# KNOWLEDGE ORGANISER

## YEAR 10 – TERM 5

THOMAS HALL SCHOOL

Think Like An
Environmentalist

Community, Collaboration and Challenge

# ATTENDANCE MATTERS

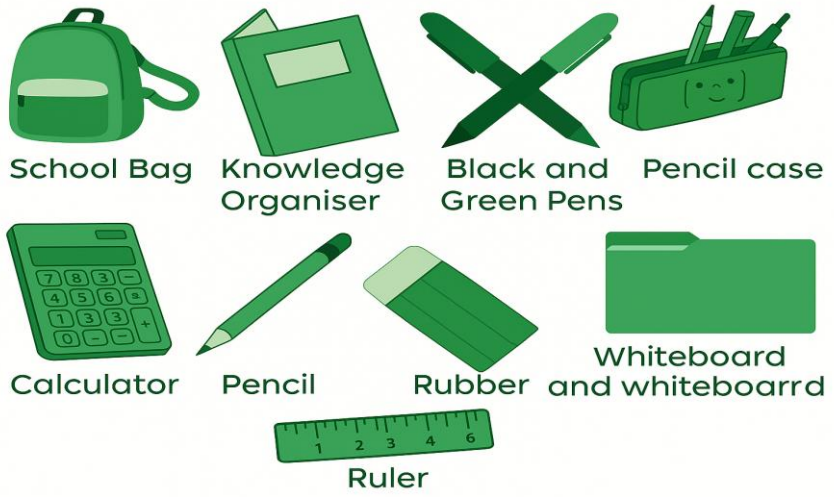
## EVERY DAY COUNTS
Missing just 1 day every 2 weeks is the same as missing 10% of the school year.

## LEARNING
Being in school allows you the best opportunity to learn.

## WELLBEING
Attending school supports your mental and emotional health.

## FUTURE SUCCESS
Regular attendonce at school is vitol for building the key skills needed for future employment

# EQUIPMENT




# SCHOOL DAY

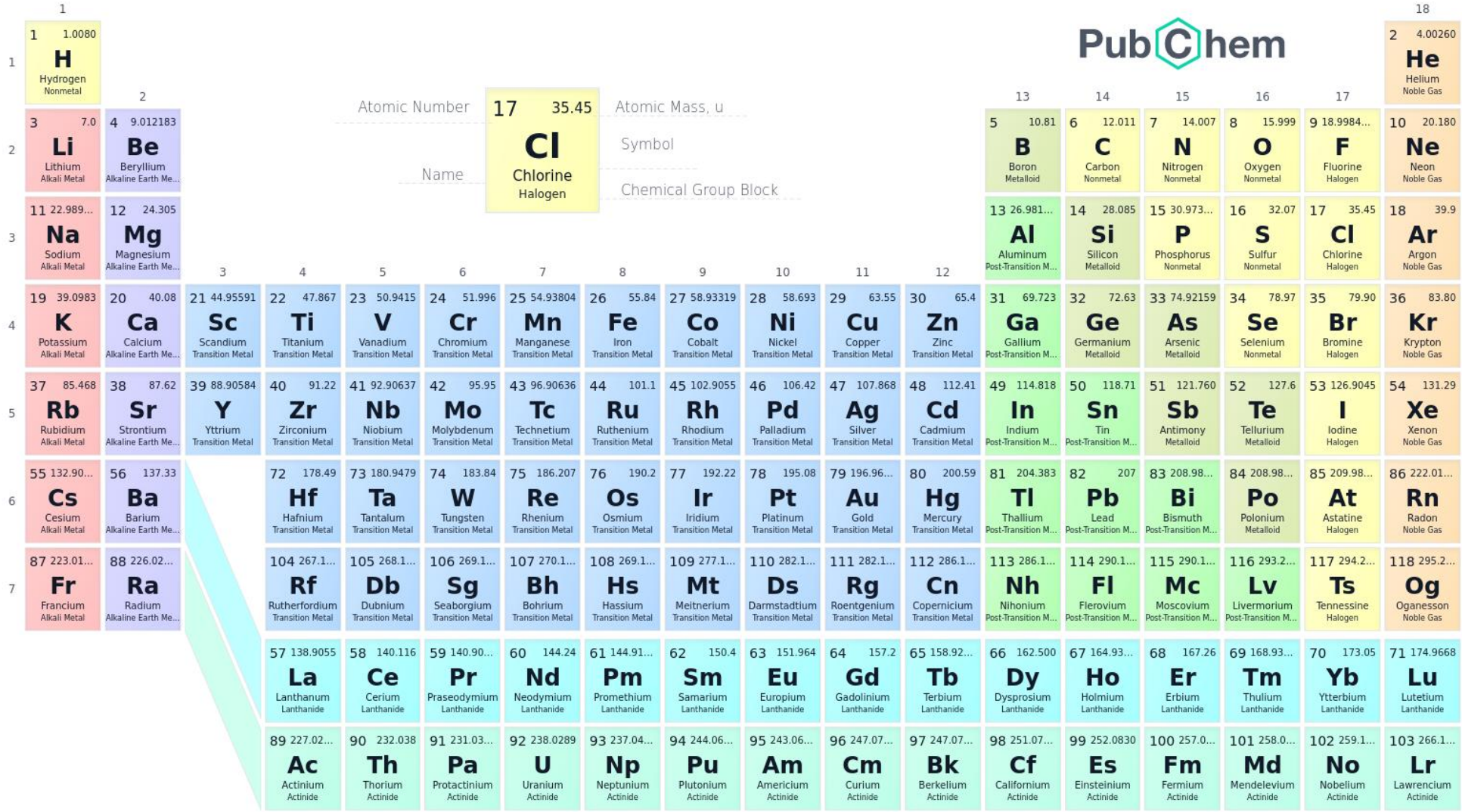
| | |
|---|---|
| 9:00–9:05 | AM Reg |
| 9:05–10:20 | Lesson 1 |
| 10:20–11:35 | Lesson 2 |
| 11:35–12:05 | Break 1 |
| 12:05–13:20 | Lesson 3 |
| 13:20–13:50 | Break 2 |
| 13:50–15:05 | Lesson 4 |
| 15:05–15:30 | PM Reg – assembly or guided reading |

