to support ideas generation

A visualisation diagram is a rough sketch of a media product. The purpose of a visualisation diagram is to give a representation of how a film product will look including content, layout, font and colour.



A good visualisation diagram should contain enough detail that a graphic designer could create the product using it.

### Sketches of the content



Bike

### Layout and positioning of assets

Where are the graphics going to go on your product?

### Annotations

Labels around your diagram which provide extra information

### Specific features

Typical features e.g. magazine cover visualisation diagram would show a front

## Keywords

- Visualisation
- Sketches
- Layout/position
- Annotation
- Features

Visualisation diagrams are used for:

- Brochures or leaflets
- Magazines or book covers
- Posters
- DVD/Blu-ray covers
- Comic pages
- Web pages
- Game screens/characters/environments
- Print adverts

### QR codes



### Software for visualisation diagrams

Word  
PowerPoint  
Publisher  
Photoshop/Affinity

### Hardware for visualisation diagrams

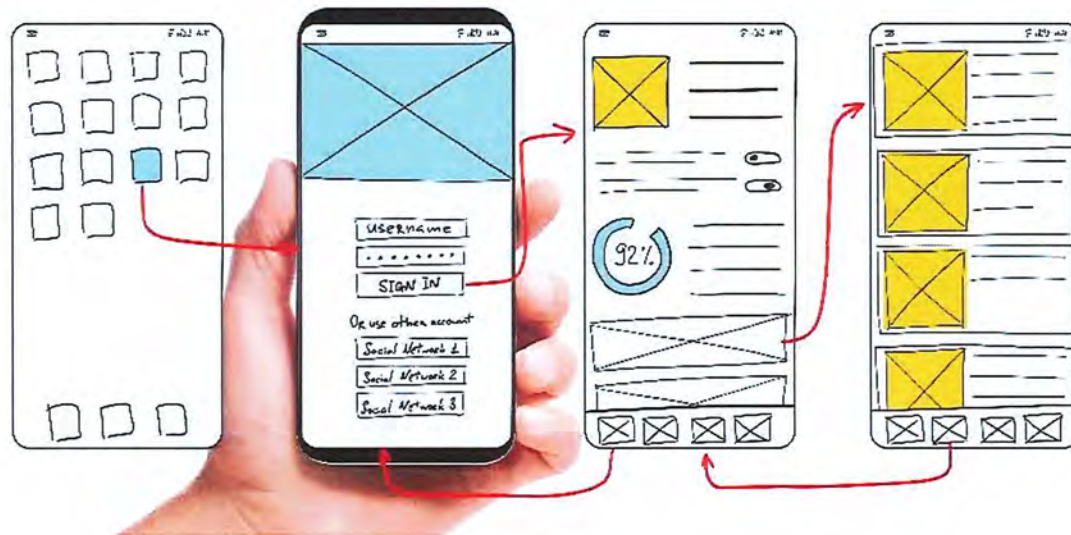
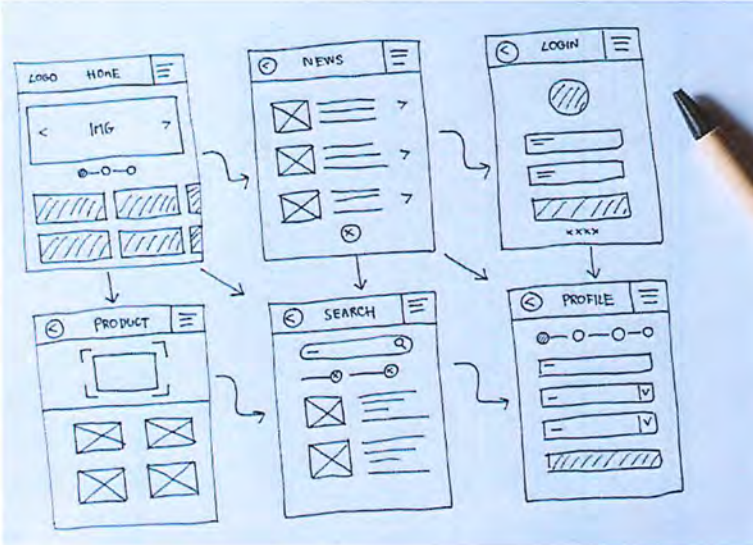
Pen  
Paper  
Coloured pens  
Scanner  
Printer



## R093: Work planning and documents used to support ideas generation

A wireframe is a planning document that shows the layout and functionality of interactive products such as apps or websites. It also shows how different webpages or screens link to one another.

- The specific content used for text, images and video will likely be dynamic (it will change)
- Images are usually indicated by a box with an X inside it
- Text is usually indicated using lines or dummy text
- Buttons and text boxes are indicated with squares



## Keywords

- Wireframe

### Users of wireframes include:

- Website designers
- Website developers
- UX designers (User experience designers)
- App developers / designers / programmers