# Multiplication Grid

| × | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

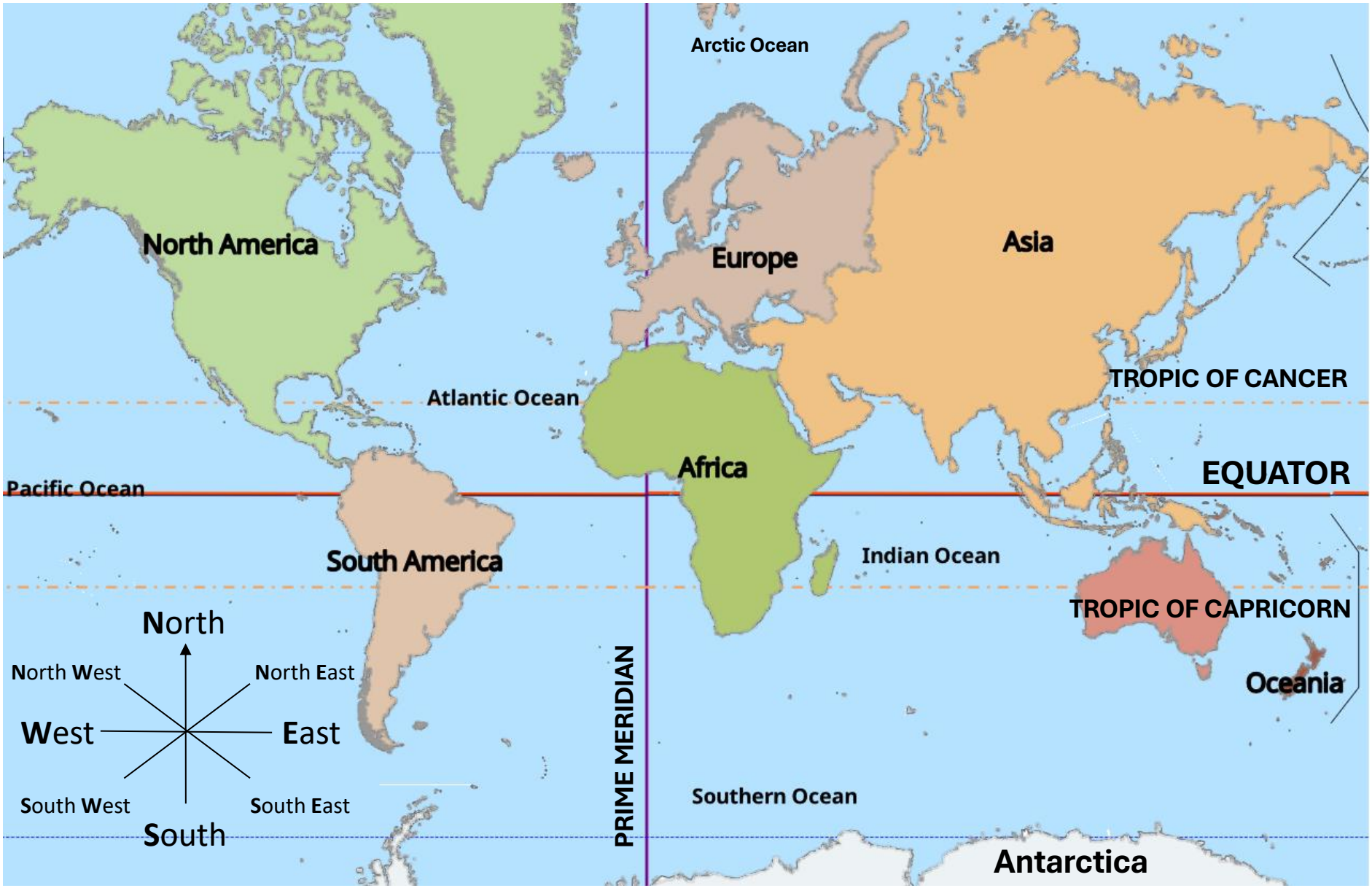
# PERIODIC TABLE OF ELEMENTS

## Chemical Group Block




01 Adjectives
THAT DESCRIBE:
age: young, old
colour: red, blue
condition: new, used
size: large, medium
speed: fast, slow
etc.
COMPARATIVE:
smaller, better...
SUPERLATIVE:
the smallest,
the worst,
the best...
02 Adverbs
PLACE:
here, there,
outside, everywhere,
upstairs, nowhere,
somewhere....
TIME:
ago, before, since,
yet, for, still,
afterwards...
FREQUENCY:
often, never,
sometimes, always
MANNER:
just, quite,
quickly, hardly,
well, carefully,
barely, almost,
scarcely,
beautifully...
03 Conjunctions
COORDINATING:
and, or, but,
yet, nor, for, so
CORRELATIVE:
both... and...,
either... or...,
just as... so...,
whether... or...,
neither... nor...,
not only... but also...
SUBORDINATING:
after, since, if,
while, although,
before, because,
unless
04 Determiners
TELLS US WHICH:
each, every,
some, none,
all...
TELLS US WHOSE:
my, your, her, his, its,
our, your, their (= possessive
adjectives or determiners)
05 Nouns
COMMON NOUNS: house, dog, laptop...
PROPER NOUNS:
(Capitalised)
London, Paris,
James, William,
Julia, Jennifer...
> VERBAL:
swimming...
> COLLECTIVE:
choir, jury...
> COMPOUND:
mother-in-law...
> COUNTABLE:
book, day...
> UNCOUNTABLE:
traffic, calm...
> ABSTRACT V. CONCRETE:
wit vs. road...
06 Prepositions
PLACE / DIRECTION:
in, at, on,
under, above,
across,
among,
between...
TIME:
in, at, on,
over, until, about,
during, before,
after, while,
through...
OTHER (agent,
phrase...):
by, with, on, over,
to, up, within,
beyond, for...
07 Pronouns
PERSONAL
(subject):
I, you, he, she, it,
we,
you, they
PERSONAL
(reflexive):
myself, yourself,
himself, herself,
itself, ourselves,
yourselves,
themselves
DEMONSTRATIVE:
this, these,
that, those
PERSONAL
(object):
me, you, him, her,
it, us, you, them
POSSESSIVE:
mine, yours, his,
hers, its, ours,
yours, theirs
INTERROGATIVE:
how, where,
when, which...?
INDEFINITE:
somebody,
anyone...
RELATIVE:
that, which,
whose, whom...
08 Verbs
ACTION:
to run, to organise,
to read, to think...
> Transitive
or
> Intransitive
LINKING:
to be,
to look, to appear,
to seem, to smell...
HELPING
(= AUXILIARY):
can, may,
will, must,
should, to be,
to have...
Word Classes

# World Map


Arctic Ocean
North America
Europe
Asia
Atlantic Ocean
TROPIC OF CANCER
Africa
EQUATOR
Pacific Ocean
South America
Indian Ocean
TROPIC OF CAPRICORN
Oceania
North
North West
North East
West
East
South West
South East
South
PRIME MERIDIAN
Southern Ocean
Antarctica

# Art

## KS4

## AQA GCSE Art, Craft and Design (2 years)

**GCSE Art and Design** focusing on key assessment objectives and allowing students to develop a personal project while building core skills.

- Students are provided with a choice of 4 topics, based on past exam paper in order to start their course work (A3 sketch book 60% of their final grade)
- In January Y11, students will receive the new exam paper and work on one topic of choice in a small sketch book in preperation for their 10h art exam in April (40% of final grade).

**AQA GCSE Art and Design Assessment Objectives:**

- **AO1**: Develop ideas through investigations
- **AO2**: Refine work by exploring materials and techniques
- **AO3**: Record ideas, observations and insights
- **AO4**: Present a personal and meaningful response


Introduction and Artist Research (AO1 & AO3)

- **Topic**: *Introduction to the Theme*
- Brainstorm
- Mind map ideas
- Sketchbook setup
- Homework: Bring 3 personal items/photos that represent you
- **Topic**: *Artist Research*
- Study artists exploring topic
- Analyze artworks in sketchbook (use formal elements, art vocabulary)
- Create responses in style of artist

- **Topic: *Observational Drawing & Personal Symbolism***
- Draw from personal objects/photos
- Begin incorporating symbolic elements
- Media: Pencil, ink, charcoal
- Photography
- Clay and ceramics
- Sculpture: stone, wood
- Digital media:
- Adobe Photoshop
- Animation and Film
- Premier Pro
- IMovie
- Textiles: sew, stitch, crochet, knit

Media Exploration and Developing Ideas (AO2)

- **Topic**: *Experimental Media Workshop*
- Explore: collage, monoprinting, mixed media
- Annotate outcomes in sketchbook
- Development and Refinement (AO2 &AO3)
- **Topic**: *Refining Composition and Style*
- Begin scaled versions of composition
- **Topic**: *Final Media Decisions*
- Experiment with chosen medium forfinal piece
- Annotate decisions (why this media,how it relates to theme)

**Topic**: *Final Preparatory Work*

- Complete final sketch/design
- Ensure AO1–AO3 are covered insketchbook
- Final Piece and Evaluation (AO4)
- **Topic**: *Start Final Outcome*
- Begin working on final piece (A2/A3format or 3D depending on focus)
- **Topic**: *Continue Final Outcome*
- Focus on detail, refinement, personalexpression

# Computer Science

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

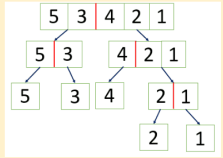
*Bubble sort Pseudocode*

```
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
  ENDIF
 ENDFOR
ENDWHILE
OUTPUT A
```

### Merge Sort

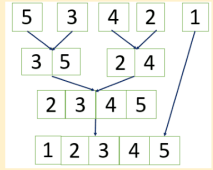
- Merge sort is a type of divide and conquer algorithm.
- There are two steps: divide and combine
- Merge sort works by dividing the unsorted list sublists. It keeps on doing this until there is 1 item in each list.
- Pairs of sublists are combined into an ordered list containing all items in the two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




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

### Merge sort Versus Bubble sort

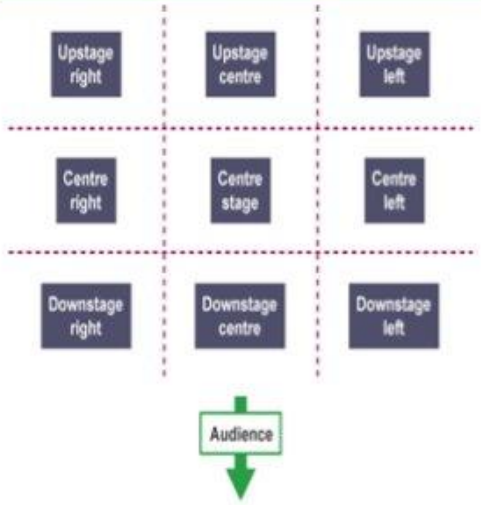
| | Advantages | Disadvantages |
|---|---|---|
| **Bubble sort** | Very simple and robust algorithm | Can be slow particularly for long lists. As the number of items increases the time taken for the algorithm to run increases dramatically. |
| **Merge sort** | Much faster than bubble sort especially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

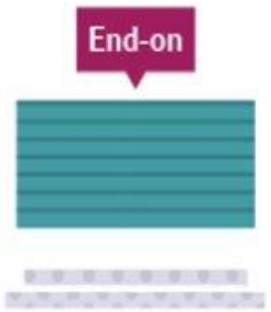
# Drama

## KS4 Drama GCSE
## Theatre Makers in Practice (40%)

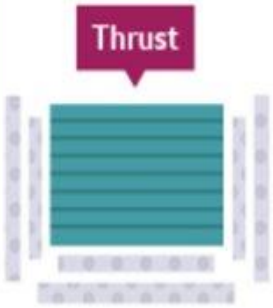
**Year 10 and 11** **Component 3: Section A**

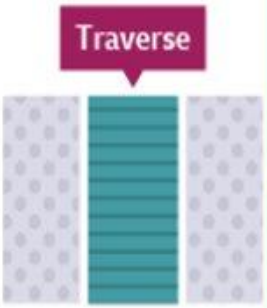
**Autumn 1 (Year 10)** Section B
-Theatre visit to watch a professional live theatre performance. This is an essential part of the Drama GCSE curriculum. Prepare notes of 500 words maximum for the written exam.
Suggested headings:
Performers/actors/roles/lighting/costume/set/ props/stage furniture/sound/staging/positive/negative evaluations.
**Term 1 Homework (Year 10)**: Complete evaluation notes and drawings for the 500 words for the mock exam on Section B.
**Summer 1 and 2** (Year 10) Practically explore 'An Inspector Calls' understand how to answer questions in Section A and Section B.
**Autumn 1 and summer term** (Year 11) Revise exam technique and structure of exam question
**Term 2 and 3 Homework Year 11**:practice papers and revision.



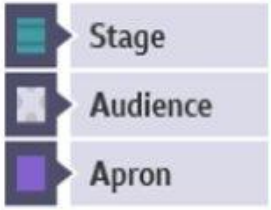












Section A: Bringing Texts to Life (AO3)
Section B: Theatre Evaluation (AO4)
You will have five questions of varying marks based on an unseen extract from *An Inspector Calls* by J.B Priestley.
Section A Questions
3(ai) Performer related question – will focus on vocal or physical skills (4 marks).
3(aii) Performer related question – vocal and physical skills (6 marks)
3(bi) Director question – a choice of three options either staging, set, costume, lighting, sound. (9 marks)
3(bii) Director question – focusing on creating characterisation of one or two characters in the play and how you would direct actors to demonstrate this through voice, physicality and stage space. (12 marks)
3(c) Design focus – choose from a choice of three options - either staging, set, costume, sound, lighting (14 marks)

**Sentence stems**
As an actor/director/designer, I would...to show
I would direct...
I would design...
I would direct the actor playing.....to... on the line '...', I would....
I would direct the sound/lighting engineer to....
For example...
My choice here could represent/show...
This would make the audience...
This reflects on the context of the play because ...(Q 3bi only)
Elsewhere in the play, during Act 1/2/3...(Q 3bii only).
WHAT? What would you decide?
WHY? Why would you do that?
HOW How do you want the audience to react?
P
E
E
L/L

# Drama

Performance skills are split into three strands:

Vocal Skills  Physical skills  Spatial skills

These are all the things we do to create:

- Good characterisation (embodiment of our character)
- An interesting and engaging performance
- Connection with our audience through emotion

## Vocal Skills

**Remember to pair up vocal skills eg: *a harsh down and low pitch* or *a slow place and emphasis on the word _____*.**

| Pitch | Volume | Tone | Pace | Emphasis |
|---|---|---|---|---|
| **High:** Nervousness, excitedness, shock, curious, upset/crying<br><br>**Low:** Assertiveness, anger, control, authority | **Loud:** Anger, assertiveness, confidence, hysterical, upset, excitedness<br><br>**Quiet:** Uncertainty, sadness, control/level-headed, upset, shock | **Soft:** Calm, love, happiness, nervous, sad, given up<br><br>**Harsh:** Angry, aggression, confidence, rejection, | **Quick:** Nervousness, excitedness, anger, passion, shock,<br><br>**Slow:** Confused, sadness, confidence, control, authority, uncertainty, | A word you stress for meaning.<br>'She has **nothing** more to tell you' suggests Gerald is saying Sheila hasn't got anything else to say.<br>'She has nothing more to tell **you**.' suggests Gerald is saying she has got more to say but not to Inspector Goole. |

# Drama

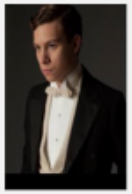
## KS4 Drama
## Bringing Texts To Life

Year 10 and 11 **Component 3: Section A**

**Plot summary**

**An Inspector Calls by J.B Priestley is a play that revolves around the apparent suicide of a young woman called Eva Smith. In the play, the unsuspecting Birling family are visited by the mysterious Inspector Goole. He arrives just as they are celebrating the engagement of Sheila Birling to Gerald Croft. The Inspector reveals that a girl called Eva Smith, has taken her own life by drinking disinfectant. The family are horrified but initially confused as to why the Inspector has called to see them. What follows is a tense and uncomfortable investigation by an all-knowing Inspector through which the family discover that they are all in fact caught up in this poor girl's death.**

**Mr Birling**
**A successful business man in Brumley**



**Eric Birling.**
**The son and youngest of the two Birling children.**

**Mrs Birling**
**The wife of Mr Birling.**
**She is obsessed with etiquette and her status in society.**

**Sheila Birling.**
**The eldest child and daughter of the Birlings.**
**She is engaged to Gerald Croft.**

**Gerald Croft is an upper-class businessman.**
**His father owns Crofts Limited, a rival company to the Birling's. He is engaged to Sheila.**

The context of a play is the circumstances in which it happens. This helps you to understand it. JB Priestley's play, *An Inspector Calls* is set in 1912 but written in 1945. We need to remember that the play is set before both world wars and at a time when the British Empire was still a force to be reckoned with internationally. The play is about a family who are visited by a character who appears to be a police inspector. During the discussion that follows, it becomes clear that everyone in the family, including Gerald, the daughter's fiancé, has contributed to the death of a young girl who took her own life after her treatment at their hands. She was sacked from two jobs and had two unfortunate love affairs and was turned away by a charity committee while pregnant. Pregnancy outside of marriage was greatly frowned upon in this period, another thing to consider when looking at the play's context.

The play is made theatrically effective by the twists and turns in the story and an intriguing chain of events. It then asks questions about blame and personal responsibility, whether the girl actually existed and if the policeman is an imposter or even a spirit.

This is the key moral point of the play. Priestley's message is that we all have a duty to society and it will collapse if we don't honour that duty. Class is also a very important theme in this play. The historical context is that class was still very rigid in Edwardian times and it was thought that the upper classes should never mix with the lower classes. The divide between the upper and lower classes were very apparent.

# Drama

## The context of 'An Inspector Calls' by J.B Priestley. Section A

### World Wars

**1912**

First World War starts in two years. Mr Birling's optimistic that there would not be a war is wrong.

**1945**

The Second World War ended on 8 May 1945. People were recovering from six years of warfare.

### Gender Roles

**1912**

Women were considered to be lower than men. All a well off women could do was get married; a working woman was seen as a poor person.

**1945**

As a result of the wars, women had earned a more valued place in society.


### Views and Opinions

**1912**

The ruling classes saw no need to change the status quo.

**1945**

There was a great desire for social change.

# Drama

## Lighting

### Colour Symbolism

**Blue**
Sadness, moonlight, night time, eerie, loss, water

**Red**
Blood, death, danger, anger, conflict

**Green**
Scientific, uncomfortable, eerie, unnatural, supernatural, jealousy, nature, forestry

**Yellow**
Outdoors, sunlight, morning/evening, happy, joy

**Pink/purple**
Love, passion, royal

**White**
Clinical, washed out, bright/can see everything, artificial, eerie

FRESNEL - used for a softer edged effect, with a diffusing lens in front of the lamp. It's useful for good overall light when used with others. Coloured filters can be used with this lamp.

SPOT- has a hard-edged effect, used to light characters or elements on the stage. Coloured filters can be used with this lamp.

FLOOD - produces a clear wide-angled light, but there's little control over the spread of the light. Coloured filters can be used with this lamp

STROBE- a flashing light, used for special effects. It's often used to give the effect of old movies. It produces a jerky effect on the movements of actors when used on its own

GOBO- a sheet inserted on a frame at the front of the light with a design cut into it. It filters the light, creating a picture effect on the stage. EG: to create the leaves of a forest, or the bars of a prison.

COLOURED GELS- Added to the front of some lanterns so that they throw coloured light onto the stage.

## Sound

### Types of Sound

**Diegetic:**
Sound that characters on stage can hear. E.G Telephone ringing that a character answers

**Non Diegetic:**
Any sound that a character cannot hear, but instead creates the mood or atmosphere for the performance. For example, if a piece of music is played to accompany a scene (called underscoring), but cannot be heard by the characters, then it is non-diegetic.

### Key Types of Sound

**Sound effects:**
Naturalistic effects to help the realism such as a doorbell, phone ringing, birds tweeting.

**Ambient sound:**
Creating an atmosphere such as synths, soundscapes, symbolic sounds like water/waves

**Music:**
Songs or pieces of instrumental music

# Drama

## Costume

### 1912 Fashion

**WOMEN**

Evening dresses were usually made of fine silks, with long length, open necklines and short sleeves. Closures were usually hidden under the various layers.
They were tightly fitted to the body.

Hair was usually tied up. The 'Gibson up do' was very fashionable at the time. Or hair to be curled and clipped up on top of the head. Sometimes for special occasions women would wear some form of hair accessory such as an encrusted head band or clip.

### 1912 Fashion

**MEN**

'White tie and tails' which was a black tail coat with white waistcoat. Or a Tuxedo was a more informal alternative to the tailcoat. Both tails and tuxedo had satin lapels. Bow ties would be either white or black.

Short slicked hair (usually with a form of gel) with parting. Full moustaches were popular.

## Set Recap

Wood and brass were popular materials to make furniture and decor with.

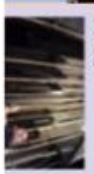
1912 Upper Class Homes

Chandeliers, large portraits and large draped curtains were popular piece of decor to have in an upper class home.

Floral wallpaper and floral patterns in general were very popular.