### QR codes

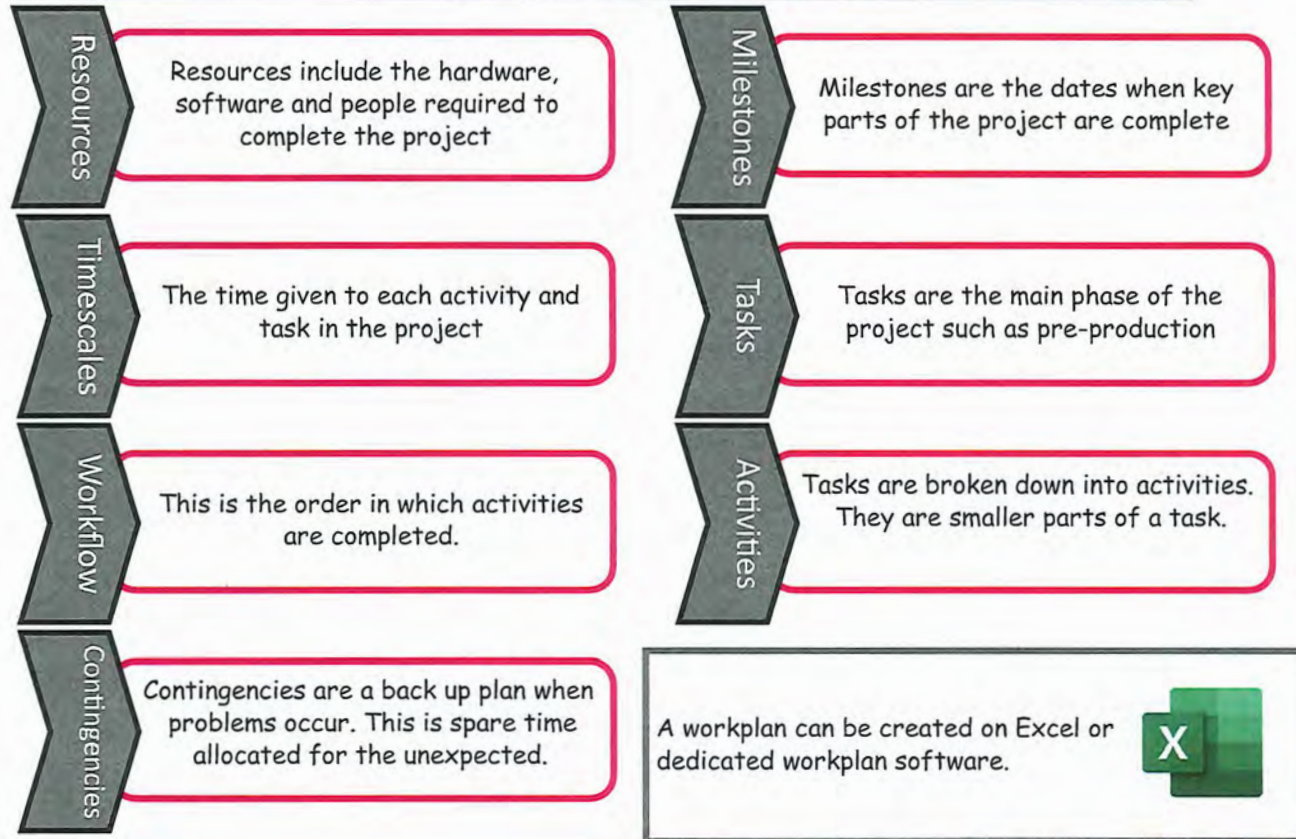




## R093: Work planning and documents used to support ideas generation

Work plans are used to plan out the different elements that need to be completed within a project. In media there are 3 phases: pre-production (planning), production (creating) and post-production (editing and reviewing)

### Components of a workplan



| Number and name of the action    |  | 2012 |    | 2013 |    |     |    |
|----------------------------------|--|------|----|------|----|-----|----|
|                                  |  | III  | IV | I    | II | III | IV |
| <b>A. Preparatory Actions</b>    |  |      |    |      |    |     |    |
| A.1                              | Experimental data collection campaign during a winter season |      |    |      |    |     |    |
| A.2                              | Project Requirements Analysis                                |      |    |      |    |     |    |
| <b>B. Implementation actions</b> |  |      |    |      |    |     |    |
| B.1                              | System design  |      |    |      |    |     |    |
| B.2                              | System implementation  |      |    |      |    |     |    |
| B.3                              | System integration   |      |    |      |    |     |    |
| B.4                              | Pilot realization  |      |    |      |    |     |    |

### Keywords

- Workplan
- Phases
- Pre-production
- Production
- Post-production
- Resources
- Timescales
- Milestones
- Tasks
- Dependencies
- Activities
- Subtasks
- contingencies

### QR codes





Music

# JS Bach: Badinerie

## Form and structure:

The piece is in **Binary** form (**AB**).  
Section A is 16 bars long.  
Section B is 24 bars long.  
Each section is repeated (**AABB**).

## Dynamics:

Mostly **forte** throughout, although no markings appear on the score.  
On some recordings, **terraced dynamics** (sudden changes) are included.

## Background details:

Composed by **Johann Sebastian Bach** (1685 – 1750), one of the main composers of the **Baroque** era in music.  
Badinerie is the last of seven movements from a larger piece called **Orchestral Suite No.2**.  
The piece was composed between **1738-1739**.

## Tonality:

Section A begins in **B minor** (tonic) and ends in **F# minor** (dominant minor).  
Section B begins in **F# minor** (dominant minor) and ends in **B minor** (tonic).  
Section A modulates from B minor through **A major** before arriving at F# minor.  
Section B modulates from F# minor through **E minor**, **D major**, **G major** and **D major** before arriving at B minor.

## Harmony:

**Diatonic**; mixture of root position and inverted chords; uses V7 chords and a Neapolitan sixth chord.  
Imperfect and perfect cadences are clearly presented throughout. Both sections end with a **perfect cadence**.

## Metre and rhythm:

**Simple duple time** – 2/4 – with two crotchet beats in every bar.  
Uses **ostinato rhythms** which form the basis of two short musical ideas (X and Y), consisting almost totally of **quavers and semi-quavers**.

## Instrumentation:

**Flute, string orchestra and harpsichord**.  
The score has five parts (flute, violin 1, violin 2, viola and cello). The harpsichord player reads from the cello line and plays the notes with their left hand whilst filling in the chords with their right hand.

## Melody:

The movement is based on **two musical motifs**.



Both motifs begin with an **anacrusis**. Motif X is entirely **disjunct** whilst motif Y **combines disjunct and conjunct** movement.  
Typical **ornaments and compositional devices** of the period are used including **trills, appoggiaturas** and **sequences**.

## Texture:

**Homophonic**: melody and accompaniment.  
The flute and cello provide the main musical material; however, the 1<sup>st</sup> violin participates occasionally.  
The 2<sup>nd</sup> violin and viola provide harmony with less busy musical lines.

## Tempo:

The tempo is **Allegro** (quick, lively, bright), although not marked on the score.



# Toto: Africa

Soft rock

## Form and structure:

The piece is in **strophic** or **verse-chorus** form.

| Intro  | Verse 1 / Verse 2 | Chorus 1 / Chorus 2 | Link 1 / Link 2 | Instrumental | Chorus 3 | Outro   |
|--------|-------------------|---------------------|-----------------|--------------|----------|---------|
| 1 - 4  | 5 - 39 / 14 - 39  | 40 - 57             | 58 - 65         | 66 - 82      | 40 - 92  | 93 - 96 |
| 4 bars | 35 bars / 26 bars | 18 bars             | 8 bars          | 17 bars      | 22 bars  | 4 bars  |

## Metre and rhythm:

**Simple duple time** - 2/2 (split common time) - with two minim beats in every bar.

Uses distinctive **ostinato rhythms** for both riffs, consisting almost totally of **quavers**, with constant use of **syncopation**.

**Vocal rhythm** looks complex but follows the natural rhythm of the lyrics.

## Background details:

Composed by band members **David Paich** and **Jeff Porcaro**.

Recorded by the American rock band Toto in **1981** for their fourth studio album entitled **Toto IV**.