Examples of An Inspector Calls Sets



Flies

Truck

Backdrop

Flat

Set pieces

Projection

Decking

Door Flat

**The role of set in theatre: the setting (the location), the time period and communicating themes or symbols to communicate messages of the play.**

# English

# ENGLISH LANGUAGE PAPER 1 SECTION A

**When we analyse a text, we are looking at the following:**

- Word choices used by the author – what do the words mean? What do they make you think of (their connotations)? What word class do they belong to?
- Techniques/linguistic devices – identify them and consider their purpose, use and effect
- Punctuation and sentence structures – do they change the way you read the piece? Does it tell us about the tone in which something is communicated? Does it make us read the text faster or slower?


**Linguistic devices:**

| | |
|---|---|
| Verbs, adjectives, adverbs | Puns |
| Rhetorical questions | Punctuation |
| Fact and opinion | Onomatopoeia |
| Emotive vocabulary | Simile |
| Exclamations | Superlatives |
| Questions | Comparatives |
| Alliteration | Connectives |
| Sibilance | Synonyms |
| Magic three/rule of three | Prepositions |
| Pronouns | Euphemism |
| Formal and informal tone | Dysphemism |
| Direct and indirect speech | Concrete nouns |
| Person/Tense | Abstract nouns |
| Imperatives | Juxtaposition |
| Humour | Oxymoron |
| Personification | Hyperbole |
| Metaphor | |

**Words to show interpretation and critical response:**

| | |
|---|---|
| Suggests | Effectively |
| Implies | Successfully |
| Indicates | Essentially |
| Highlights | Cleverly |
| Demonstrates | Clearly |
| Conveys | |
| Evokes | |
| Symbolises | |
| Refers to | |
| Exaggerates | |
| Connotes | |
| Represents | |
| Reveals | |
| Perhaps | |
| Possibly | |
| Could | |
| Maybe | |

# English

## Question 1: Select four things (multiple choice)...

AO1

### Top Tips

- Will ask you to read an extract and find four bits of information showing something.
- Worth 4 marks, so you have to find 4 separate points
- Spend 5mins on this question.

## Question 2: How does the writer's use of language...

AO2

### Top Tips

- Here, you are looking at what the author has done to create meaning. This means you should be looking at Word choices used by the author (their meaning and connotations)

Techniques used by the author and their effect

- Punctuation and sentence structures and how they create effect
- This means you have to use quotations
- You will be looking for information that is suggested, not obviously said.
- You must look at breaking down meaning in a quotation, then explain how it links to the focus of the question.

**SEE THE BACK OF THE SHEET FOR MORE DETAILED TIPS ON HOW TO ANALYSE**

## Question 3: How does the writer use structure...

AO2

### Top Tips

**Structural features you could talk about:**

- How the writer starts and ends the text. Is there a link? Why?
- The order that things are revealed to the reader. Why has this been done?
- How paragraphs are organised and linked/ordered.
- Stream of consciousness
- Foreshadowing
- Flashbacks/memories
- Paragraph organisation
- Where the extract comes from in the text (usually explained in the introduction before the extract).
- Time frame
- Juxtaposition of ideas
- Hooks and withheld information
- Links between opening and closing paragraphs
- Single sentence paragraphs
- Repetition and other recurring patterns
- Narrative perspective
-

**Some useful sentence starters:**

At the beginning of the text...
We are introduced to the idea of...
The use of ... foreshadows...
The use of the single sentence paragraph conveys the idea that...
This links to the ending/beginning of the text because...
The linear/chronological structure of the extract shows...
The development of character is shown
The mood clearly changes on line...
The repeated use of... builds a sense of...
By changing narrative perspective...

## Question 4: To what extent do you agree?

AO4

### Top Tips

Here, you will be given a statement about a text. And you have to explain whether you agree or disagree with it. Your answer must:

- Give reasons for your answers; 'this successfully helps us to understand the characters ***because***...' If you don't use the word because, you are not explaining your reasons.
- Comment on the effects achieved by the author that have helped you to have your opinion.
- Support your comments with relevant quotations.
- Comment on the overall effects that are created by the author.
- You must refer to whether you think the extract is successful/effective or not with its use of techniques.

**Possible reasons writing might be engaging/effective/interesting:**

- Detailed, realistic descriptions (makes us feel like we are there, puts us in the setting, experiencing what the characters are experiencing).
- Effective use of vocabulary (carefully chosen words with clear connotations).
- Effective use of techniques to include the reader (e.g. simile or metaphor to help us see a clear image in our minds, onomatopoeia to help us be part of the setting, rhetorical questions to make us think of the answer, etc).
- Sentence structures that create pace or tension
- Clear understanding of the mood/atmosphere/characters
- Creates sympathy

## River Erosion – Tier 3

**Fluvial landforms** – Landforms formed by river processes.

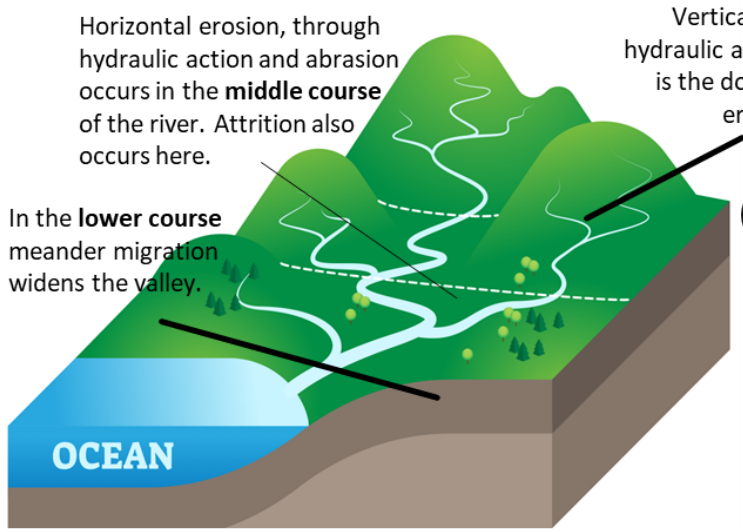
**Gorge** – a narrow, steep sided valley, often formed as a waterfall retreats.

**Interlocking spurs** – Ridges projecting out on alternate sides of a valley.

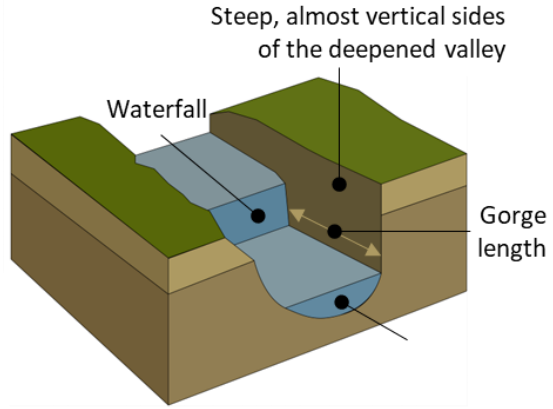
**Plunge pool** – A deep depression at the base of a waterfall.

**Vertical erosion** – Downward erosion of a river bed.

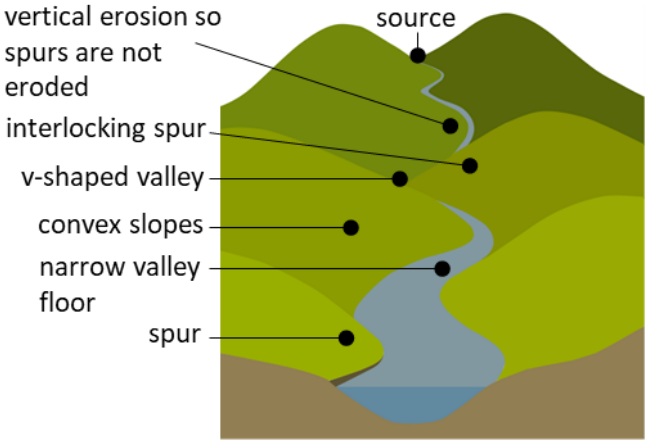
**Waterfall** – A sudden descent of a river or stream over a vertical or very steep slope in its bed.



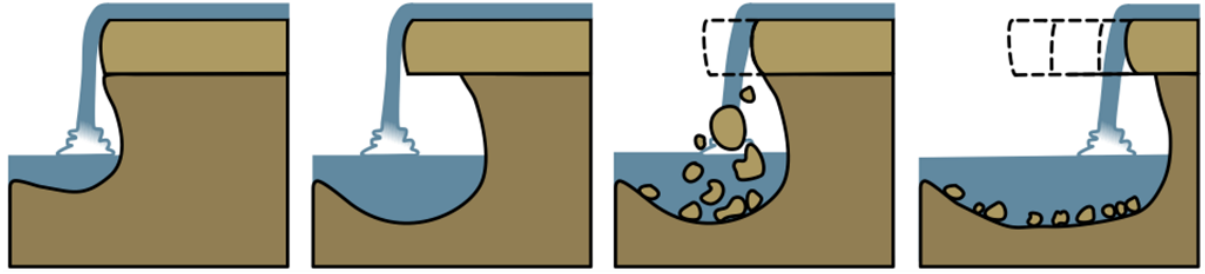

## Upper Course: Gorge




## Upper: Interlocking Spurs




## Upper Course: Waterfall



1. Waterfalls occur in the upper stage of a river where a band of hard rock overlies a softer rock. Falling water and rock particles erode the soft rock below the waterfall, creating a plunge pool.

2. The soft rock is undercut by erosional processes e.g. hydraulic action & abrasion creating a plunge pool where water & debris swirl around eroding the rock creating an overhang.

3. The layer of hard rock overhang above the plunge pool collapses as its weight is no longer supported.

4. Erosion continues and the waterfall retreats upstream leaving behind a gorge.

UK Landscapes 1: Rivers
Paper 1, Question 3

# Geography

## River Erosion/Deposition

**Helicoidal flow** – The cork-screw-like flow of water in a meander.

**Meander** – One of a series of bends in a river.

**Oxbow lake** – A curved lake formed when a river cuts off a meander.

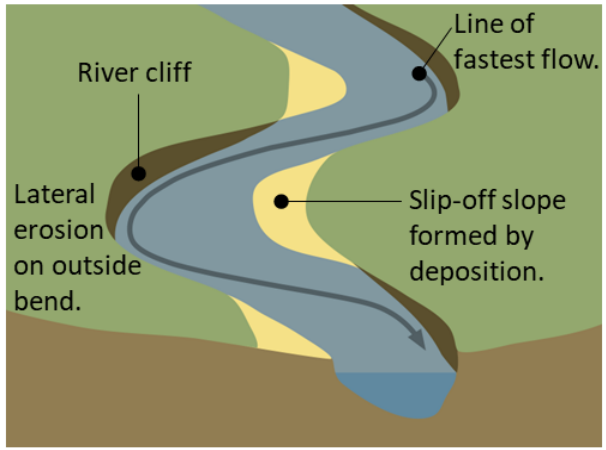
**Pools** – Areas of deep water and greater erosion in a river.

**Riffles** – Areas of shallow water created by the deposition of coarse sediment.

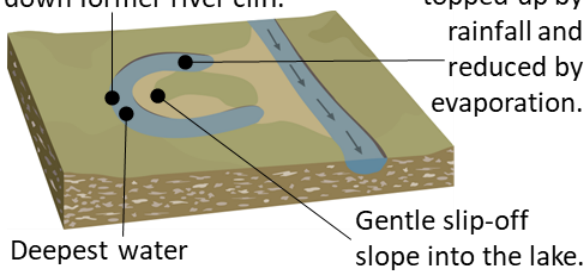
**River cliff** – Cliff formed by lateral erosion on the outside bend of a meander.

**Slip-off slope** – A gently sloping river beach formed on the inside of a meander.

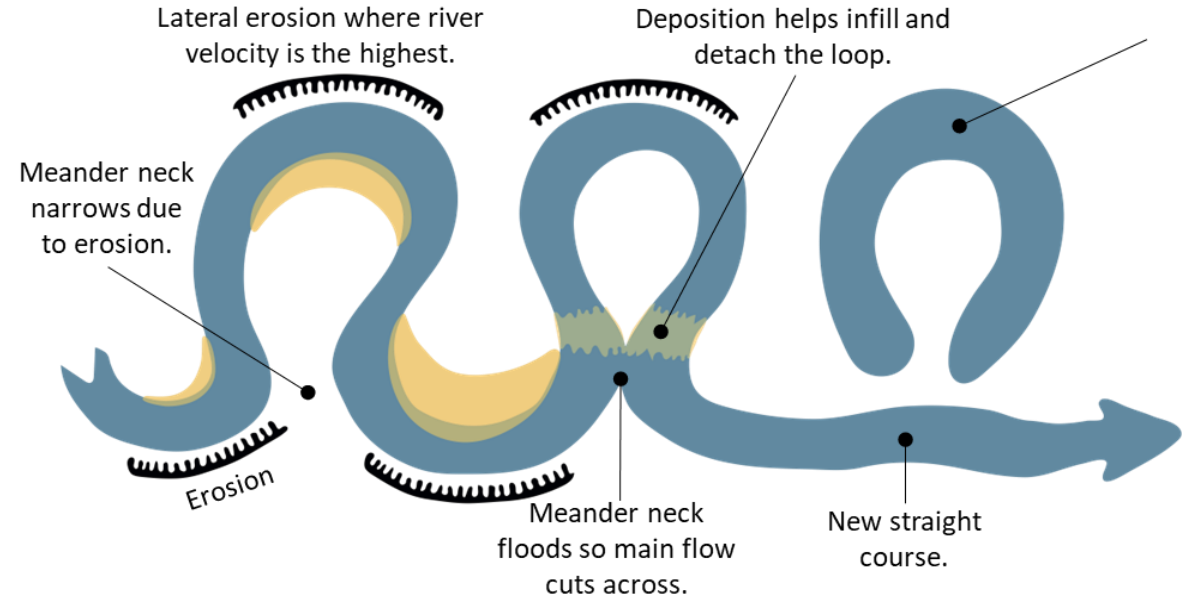
## Mender characteristics




## Oxbow lake characteristics




## Middle Course: The formation of an oxbow lake



UK Landscapes 1: Rivers
Paper 1, Question 3

# Geography

## Transport & Deposition

**Deposition** – Material that is being transported by a river is dropped.

**Transportation** – The process by which a river carries its load.

**Traction** – The rolling of boulders and pebbles along the river bed.

**Saltation** – Particles bouncing along the river bed.

**Solution**– Soluble particles are dissolved into the river.

**Suspension** – Fine solid material held in the water while the water is moving.

**Estuary** – The tidal mouth of a river where it meets the sea.

**Flood plain** – The flat area forming the valley floor either side of a river.

**Levèe** – An embankment of sediment along a river caused by flooding.

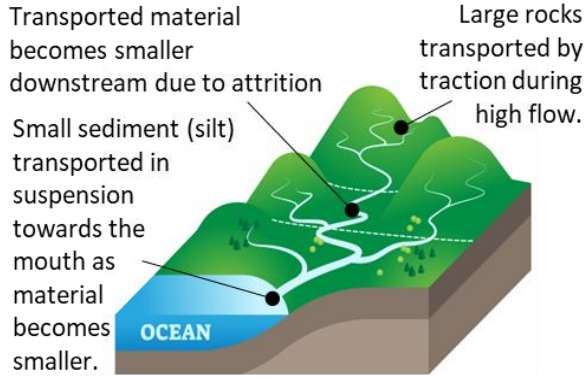
**Mud flats** – A stretch of muddy land left uncovered at low tide.

**River bluff**– A steep and broad hill found along the edge of a flood plain.

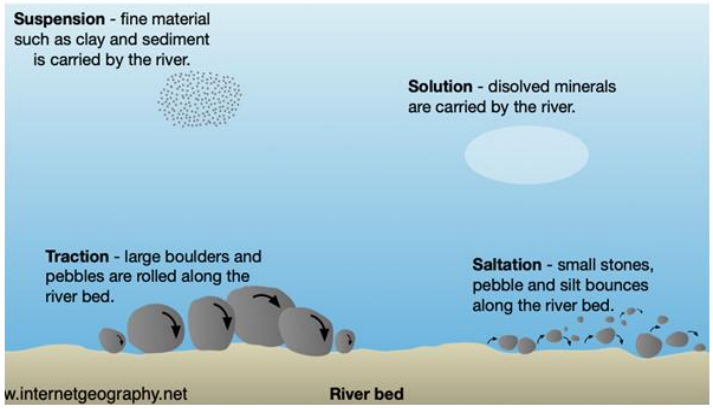
**Silt** – fine sand and clay carried by a river and deposited as a sediment.