Released in **1982** and reached number one in America on 5 February **1983**.

Genre: **soft rock**.

## Instrumentation:

**Rock band:** drum kit with additional percussion, lead and bass guitars, synthesisers, male lead vocals and male backing vocals.

## Harmony:

**Diatonic;** mixture of root position and inverted chords.

**Riff a** can be heard during the intro, verses, link sections, instrumental and outro. This riff uses a three-chord pattern: **A - G<sup>#</sup>m - C<sup>#</sup>m**.

The notation shows a piano accompaniment for the riff. The right hand plays chords in a sequence: A (root position), G#m (first inversion), and C#m (root position). The left hand provides a steady bass line with eighth notes. The dynamic marking is *mf*.

Choruses use a standard chord pattern: **vi (F<sup>#</sup>m) - IV (D) - I (A) - V (E)**.

The **harmonic rhythm** (the rate of chord change) is mostly once per bar.

## Dynamics:

Most of the song is **mezzo-forte** (moderately loud) whilst the choruses are **forte**.

## Melody:

Mostly **conjunct** (moving in step) with a **wide vocal range**.

**Riff b** uses the **pentatonic scale** (interpreted through E major):

The notation shows a melodic line in the right hand of a piano, consisting of a pentatonic scale in E major (C#m). The notes are C#, D, E, G, and A, moving in a conjunct fashion. The left hand provides a simple accompaniment.

**Vocal improvisations** occur towards the end of the song.

## Texture:

**Homophonic:** melody and accompaniment.

## Tonality:

The majority of the song is in **B major** whilst the choruses are all in **A major**.

## Tempo:

The tempo is **moderately fast**.

# FORM AND STRUCTURE ...

is how the music is organised to give it shape and balance.



Each section in the music is usually labelled with a capital letter, i.e. A, B, C, and so on.

**Binary:** A B

**Strophic:** A A A

**32 bar song:**  
A A B A

**Ternary:** A B A

**Theme and Variation:**

**Minuet and Trio:**

**Rondo:**

**12 bar Blues:**

Main theme  
Variation 1  
Variation 2  
Variation 3  
etc.

] : A B : ] : C D : ] A B

A B A C A

A repeated chordal pattern

|    |    |   |   |
|----|----|---|---|
| I  | I  | I | I |
| IV | IV | I | I |
| V  | IV | I | I |

## Some structural sections:

**Introduction (Intro)** - Opening of a piece which introduces the main ideas.

**Outro** - Last part of a piece used in 'pop' music.

**Coda** - Final section of a piece of music.

**Bridge** - Piece of music that links two other sections together.

**Break** - Section that offers a contrast or 'break' from the rest of the piece/song.

**Verse** - Section of a song which has the same music but different lyrics when repeated.

**Chorus** - Section of a song which has the same music and lyrics when repeated.

**Middle 8** - Eight bars in the middle of a song which provide a contrast.

## Some structural devices:

**Regular phrasing** - Melody divided up into balanced, symmetrical phrases.

**Irregular phrasing** - Melody divided up into unbalanced phrases.

**Riff** - Catchy idea in 'pop' music which is repeated.

**Fill** - Idea that fills in the 'gaps' at the end of phrases.

**Ostinato** - Continuously repeated phrase or idea.

**Call and response** - Short musical idea followed by an answering phrase.

**Loop** - An idea continuously repeated by technical means.

**Repetition** - When an idea is repeated.

**Contrast** - A change in the music which offers a difference in the musical elements to provide contrast to the initial material.



**HARMONY** is...created  
through chords in music.

**CONSONANT HARMONY:**

when the notes sound 'good' together.

**DISSONANT HARMONY:**

when the notes 'clash'.

**DIATONIC HARMONY**

is based on the major / minor scale system - triads are built on every note of the scale:



**CHROMATIC HARMONY**

Chromatic harmony is far more complex and includes accidentals not belonging to the home key.

**Every one of the 7 notes, (or DEGREES) of the scale is given a name:**

- 7<sup>th</sup> note: **LEADING NOTE**
- 6<sup>th</sup> note: **SUBMEDIANT**
- 5<sup>th</sup> note: **DOMINANT**
- 4<sup>th</sup> note: **SUBDOMINANT**
- 3<sup>rd</sup> note: **MEDIANT**
- 2<sup>nd</sup> note: **SUPERTONIC**
- 1<sup>st</sup> note: **TONIC**

A **CADENCE** is a progression of two chords, found at the end of a musical phrase.

**PERFECT CADENCE:** Uses chords **V → I**

Sounds complete and always stops on the tonic chord. Both chords are major.

**IMPERFECT CADENCE:** Lands on chord **V**, e.g. **I → V; ii → V; IV → V; vi → V**

Sounds incomplete. The 2<sup>nd</sup> chord is always chord **V** of the key, which is major.

The chord before may be major or minor.

**PLAGAL CADENCE:** Uses chords **IV → I**

Sounds complete and finishes on chord **I**. Both chords are major.

It is sometimes known as the 'Amen' cadence because it is often found at the end of a hymn.

**INTERRUPTED CADENCE:** Uses chords **V → vi**

Sounds incomplete. In a major key, it involves a major chord moving to a minor chord. It is sometimes known as a 'surprise' cadence, because it seems as if chord **V** will resolve to chord **I**, but it does not - stopping instead on a minor chord.

# MELODY is...

a line of musical notes with varying pitches that is satisfying to listen to.

## **Anacrusis:**

a note (or notes) that come before the first strong beat in a piece. Sometimes called the 'up-beat' or 'pick-up'.

## **Motif:**

a short melodic or rhythmic idea.

## **Leitmotif:**

a recurrent musical idea representing a person, place, feeling or idea.

## **Countermelody:**

a 2<sup>nd</sup> melody played at the same time as the main theme.

## **Pitch:**

whether the musical notes are high, middle-sounding or low.

## **Range:**

the distance from the lowest sounding note to the highest sounding note in a piece of music.

## **Ornaments:**

used to 'decorate' the music, e.g. trill, mordent, turn.

## **Chromatic:**

when the tune moves in semitones (like a chromatic scale).

## **Pentatonic:**

a musical scale based on 5 notes.

## **Intervals:**

distance between 2 pitches

Microtone

smaller than a semitone

Semitone



Tone / major 2<sup>nd</sup>



Major 3<sup>rd</sup>



perfect 4<sup>th</sup>



Perfect 5<sup>th</sup>



Major 6<sup>th</sup>



Major 7<sup>th</sup>



Perfect 8<sup>th</sup>  
(Octave)



## **Question and answer phrases:**

an initial idea (the questioning phrase) balanced by a 2<sup>nd</sup> idea (the answering phrase).

## **Theme:**

the main musical idea in a piece of music.

## **Sequence:**

repetition of a musical idea at a higher or lower pitch.

## **Imitation:**

when a musical idea is copied in another part.

## **Repetition:**

when musical ideas are repeated.

## **Contrast:**

when there is some type of difference in the music.

## **Fanfare:**

a musical 'announcement', based on the pitches of a chord.

## **Blue notes:**

the flattened notes in a Blues scale.

## **Types of scales:**

Major, Minor, (up to 4 sharps and flats), Pentatonic, Blues.

## Useful terms and their meanings

### **Conjunct:**

Stepwise movement in a melody (scalar).

### **Disjunct:**

When the melodic movement includes lots of leaps or intervals.

### **Arpeggio / broken chord:**

When the notes of a chord are played separately and in succession.

### **Anticipation note:**

When a note of the next chord is played early, preparing for the intended pitch in the chord.

### **Triadic:**

Musical movement that uses the notes of a triad.

### **Pentatonic melody:**

Melody based on a 5-note scale.





# METRE

## Simple Time

counts crotchet beats in every bar.

 = 2 crotchet beats in a bar  

 = 3 crotchet beats in a bar  

 = 4 crotchet beats in a bar  

## Compound Time

counts dotted crotchet beats in every bar.

 = 1 dotted crotchet beat in a bar  

 = 2 dotted crotchet beats in a bar  

 = 3 dotted crotchet beats in a bar  

 = 4 dotted crotchet beats in a bar  

# MUSICAL STYLES

...are the different types of music



## AOS 1: Musical Forms and Devices



BAROQUE ERA  
(1600 - 1750)



CLASSICAL ERA  
(1750 - 1810)



ROMANTIC ERA  
(1810 - 1910)



## AOS 2: Music for Ensemble



JAZZ AND BLUES



MUSICAL THEATRE



CHAMBER MUSIC

## AOS 3: Film Music

Music to accompany film or television scenes  
- appreciating how musical elements are used  
to create the mood and atmosphere through  
engaging with the story.



## AOS 4: Popular Music

Rock                  Hip-Hop  
Pop                    Ballad  
Soul                    Reggae  
Fusion                Minimalism    Bhangra





# Rhythm is ...

the way the time values and patterns of notes are organised and used.

| Note | Note name                         | Rest |  |
|------|-----------------------------------|------|--|
|      | Semibreve<br>(4 crotchet beats)   |      |  |
|      | Minim<br>(2 crotchet beats)       |      |  |
|      | Crotchet<br>(1 crotchet beat)     |      |  |
|      | Quaver<br>(1/2 crotchet beat)     |      |  |
|      | Semiquaver<br>(1/4 crotchet beat) |      |  |

**Syncopation / 'off-beat'**  
...is when the strong accent is placed on a normally weak beat.

**On the beat**  
...is when the accents are on the strong beats, e.g. the first beat of the bar.

**Dotted notes**  
...a dot placed after a note adds half the original value to the note.

**Triplets**  
...when 3 equal note values are played in the time of 2 note values.

CHAAL is an 8 note dotted rhythmic pattern found in **BHANGRA**.



**Tied notes** ... are two notes of the same pitch joined together by a short curved line called a tie.

**Swing rhythms** give a dotted / triplet rhythm feel to the beat.

**Driving rhythms** are energetic, 'driving' the music on.

**Dance rhythms** are typical rhythms of any kind of dance.

**Rock rhythms** are rhythmic riffs and patterns associated with 'rock' music.

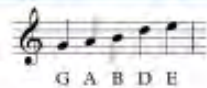
# SCALES

**MAJOR** sounds are happy / bright.

| Key      | Scale |
|----------|-------|
| C major  |       |
| G major  |       |
| D major  |       |
| A major  |       |
| E major  |       |
| F major  |       |
| Bb major |       |
| Eb major |       |
| Ab major |       |

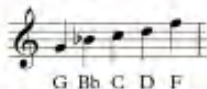
**MINOR** sounds are sad and rather mournful.

| Key      | Scale |
|----------|-------|
| A minor  |       |
| E minor  |       |
| B minor  |       |
| F# minor |       |
| C# minor |       |
| D minor  |       |
| G minor  |       |
| C minor  |       |
| F minor  |       |



G A B D E

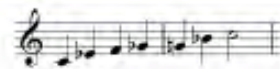
The **major pentatonic** uses notes 1,2,3,5 and 6 of a major scale.



G Bb C D F

The **minor pentatonic** uses notes 1,3,4,5,7 of the natural minor scale.

**Blues scale in C**



**Chromatic scale on C**





# SONORITY...

is all about the quality of sounds in music – the types of voices, instruments and technology and how they are used.

## Percussion: Timpani, Drum Kit, Snare Drum, Cymbal, Hand Held Percussion, Glockenspiel, Xylophone, Tabla, Dhol

- Rim shot** – when the rim and head of the drum are hit at the same time.  
**Drum roll** – beats played in a rapid succession.

## Brass: Trumpet, French Horn, Trombone, Tuba

- Muted** – when mutes are used to 'dampen' the sound.

## Woodwind: Flute, Oboe, Clarinet, Saxophone, Bassoon

- Slurred** – joining notes 'smoothly'.  
**Tongued** – notes are separated, sounding 'defined'.

## Voices: Soprano, Alto, Tenor, Bass

- A cappella** – without accompaniment.  
**Humming** – vocal sound made with closed mouth.  
**Syllabic** – one note for each syllable.  
**Melismatic** – each syllable has a number of notes.  
**Vibrato** – rapid, slight variation in pitch.  
**Falsetto** – male voice in a higher range than usual.  
**Belt** – lower, more powerful part of voice range.  
**Rap** – words spoken in a rhythmical way.  
**Scat** – jazz singing, no words or nonsense words.  
**Backing vocals** – singers providing extra harmonies.

## Strings: Violin, Viola, Cello, Double Bass, Harp

- Pizzicato** – 'plucked'.  
**Double stopping** – one instrument playing 2 notes at the same time.  
**Tremolo** – rapid bowing to give a dramatic effect.  
**Divisi** – 2 parts in the same musical line.  
**Arco** – 'bowed'.  
**Mutes** – used to 'dampen' the sound.