## River Transportation

**Transportation is affected by river velocity.**

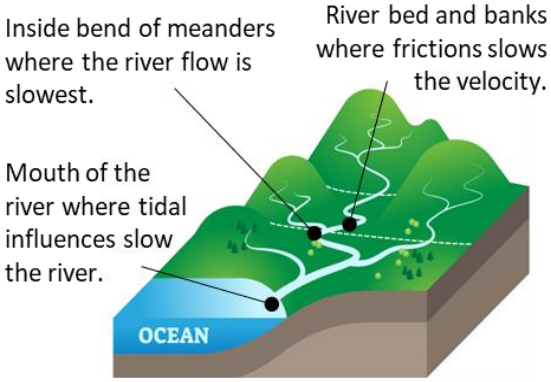



## River Transportation

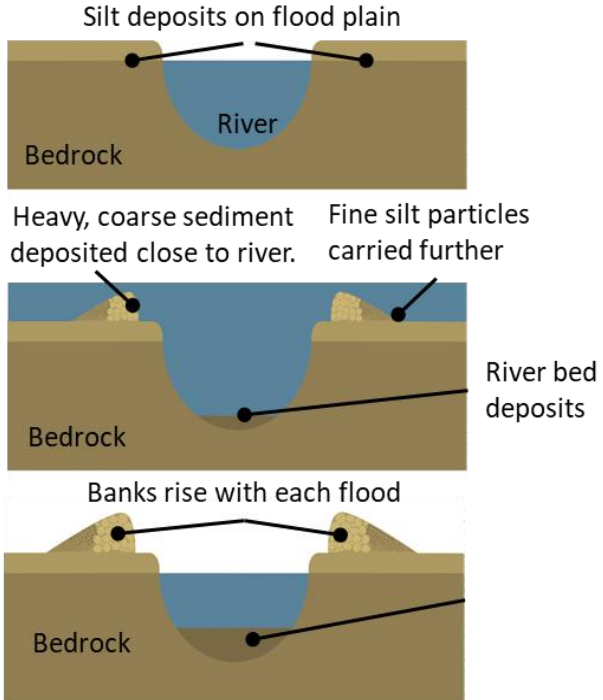



## River Deposition

**Deposition occurs when a river loses velocity.**



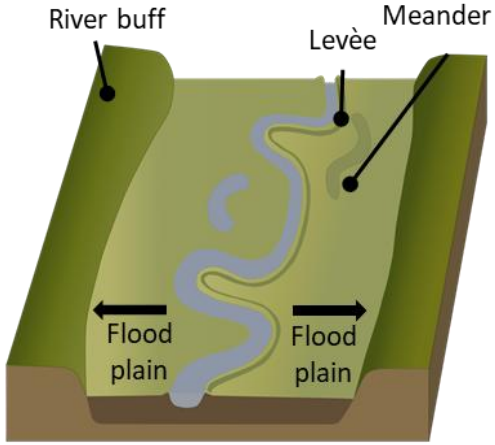

## Lower course: Levèe Formation



UK Landscapes 1: Rivers
Paper 1, Question 3

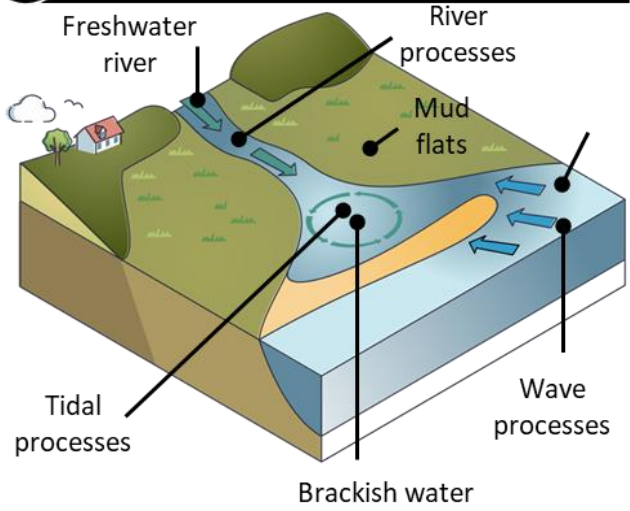
# Geography

## Flood Plain Characteristics




Flood plain widens due to meander migration.

## Estuary Characteristics




## River Landforms on the River Tees

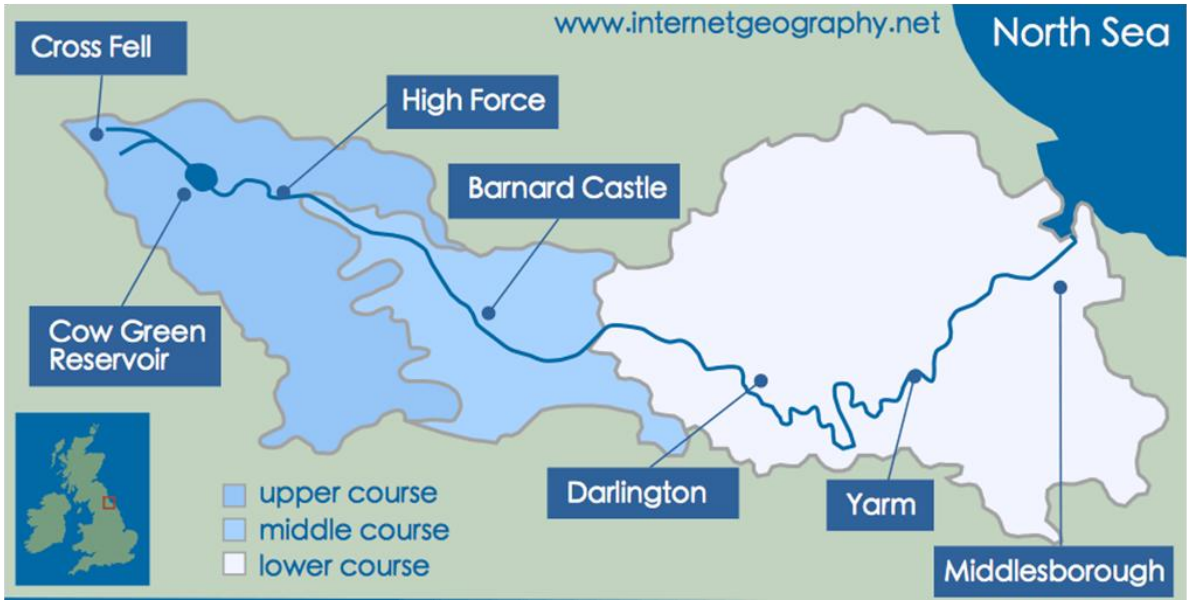
**High Force**
Waterfall and gorge

The River Tees drops around 20m into a plunge pool at High Force. The river then flows through the gorge it has formed as it retreats. Resistant dolerite, an igneous rock lies on top of less resistant limestone.

As the river plunges over the waterfall it undercuts the weaker limestone to form an overhang. This eventually collapses forming the gorge as the waterfall retreats.

**Yarm**
Meanders, levees and floodplains

In its lower course, the River Tees has extensive meanders, particularly between Darlington and Yarm. The meandering river has widened the river valley to create a significant floodplain. There are also levees along this stretch of the River Tees that have formed when this low-lying area has experienced flooding in the past.



# Health and Social Care

R032

## 3.3 The importance of active listening

Active listening involves demonstrating an interest in and responding to what a person is saying by fully concentrating on what is being said rather than just passively hearing.
Active listening skills include:

- Having an open and relaxed posture
- Making eye contact, looking interested,
- Nodding in agreement
- Showing empathy, reflecting feelings
- Clarifying(by asking questions that cannot be answered with a one word response
- Summarising to show understanding of key points(paraphrasing)

39.

## 3.4 The importance of special methods of communication

**Advocate**
An advocate is some who speaks on behalf of a service user who cannot speak up for themselves. For example:

- A young child
- a service user with a learning disability
- An older person with dementia
- Someone who has been assessed as having reduced mental capacity

40.

An advocate for a child could be a parent or carer; an advocate for an adult could be a friend or a carer. A professional advocate could be provided by, for example, a charity organisation such as Age UK to represent an older adult.

An advocate will represent the views, needs and interests of service users who are unable to represent themselves, without judging them or giving their own personal opinions.

An advocate can:

- Go with a service user to meetings or attend them for them
- Help a service user to find and access information
- Write letters on the service users behalf
- Speak for someone at a case conference to express their wishes

An advocate will:

- Be completely independent and represent the service user's views, not their own personal opinions
- Ensure the service user's rights and needs are recognised
- Represent the service user's wishes and views
- Speak for someone who is unable to do so for themselves

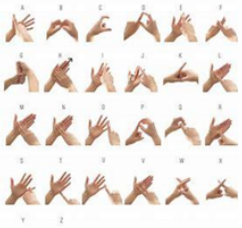
An advocate will not:

- Judge the service user
- Give their own personal opinion
- Make decisions for the service user

41.

**British Sign Language**
BSL involves using the hands and fingers to make visual signs. This is used by people who have impaired hearing and by other people to communicate with them.

42.



**Other communication strategies:**

43.

**An interpreter** – who will convert a spoken or signed message from one language to another, and speak it

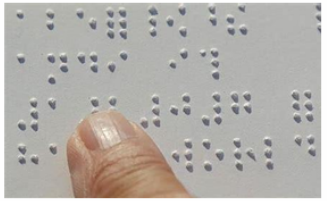
**A translator-** who will convert a written message from one language to another , and write it.

**Makaton**- a system that uses a combination of speech, gestures, and pictures to communicate.

**PECS**- Picture Exchange Communication System. It is a method of communicating where pictures are used to indicate what is needed, and can be useful for individuals with communication difficulties such as dementia or autism.

**Braille**

This is a method of communication used by visually impaired or blind people. It was devised by Louis Braille in 1829. it consists of a series of dots which are read by touch. Each character is made up of raised dots; the raised dots may be in any of 6 positions within a rectangle. There are 64 possible combination of dots.



**Voice activated software**
Speech activated programs allow users to

- Write text
- use the internet
- Send emails
- Use application with their voice rather than a mouse or keyboard

44.

These programs can be very helpful to people who do not have full use of their hands
For example, someone with cerebral palsy may have difficulties with fine motor skills , which make handwriting and using a keyboard challenging.