## Guitars: Classical / Spanish, Electric + Bass guitars, Sitar, Saranga, Tumbi

- Distortion** – effect which 'distorts' notes.  
**Hammer-on** – finger brought down sharply on a string.  
**Slap bass** – bouncing strings against the fret board.  
**Pitch bend** – altering pitch of a note very slightly.

## Keyboards: Piano, Organ, Harpsichord





# TEMPO is...

the speed of the beat.

**Allegro  
Vivace**

Fast / Lively / Quick

**Moderato  
Andante**

Not too slow / at  
a moderate pace, a  
'walking' speed

**Allegretto**

Moderately fast

**Adagio  
Lento**

Slow / Leisurely

**Accelerando** gradually getting faster.

**Ritardando / Rallentando** slowing down.

**Rubato** a 'freer' interpretation of the tempo.

**Pause** a symbol which means the note  
must be held for longer than its original value.



Some other useful terms:

**Presto** - very quick

**Largo** - very slow

**A tempo** - in the original tempo

**Ritenuato** - in slower time



# TEXTURE is...

the way that the melody, chords and musical ideas have been woven together to achieve different effects - the 'layers' of music and how they relate to each other.

## Monophonic



A single melodic line with no harmonies or other melodies. It may be sung or played by more than one voice or instrument.

## Homophonic



A chordal style, or a melody plus chords, which sometimes provide a rhythmic contrast.

## Polyphonic



A more complex style which presents the melody (or melodies) in imitation or in counterpoint.

### *Unison:*

When all parts are playing the same music at the same pitch

### *Chordal:*

When parts move together creating a succession of chords

### *Drone:*

Constantly repeated or sustained note(s)

### *Stab chords:*

Short, 'staccato' chords that add impact and 'punch' to the music

### *Imitation:*

When one part 'copies' another

### *Counter-melody:*

A new melody, combined with the theme

### *Descant:*

A decorative (higher) line added to the main tune

### *Round:*

A short (vocal) canon

### *Canon:*

When the melody is repeated exactly after the first, with some overlapping

### *Alberti Bass:*

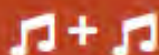
A type of accompaniment figure that uses broken chords

### *Walking bass:*

A steady, continuous, mainly stepwise bass line

### *2-part texture:*

Music written for 2-part voices or instruments



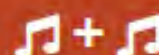
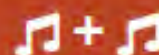
### *3-part texture:*

Music written for 3-part voices or instruments



### *4-part texture:*

Music written for 4-part voices or instruments



# Tonality

is... the key of the music – it depends on the types of scales used.



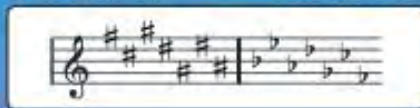
You must know the key signatures in all the major and minor keys up to four flats and four sharps. These scales are what the music is based on.

## THE PENTATONIC SCALE

This type of scale is made up of five notes within the range of an octave.

order of sharps

order of flats



For example:



order of sharps →

**F C G D A E B**

← order of flats

## MODULATION is when the music changes key.

Modulation to the dominant is when the music moves from the tonic to the dominant key. The dominant key is based on chord V of the original key, e.g. from C major to G major.

Modulation to the relative minor key is when the music moves from the tonic major key to the relative minor key. The relative minor key is the minor key which shares the key signature with the home key, e.g. the relative minor of C major is A minor.

Modulation to the relative major key is when the music changes from the tonic minor key to the relative major key. The relative major key is the major key which shares the key signature with the home key, e.g. the relative major of A minor is C major.

| Key signature             | Major keys | Minor keys |
|---------------------------|------------|------------|
| No flats or sharps        | C major    | A minor    |
| 1 sharp (F#)              | G major    | E minor    |
| 2 sharps (F#, C#)         | D major    | B minor    |
| 3 sharps (F#, C#, G#)     | A major    | F# minor   |
| 4 sharps (F#, C#, G#, D#) | E major    | C# minor   |
| 1 flat (Bb)               | F major    | D minor    |
| 2 flats (Bb, Eb)          | Bb major   | G minor    |
| 3 flats (Bb, Eb, Ab)      | Eb major   | C minor    |
| 4 flats (Bb, Eb, Ab, Db)  | Ab major   | F minor    |



# Performing Arts

## COMPONENT 3 BTEC TECH PERFORMING ARTS (ACTING)

**Devise a performance in response to a stimulus provided by the exam board. Both parts of the task (written and performance) will be completed under supervision.**

**There is a 12 week window for all parts to be completed. The component is marked out of 60.**

### Assessment objectives

**AO1 - Understand how to respond to a brief.** Discuss and practically **EXPLORE** the stimulus considering: target audience, performance space, planning and managing resources, running time and style of work.

Develop ideas considering: structure of work, style and genre used, skills required, creative intentions.

Work effectively as a member of the group making an individual contribution and responding to the contribution of others.

**AO2 – Select and develop skills and techniques in response to a brief.**

Demonstrate **HOW** to select and develop skills and techniques that are needed for the performer and whole group and take part in the rehearsal process.

**AO3 – Apply skills and techniques in a workshop performance in response to a brief**

Contribute to a workshop performance using: vocal, physical and interpretative skills. (18 marks)

**AO4 – Evaluate the development process and outcome in response to a brief**

Evaluate the process and performance. Consider: the brief, stimulus and contribution from other group members. Reflect on: selection of skills used, individual strengths/areas for improvement, overall and individual contribution to the group, impact of the groups work.

### Key vocabulary

**Target audience** – who you will perform to and why

**Performance space** – choosing where the performance will take place if not on the stage and why

**Running time** – length of the performance

**Style of work** – genre or practitioner who will influence your work

**Vocal skills** – ability to adapt voice to suit a character

**Physical skills** – movement, gestures, body language, facial expressions

**Interpretative skills** – presenting yourself to the audience and creating emotion

**Commitment** – how much effort you put in individually and as a group

**Rehearsal** – practicing the performance

**Blocking** – deciding where an actor should stand

**Performance** – Showing of the piece of work to the target audience

**Evaluate** – identify strengths and areas for improvement of both the rehearsal and performance

**Characterisation** - creating a character through your movement and dynamic choices



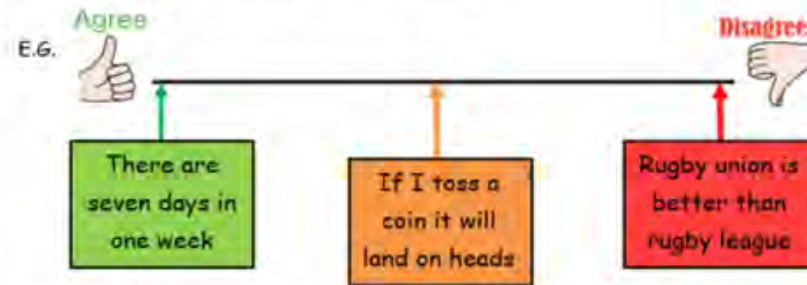
PE

# Year 11 GCSE PE Spring Knowledge Organiser

## Component 2 Classification of Skills

### Classifying skills on a continuum

- You need to classify skills on a continuum!
- A continuum is a line that goes between two extremes!
- We can put information on the continuum!



We need to know three continua (continua = more than 1 continuum)

Open \_\_\_\_\_ Closed

Basic \_\_\_\_\_ Complex

Low Organisation \_\_\_\_\_ High Organisation

### Open and closed skills

|                       | Open Skills  | Closed Skills   |
|-----------------------|--|---|
| Description           | Open skills <b>ARE</b> affected by their surrounding environment. Extreme open skills need to be constantly adapted by the performer as situations change around them. Conditions are unstable and <b>UNLIKELY</b> to be the same each time a skill is performed | Closed skills are <b>NOT</b> affected by their surrounding environment. Extreme closed skills don't need to be constantly adapted by the performer as situations around them are stable. Conditions are <b>LIKELY</b> to be the same each time a skill is performed |
| Example of the skills | <ul style="list-style-type: none"> <li>Dribbling in football</li> <li>Passing in basketball</li> <li>Tackling in rugby</li> <li>Shooting in hockey</li> </ul>  | <ul style="list-style-type: none"> <li>Penalty in football</li> <li>Gymnastics vault</li> <li>Tennis serve</li> <li>Free shot in basketball</li> </ul>  |
|                       |   |    |

### Low organisation and high organisation skills

|                       | Low Organisation Skills   | High Organisation Skills  |
|-----------------------|---|---|
| Description           | Are easy to do<br>Have clear separate phases<br>Easy to break down and practice   | Are hard to do<br>Have phases that are not clear<br>Hard to break down and practice                                 |
| Example of the skills | <ul style="list-style-type: none"> <li>Tennis serve</li> <li>Triple jump</li> <li>Back hand push shot</li> <li>Batting in rounders</li> </ul> | <ul style="list-style-type: none"> <li>Golf swing</li> <li>Tumbling in gymnastics</li> <li>10m High dive</li> </ul> |
|                       |   |                                |

### Basic (simple) and complex skills

|                       | Basic/Simple Skills  | Complex Skills  |
|-----------------------|--|---|
| Description           | Are simple to perform<br>Requires little thought<br>Don't need much information to be processed<br>Requires little decision making | Are difficult to perform<br>Requires thought and concentration<br>Require a lot of information to be processed<br>Requires a lot of decision making                       |
| Example of the skills | <ul style="list-style-type: none"> <li>Running</li> <li>Cycling</li> <li>Swimming</li> <li>Chest pass in netball</li> </ul>        | <ul style="list-style-type: none"> <li>Lay-up shot in basketball</li> <li>Rock climbing</li> <li>Overhead kick in football</li> <li>Backhand smash (badminton)</li> </ul> |
|                       |   |    |





# Year 11 GCSE PE Spring Knowledge Organiser

## Component 2 Types of Guidance

### Visual guidance

**Explanation:** Visual guidance is when the performer is shown the skill e.g. videos, pictures and Demonstrations

- Pictures must be clear
- Demonstrations must be seen more than once & be of good quality so poor movement is not copied
- Demonstrations must be clearly visible

**When would you use it:** Is good for beginners so they can see what the skill looks like and create a mental image of what the movement should be  
It is also good when it is not possible to hear verbal guidance e.g., during play

#### Advantages

- Can copy the movement
- Can be done with large groups

#### Disadvantages

- If demonstration is poor incorrect movement learnt
- Time consuming
- Videos are expensive
- Complex movements are difficult to recognise

### Mechanical guidance

**Explanation:** mechanical guidance is where the coach uses equipment to support the performer to help them with technique.

- Using a harness when learning backward somersaults on a trampoline.
- Using floats to develop leg strength when swimming

**When would you use it:** This can be used with performers of all abilities and skill levels it is particularly useful for beginners. It may be important to use mechanical guidance when the activity is dangerous such as using a harness when a performer is learning a new trampoline routine

#### Advantages

- Can get a feel for the movement
- Build's confidence
- Reduces danger

#### Disadvantages

- The feeling is not actually the same as actually doing the skill unaided
- Performer can become dependent on the support
- Incorrect feel can lead to incorrect movement being learned
- Cannot be used in large groups

### Verbal guidance

**Explanation:** Verbal guidance is when the performer is told information about how to complete the correct technique

- Information must be clear so it is understood
- Information must be concise (not confusing)
- Performer must be able to hear the information

**When would you use it:** Is good for more experienced performers who know what the movement should look like and can make sense of the information.  
It is also used when demonstrations are not possible e.g. a break in play

#### Advantages

- Instructions can be given quickly
- Can be used during a performance
- No equipment is required

#### Disadvantages

- Some movements are difficult to explain
- Relies on the coach's communication skills being good enough for the performer to understand

### Manual guidance

**Explanation:** Manual guidance is where the coach physically supports or moves the performer to help them get into the correct position

- Tennis coach moving the racket arm in the correct range of motion for a forehand drive
- A trampoline coach supporting a front somersault
- A gymnastics coach supporting a balance to get the right shape

**When would you use it:** This can be used with performers of all abilities and skill levels it is particularly useful for beginners

#### Advantages

- Can get a feel for the movement
- Build's confidence
- Can help break down the movement into phases

#### Disadvantages

- The feeling is not actually the same as actually doing the skill unaided
- Performer can become dependent on the support
- Incorrect feel can lead to incorrect movement being learned
- Can only be used 1 on 1

### Summary



**Visual Guidance**

A coach is giving visual guidance to a novice basketball player on how to grip the ball

He can see how the skill should be performed and can copy it

It is a clear demonstration so the performer uses the correct technique

**Verbal Guidance**

Jose Mourinho gives verbal guidance to an elite athlete. He gives him instructions quickly on how to improve technique

Because the athlete is experienced, he understands and makes sense of the information

Instructions are concise and easy to understand

**Manual Guidance**

Manual guidance is given to a novice performer on how to perform a serve

The performer gets a feeling for the motion and develops confidence to perform the skill in a game