Below are some examples of software:

- Dynavox- speech generating software . The service user touches a screen that contains text, pictures, and symbols which software then converts into speech.
- Lightwriter- is a text to speech device . A message is typed on a keyboard , displayed on a screen and then converted into speech

R032

3.5 (continued)

Ways service providers can avoid creating communication barriers

| | 47. |
|---|---|
| Not being patronising | • No sarcasm or talking down to the person<br>• Not ignoring their views and beliefs because they are different<br>• Use of positive body language e.g. nodding in agreement<br>• Being polite<br>• Make them feel that they are being taken seriously<br>• Being patient and listening to repetitions |
| Using vocabulary that can be understood | • No jargon<br>• Specialist terminology must be explained<br>• Age-appropriate vocabulary<br>• Simplified language , for example with young children, individuals with a learning difficulty or patients with dementia.<br>• Using interpreters/translators |
| Adapting communication to meet service user's needs or the situation | • Emphasising important words<br>• Slowing pace if necessary<br>• Increasing the tone of voice, but not shouting<br>• Repetition where appropriate<br>• Using gestures, flashcards, pictures<br>• Making use of aids to communication e.g. loop system<br>• Using specialist methods e.g. Braille, BSL.<br>• Technological aids, such as Dynavox |
| Listening to the service user's needs | • Active listening- demonstrating interest to what the person is saying, using body language to show a positive reaction<br>• Ask the person – do not assume you know what they want<br>• Concentrate on what the person is saying |


# Health and Social Care

R034

## Unit R034: Knowledge Organiser

### Topic 1: Therapies & Their Benefits

- **Types of therapies**: sensory, cognitive, expressive, physical

- **Benefits (PIES)**:
  - **Physical**: improved mobility, coordination
  - **Intellectual**: cognitive stimulation, memory enhancement
  - **Emotional**: reduced stress, improved self-esteem
  - **Social**: social engagement, building relationships

### Topic 2: Creative Activities & Their Benefits

- **Examples**:
  - Physical: painting, dancing, crafts, sports
  - Intellectual: puzzles, quizzes, ICT, reading
  - Emotional: storytelling, photography, crafts
  - Social: singing, group games
  - Sensory/Imaginative: gardening, drama, scrapbooking

- **Benefits mapping to PIES**:
  - **Physical**: motor skills, fitness, stress reduction
  - **Intellectual**: concentration, problem-solving
  - **Emotional**: confidence, self-expression
  - **Social**: interaction, reduced loneliness

### Unit Overview – R034

**Assessment**: Set Assignment (NEA) – Plan, deliver, evaluate a creative or therapeutic activity

- **Topics Covered**: 1) Therapies & their benefits. 2) Creative activities & their benefits. 3) Planning a creative activity. 4) Delivering & evaluating performance

### Topic 3: Planning a Creative Activity

**Individual abilities to consider**: physical, cognitive, emotional, social, cultural beliefs, gender

**Planning essentials**: - Clear **aims** (e.g., improve fine motor skills) – ensure aims are SMART: Specific, Measurable, Achievable, Relevant, Time-bound

- Accurate **timescales** (setup, delivery)
- Required **resources** (e.g., colored overlays, non-slip mats)
- **Safety measures**: protective equipment,
- **Methods**: individual vs group, demonstration, communication modes
- **Feedback methods**: questioning, questionnaires

### Topic 4: Delivering & Evaluating Your Performance

- **Effective delivery**:
  - Apply skills: empathy, clear communication, adapting to individuals
  - Use person-centred values: dignity, respect, partnership, choice (link with R032)

- **Evaluation**:
  - Reflect on planning vs delivery: what worked, what didn't
  - Consider feedback (from participants and self-reflection)
  - Evaluate against intended benefits (PIES effects) for individuals

### Assessment Tips (NEA Tasks)

- **Task 1**: Show understanding of factors and benefits (PIES) with detail
- **Task 4**: Explain how both therapies and creative strategies support individuals
- **Clear structure**: follow AO1–AO4—recall, apply, analyze, evaluate knowledge

### Quick Revision Checklist

- ❑ Memorised PIES categorisation for therapies & activities
- ❑ Can list examples of each creative activity category
- ❑ Understand how to plan: aims, safety, methods, resources
- ❑ Know how to deliver: person-centred, communication, adaptability
- ❑ Able to evaluate: link outcomes to aims & benefits

### Bringing it all together

Unit R034 lets you **apply theory** through real-life planning and delivery. Focus on the **PIES model**, ensure activities are **person-centred**, and include clear **evaluation** steps. With structured planning and reflection, you'll confidently meet the **assignment's marking criteria**.

# History

## Anglo-Saxon c.1000-.1066

### New Definitions of Crime

- The Kings and nobility decided on crimes.
- **Crime against the person**: murder, fights.
- **Crime against property**: poaching, arson.
- **Crime against authority**: treason, attack on a person of a higher status.

### Methods of Law Enforcement

- **Responsibility of King** to maintain King's Peace.
- **Local Collective Responsibility**: Hue and Cry, Tithings, Hundreds, Shire Reeves,
- **Role of the Church**: Religious oaths, trail by hot water, hot poker, cold water, blessed bread to decide guilt or innocence

### Punishments

- **Public punishments:** Stocks and pillory
- **Fines:** Wirgild
- **Capital Punishment:** Hanging
- **Corporal Punishment:** Branding, maiming

## Norman Britain 1066 - 1154

## Medieval: c.1000 - c.1500

### *New* Definitions of Crime

- **William the Conquer** asserts his control
- **Deals violently** with Anglo-Saxon Rebels
- **Builds Castles**
- **Feudal System**
- **Forest Laws & poaching & outlaws**
- **Murdrum Fine**

### Methods of Law Enforcement

- **Collective Responsibility** still ongoing.
- **The King's Mund** (The King's Peace)
- ***NEW* Trial by Combat** for nobility.

### Punishments

- Similar punishments to Anglo-Saxon **BUT**
- ***NEW* Wergild** Fine paid to the King
- More brutal punishments
- Community punishments
- Increased use of death penalty to show authority as King.

## Late Medieval 1154-1500

### Definitions of Crime

- The Kings highly influenced by nobles when deciding new laws to protect their own interests against the poor.
- ***NEW LAW* Statute of Labourers 1351**
- ***NEW LAW* Heresy 1382**

### Methods of Law Enforcement

- Collective Responsibility ongoing
- ***NEW*** Henry II **Assizes of Clarenden** – set of rules and a jury for law courts.
- Prisons to hold suspects before trial.
- Royal Judges and Justices of Eyre visit every county twice a year.
- **Standardised** written instructions given to Shire Reeves.
- ***NEW*** Coroners and Justices of Peace.

### Punishments

- Corporal punishment as deterrent
- ***NEW* Hanged, drawn, quartered** for the crime of treason.

## The Influence of the Church

- **A huge influence of the Church over attitudes and law & order.**
- **Church Courts more lenient on punishments.**
- **The Pope ends Trial by Ordeal to encourage law courts & juries.**
- **Henry II challenged the Church's power – dislike of Benefit of the Clergy and seeking religious sanctuary.**

# History

**Early Modern 1500 - 1700** → **18th and 19th century 1700 - 1900** → **Twentieth Century 1900 - Present**

## Early Modern: c.1500 - c.1700

### Main causes of change

- ❑Religion
- ❑Politics
- ❑Changing attitudes
- ❑Role of monarchs
- ❑Growing towns
- ❑Population
- ❑Exploration
- ❑Trade/Economy

### New Definitions of Crime

**MANY RELIGIOUS INFLUENCES IN THIS TIME**

***NEW*** Heresy and Treason – think changes in religion (Catholic Vs Protestants).
***NEW*** Vagabondage/vagrancy Laws:
- The Vagrancy Act
- Relief of the Poor Act
- The Poor Law

***NEW*** Smuggling
***NEW LAW*** 1671 Game Act (poaching still a social crime)
***NEW*** Puritan Laws 1653 – Strict Puritan laws after the Civil War
***NEW*** Witchcraft

### KEY INDIVIDUAL: Matthew Hopkins & Witchcraft

- ❑Why did so many believe in witchcraft?
- ❑What were the laws against it?
- ❑How were individuals put on trial?
- ❑What was the punishment?
- ❑What was the role of Matthew Hopkins as a key individual?

### KEY EVENT: The Gunpowder Plot 1605

- ❑ An example of religious and political influences.
- ❑ An example of harsh Bloody Code punishments
- ❑ An example of how laws change as a result of crime: 1605 **Thanksgiving Act**, 1606 **Popish Recusants Act**

### CHANGE — Methods of Law Enforcement

***NEW*** The wide use of Town Constables
***NEW*** The Night Watchman
***NEW*** Thief Taker

### SIMILARITY

- ❑**Collective Responsibility** still effective in smaller towns and villages. Hue and Cry etc.
- ❑Still **no national form of organised** policing
- ❑**Standards** of law enforcement varied across the country.
- ❑**Rich** better protected than the poor.

### CHANGE — Punishments

- ❑***NEW*** **Transportation** to North America.
- ❑***NEW*** **Early prisons** as a form of punishment.
- ❑***NEW*** **Houses of Correction** and hard labour.
- ❑***NEW*** The start in the belief of the **BLOODY CODE**.

### SIMILARITY

- ❑**Corporal punishments** remain
- ❑Punishments as a **deterrent** and **retribution** remain.
- ❑**Positive attitudes** to harsh punishments.

# History

# Industrial Revolution: c.1700 - c.1900

## New Definitions of Crime

**SIMILARITY**

**SMUGGLING:** Still a social crime, still hard to tackle, declined as import duty reduced.
**POACHING**: Still a social crime by the poor, not often reported, enforced by the rich.
**HIGHWAY ROBBERY**: A very minor crime in previous era.
**WITCHCRAFT:** Still some poorer, rural belief in witchcraft.

**CHANGE**

**SMUGGLING:** Increased, gangs, punished harshly, rich supported it for luxury goods.
**POACHING**: Increased, gangs, harsher punishments, 1723 Black Act..
**HIGHWAY ROBBERY**: Dramatic increase with use of transport and trade.
**WITCHCRAFT:** Was decriminalised in 1735. Most educated attitudes no longer believed in witchcraft.