**Mechanical Guidance**

A performer is using manual guidance (harness) to practice a trampoline routine

It's the first time the performer has attempted the routine so it reduces the danger

It develops the confidence of the performer as he can safely get a feeling for the movements involved





# Year 11 GCSE PE Spring Knowledge Organiser

## Component 2 Types of Feedback

| Type of Feedback  | Explanation  | Application   |
|-------------------|--|---|
| <b>Intrinsic</b>  | <p>Intrinsic feedback is <b>within</b> the performer</p> <p>They understand how the movement feels from feedback from the muscles</p> <p>It is important so performers can spot their own errors</p> <p>Intrinsic feedback should be developed so the performer is not reliant on others</p> | <p>Used by <b>experienced</b> performers as the skill is well learnt and they can make amendments to their own performance based on their internal feedback</p> <p>E.g. When a gymnast is performing a somersault, they will be able to use internal feedback from their muscles to readjust their body to successfully perform the skill</p>           |
| <b>Extrinsic</b>  | <p>Extrinsic feedback is feedback from <b>outside</b> the performer</p> <p>Extrinsic is important as someone watching the skill can observe and explain what needs to be done to correct it</p>  | <p>Used by <b>less experienced</b> performers as they are unlikely to detect their own errors</p> <p>E.g. When a gymnast is performing a somersault they may land falling backwards. A coach may tell them to stay tucked for longer, which will enable them to land on their feet</p>  |
| <b>Concurrent</b> | <p>Concurrent feedback is given <b>during a game</b></p>   | <p>Used by <b>experienced</b> and <b>less experienced</b> athletes and can be <b>intrinsic</b> or <b>extrinsic</b> E.g.</p> <p>A gymnast may alter their body position during a somersault to perform it correctly (intrinsic)</p> <p>A coach may tell the performer to point their toes during a somersault, this will aid performance (extrinsic)</p> |
| <b>Terminal</b>   | <p>Terminal feedback is given after the performance</p> <p>This may be due to the rules or the skill not being suitable.</p> <p>Feedback should be given as soon as possible after the performance</p>   | <p>E.g. A Gymnast performs a practice somersault. The coach would give feedback on how to improve the skill. The gymnast then performs again</p>  |

### Feedback

The ability and experience of a performer and the type of skill will affect the type of feedback given!

#### Effective feedback is used to:

- Provide information about the skill being performed
- Help improve performance on the skill
- Reinforce good practice

#### To be effective it must:

- Be short and concise (you can only process small amounts of information)
- Be given as soon as possible (while it is still fresh in their memory)
- Be relevant to the performer (specific to them not the whole group)

### Summary



**Intrinsic Feedback**

An experienced performer uses intrinsic feedback from their muscles to adjust their body position to perform the skill successfully



**Extrinsic Feedback**

A less experienced performer gets extrinsic feedback from their coach to explain how their performance can be improved



**Concurrent Feedback**

A coach gives concurrent feedback during a game of basketball



**Terminal Feedback**

Team 6B cycling team analyse data and performance after a race so feedback can be given to improve performance



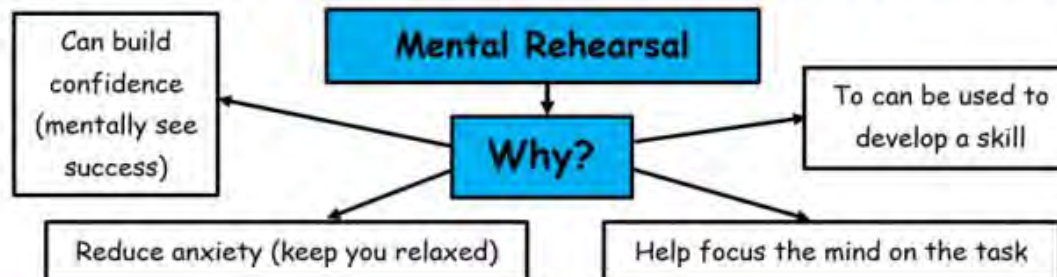


# Year 11 GCSE PE Spring Knowledge Organiser





## Component 2 Mental Rehearsal

### Mental Preparation

Mental preparation or mental rehearsal is a technique used by elite performers. It involves mentally practicing a skill before actually doing it.



### Mental Rehearsal

|                        | Explanation   | Example 1  | Example 2   |
|------------------------|---|--|---|
| <b>Warm-up</b>         | <p>One of the reasons why we warm-up is to mentally prepare, this can be done by mental rehearsal</p> <p>The performer goes through a skill or sequence of events they are about to perform in their mind</p> <p>This helps them clarify the skill they are about to perform, so they are confident they are ready to perform</p> | <p>Before a gymnastics performance they will imagine performing the actual routine, going through the various skills and visualising the whole routine</p>  | <p>Before participating in the bobsleigh, the driver will mentally go through the race, visualising every bend and turn down the track before actually racing</p>  |
| <b>During an event</b> | <p>Although mental rehearsal is completed before the start of a performance as part of their warm-up. It can also be used during a break or during the performance</p> <p>During a match when play is paused</p>  | <p>If awarded a free kick in football the performer will see themselves completing the skill and where the ball is going to go before they take it</p>    | <p>During a free throw in netball the performer will imagine themselves successfully completing the shot before taking it</p>                                    |

# Sports Studies





# Year 11 CNAT Sport Spring Knowledge Organiser

## Outdoor Activities:

- Canoeing
- Rock Climbing
- Skiing
- Orienteering
- Water Sports
- Trekking
- Caving
- Cycling
- Snow boarding
- Gliding
- Gorge Walking
- Paragliding
- High ropes





# Year 11 CNAT Sport Spring Knowledge Organiser

## 5 benefits of participating in outdoor activities?

- Increased confidence
- Enjoyment and challenge
- Improved health & fitness
- Greater environment awareness
- Increased motivation
- Opportunity to socialise

## How/why participating in outdoor activities can help develop skills:

- Social Skills
- Team building skills
- Decision making skills
- Planning and organisation skills
- Problem solving skills
- Communication skills

## What you need to consider when planning a an Outdoor Adventure Trip:

- Health & Safety
- Personnel (The number of people that are qualified to lead the trip/activity to the ration of participants)
- Adventure Activities Licensing Authority
- Clothing & Equipment
- Location
- Supplies
- Emergency procedure
- Contingency plan
- Shelter
- Timing

## What hazards do you need to consider when planning an Outdoor Adventure Trip:

- Inappropriate Supervision
- Faulty equipment or incorrect equipment
- Change in weather conditions (Unforeseen)
- Illness or Injury
- Poor organisation
- Getting lost
- Unstable terrain
- Animal and insects



# Travel & Tourism

## Travel & Tourism - Component 2 Knowledge Organiser

### Internal Customers

Definition: "Those who you directly or indirectly work with to ensure excellent service is given to external customers."

- Colleagues and staff with whom you work closely
- Supervisors and managers.
- Directors and Owners.
- Staff at other locations.
- Suppliers



### Groups

- Customers might be an in organised group (usually have a leader)
- If the group has a leader work with them to fully understand the groups needs
- Be alert to individual needs if the group doesn't have a group leader as people may want to ask questions



### New customers

- If the organisation is new, then customers are new. You need to keep them coming back for more!
- The organisation will also be unfamiliar with the needs, wants and desires of new customers



### Individuals

- Discover whether they will know someone else on the holiday
- If they want to be on their own?
- If they are on holiday, they might want to check in from time to time with a holiday rep.
- Some might want to be left alone.



### Business Travellers (Corporate Customers)

- Want quick and efficient service
- They need facilities and support to allow them to do their job.
- They might also want something that reflects that of a leisure Traveller ie jet lagged customers



## Types of Customer



### Additional Physical Needs

- Not every disability is visible
- Make sure that their needs are catered for and their disability (physical or mental)
- Can also include dietary requirements



### Age Groups

- You will meet different ages of people from the young to the old
- Some adults will want child free zones
- Parents will appreciate help with their infants and young children.
- Older generations might appreciate a more formal style of delivery ie sir or madam



### Existing Customers

- If the new customer is happy, they will come back.
- The organisation must continue to deliver products and services which the customer wants
- External changes may also impact on customer wants such as technology or new destinations etc.



### Special Interests

- They usually have special interests.
- Find out more about their hobbies to get to know their interests and dislikes to then cater the holiday around them.



### Important to remember:

Customer service is only possible if everyone in the organisation (whether or not they have direct contact with the external customer) aims to give customer satisfaction. It is like a chain



### Families

- Huge part of the travel industry
- Normally have one family member who leads the holiday.
- Talking to the children will also help and allows them to share their excitement of their holiday



### Culture and Ethnicity

- Prevalent in the inbound sector
- Different ethnicities have different needs and wishes.
- Respect their values and wishes
- Ignorance can lead to people taking offence





## Travel & Tourism - Component 2 Knowledge Organiser

### Safety

The Health and Safety at Work Act (1974) places a responsibility upon employers and employees to ensure the safety of ourselves and others.

Hotels must have evacuation procedures in every bedroom and coach drivers must remind customers to wear seat belts.



### Advice

Customers will look to you for advice. You are considered the expert. Examples might be...

- A train manager might be asked which side to sit on for the best views
- A hotel receptionist is asked how to get to a venue by a customer who missed their coach



### Specific Needs

Some customers have special needs. It may be because of a disability. They may need help to an easy access room or a wheelchair to take them to and from their transport. They may need an induction loop to help them hear in public areas, or an escort because they are partially sighted. They might have a dietary issue.



### Products and Services

- Make sure you know what products and services your organisation offers and what the benefits of them are.
- Learn about your competitors' products and services so that they can emphasise to your customers what your organisation offers that your competitors don't.
- The customer expects the product or service they purchased delivers what your organisation promised.
- Remember your 3P's (Product, Process and Personal Behaviour)
- It is not just about the flight and hotel that is booked, it is about the personal service you're providing. Are you knowledgeable, friendly and responding appropriately to what they have to say?



### Security

Bag checks are now more prominent than ever before due to recent terrorist activities. There is an increase in CCTV, security guards and body and baggage searches. If you are working in the industry, we need to be extra vigilant and reporting anything suspicious.



## Needs of different types of Customer

### Special Requests

Special requests may also increase a customer's enjoyment e.g. a bottle of champagne in a bridal suite for a honeymoon couple or a birthday cake arranged for a child's birthday.



### Assistance

People might require assistance with different things such as...

- Baggage in their holiday destination
- Elderly customers climbing stairs and many more



### Accurate Information

Customers expect accurate information. They need to know that the product/service meets their needs and how. Examples might be...

- Can you give me directions to...?
- At what time is the next show starting?
- What is the weather forecast for this afternoon?



### Health

The customers rely on you to be kept safe, secure and healthy whilst in your care.

You need to alert customers to overseas health requirements. These are usually available from the FCO.

SARS, Avian Flu, Swine Flu and Coronavirus has had restrictions on travel, each time this information was shared through the WHO (World Health Organisation).





## Travel & Tourism - Component 2 Knowledge Organiser

### Verbal Requests

- Verbal requests might be face to face
- They might also be over the telephone
- Staff must listen carefully to what the customer is saying or asking and be prepared to respond helpfully, knowledgeably and clearly.



### Recognising unstated needs

Sometimes a customer doesn't realise they have a need, so it is our job to identify those unstated needs. Some examples might include...

A family with children booking a holiday at a travel agent might want a kids club option.

Cabin crew reminding someone to fasten their seatbelt

A cruise ship waiter noticing someone not eating their meal because they are in fact vegetarian and are too shy to request a change.



### Booking Forms

Many tour operators are now offering online booking forms. We must make sure that they are...



- Easy to read
- Ask all the questions which the organisation needs to be answered.
- Provide the information the customer needs
- Is clear and unambiguous



## Responding to Customer Needs

### Written Requests

Much communication in Travel and Tourism is done via email or websites. However, some customers still prefer to communicate by letter and written booking form.



- The style and sometimes the information can differ depending on method of communication.
- Make sure that dates are correct
- Make sure you sign the letter off correctly eg yours sincerely, yours faithfully.

### Exceeding Expectations

- Anticipate the customer's needs before they ask for it.
- Personalise the experience for the customer, get to know them
- Solve problems imaginatively.
- Think of the halo effect, you might bend down to talk to a child, so that they can be at your eye level. You might ask them the name of the toy they're holding. The child will enjoy this experience and other people will be impressed by what you are doing.



## Exploring expectations of different types of customers in the travel and tourism sector



### Meeting Expectations

- Your customer has been convinced to buy your product or service.
- You have given them expectations of what that product or service will provide.
- They will also have expectations based on previous customer service experiences and what their culture and ethnicity expects.
- Customers expect the information you provide them to be timely and accurate
- They expect their journey to be punctual.
- They expect their room to be clean
- They expect their family to be looked after (if applicable)