## KEY INDIVIDUAL: Home Secretary & Prime Minister Robert Peel.

- ❑Major changes to Prison Reform and police. Known as the 'Father of Modern Policing'.
- ❑1823 Gaols Act, 1829 Metropolitan Police Act

## Main causes of change

- ❑Decline in religious beliefs
- ❑Politics, population increase, voting.
- ❑Exploration, economy of the Industrial Revolution.
- ❑Improved transport & trade.
- ❑Changing attitudes, humanitarianism, & education.

## KEY EXAMPLE: Pentonville & the Separate System

- ❑Prison first of its kind.
- ❑Emphasised hard work & isolated prisoners
- ❑Split prisoners into different groups.
- ❑However, health was taken into account through sanitation.
- ❑**KEY TERMS:** The Crank, treadwheel, discipline, separate system, silent system, religion, cells, religious teaching, toilets, deterrent, reform.

## Methods of Law Enforcement

**CHANGE**

*NEW* 1748 Bow Street Runners
*NEW* 1829 First police force by Robert Peel and **Metropolitan Police Act**
*NEW* Rural Constabulary Act
*NEW* 1842 Start of the C.I.D.
*NEW* 1856 Police Act – National Force.

**SAME**

- ❑**Rural areas** still dealt with crime
- ❑**Parish Constables** dealt with local crime
- ❑**Watchmen** still employed by the rich.
- ❑**Soldiers/army** could still be brought in.
- ❑**Collective Responsibility** still expected.

## Punishments

**MUCH CHANGE**

*NEW* Humanitarianism & prison reform
*NEW* Elizabeth Fry and John Howard.
*NEW* Bloody Code ended.
*NEW* Laws to improve prisons.
*NEW* Religion influenced prison changes.
*NEW* Robert Peel influenced change.
*NEW* Technology improved prison health
*NEW* Emphasis on reform & rehabilitation
Transportation & capital punishment ended in 1869.

# History

## 20th Century: c.1900-Present

### Main causes of change

- ❑ Technology & science
- ❑ Public attitudes and democracy
- ❑ Politics
- ❑ Trade and economy
- ❑ Liberal attitude towards reform and rehabilitation.
- ❑ Immigration & population.

## New Definitions of Crime

**SIMILARITY & DIFFERENCE**

***NEW * methods of crime but same act.**

- ❑ **Driving Offences:** speeding, drink driving.
- ❑ **Drug Taking and dealing (social crime)**
- ❑ **Cyber Crimes:** fraud, theft, copyright.
- ❑ **Slavery: people trafficking.**
- ❑ **Terrorism:** Remember 1605?
- ❑ **Smuggling:** Advanced gangs & methods.

***NEW* Crimes due to changing attitudes.**

- ❑ **Homophobic crime** – homosexuality decriminalised & Sexual Offences Act 1967.
- ❑ **Race/hate crime:** Race Relations Act 1968.
- ❑ **Dom. Violence** Domestic Violence Act 1976
- ❑ **Abortion:** Decriminalised in 1967.

## Methods of Law Enforcement

**CHANGE**

***NEW*** A range of technological and scientific developments to help law enforcement.
***NEW*** An emphasis on crime prevention, targeting youth & education.
***NEW* Specialist police units** to target specific groups – Special Branch, Fraud Squad, Dog Unit.
***NEW*** A standardised set of rules for policing the whole country and police training.

**SAME**

**Neighbourhood Watch** a form of Collective Responsibility.
A re-introduction of police '**on the beat**' with the use of Community Support Officers.

## KEY EXAMPLE:

**The treatment and attitudes towards Conscientious Objectors.**

**The Military Services Act 1916**

- ❑ Reasons for not joining the army and becoming a C.O. or 'Conchie'.
- ❑ Attitudes of the **media** towards C.O.s in WW1
- ❑ Attitude of the **government** towards C.O.s in WW1
- ❑ Attitude of the **public** towards C.O.s in WW1
- ❑ Punishment of the C.O.s in WW1
- ❑ How attitudes stayed the same and changed by WW2.

## Punishments

**CHANGE**

- ❑ **Abolition of the Death Penalty 1969 –** Know the reasons why.
- ❑ **Further Prison Reforms:** Borstals, Education, Criminal Justice Act 1948, Increase in prison numbers, Mental hospitals,
- ❑ **Non-Custodial Sentences:** Youth Detention Centre, probation, parole, community service, electronic tagging, ASBO, treatment programmes, restorative justice, fines.
- ❑ **Hard Labour abolished.**

# YEAR 10 – DELVING INTO DATA...

@whisto_maths

# Collecting, representing and interpreting

## What do I need to be able to do?

By the end of this unit you should be able to:

- Construct and interpret frequency tables and polygon two-way tables, line, bar, & pie charts
- Find and interpret averages from a list and a table
- Construct and interpret time series graphs, stem and leaf diagrams and scatter graphs

## Keywords

**Population:** the whole group that is being studied
**Sample:** a selection taken from the population that will let you find out information about the larger group
**Representative:** a sample group that accurately represents the population
**Random sample:** a group completely chosen by change. No predictability to who it will include.
**Bias:** a built-in error that makes all values wrong by a certain amount
**Primary data:** data collected from an original source for a purpose.
**Secondary data:** data taken from an external location. Not collected directly.
**Outlier:** a value that stands apart from the data set

## Stem and leaf

A way to represent data and use to find averages

This stem and leaf diagram shows the age of people in a line at the supermarket.

| | |
|---|---|
| 0 | 7 9 |
| 1 | 4 5 6 8 8 |
| 2 | 1 3 |
| 3 | 0 |

**Key: 1|4** Means 14 years old

Stem and leaf diagrams:
Must include a key to explain what it represents
The information in the diagram should be ordered

Back to back stem and leaf diagrams

| Girls | | Boys |
|---|---|---|
| 5 | 14 | |
| 7, 5, 5, 5, 4 | 15 | 3, 8, 9 |
| 8, 4, 2, 1, 0 | 16 | 2, 5, 7, 7, 7, 8, 8, 9 |
| 9, 8, 7, 6, 6, 4, 2, 1, 1, 0, 0 | 17 | 0, 2, 3, 6, 6, 7, 7 |
| | 18 | 0, 1, 4, 5 |

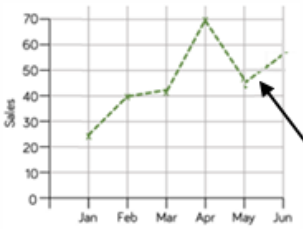
15 | 3, Means 153 cm tall

Back to back stem and leaf diagrams:
Allow comparisons of similar groups
Allow representations of two sets of data

## Time-Series

R

This time-series graph shows the total number of car sales in £1000 over time.




Look for general trends in the data. Some data shows a clear increase or a clear decrease over time.

Readings in-between points are estimates (on the dotted lines) You can use them to make assumptions

## Comparing distributions

Comparisons should include a statement of average and central tendency, as well as a statement about spread and consistency

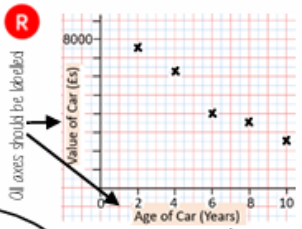
Mean, mode, median – allows for a comparison about more or less average
Range – allows for a comparison about reliability and consistency of data

## Draw and interpret a scatter graph

R

| Age of Car (Years) | 2 | 4 | 6 | 8 | 10 |
|---|---|---|---|---|---|
| Value of Car (£s) | 7500 | 6250 | 4000 | 3500 | 2500 |

- This data may not be given in size order
- The data forms information pairs for the scatter graph
- Not all data has a relationship



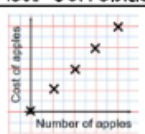

"This scatter graph show as the age of a car increases the value decreases"

The link between the data can be explained verbally

The axes should fit all the values on and be equally spread out

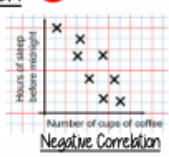
## Linear Correlation

R



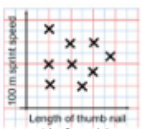

Positive Correlation

As one variable increases so does the other variable




Negative Correlation

As one variable increases the other variable decreases




No Correlation

There is no relationship between the two variables

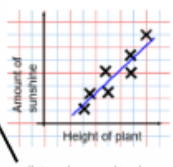
## The line of best fit

R

The Line of best fit is used to make estimates about the information in your scatter graph

Things to know:

- The line of best fit DOES NOT need to go through the origin (The point the axes cross)
- There should be approximately the same number of points above and below the line (It may not go through any points)
- The line extends across the whole graph




It is only an estimate because the line is designed to be an average representation of the data

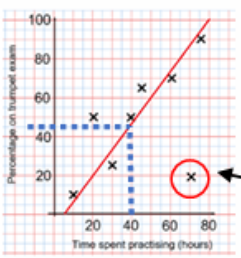
It is always a straight line.

## Using a line of best fit

R

**Interpolation** is using the line of best fit to estimate values inside our data point.

e.g. 40 hours revising predicts a percentage of 45




**Extrapolation** is where we use our line of best fit to predict information outside of our data.
**This is not always useful – in this example you cannot score more that 100%. So revising for longer can not be estimated**

This point is an "outlier"
It is an outlier because it doesn't fit this model and stands apart from the data

Maths

# YEAR 10 – DELVING INTO DATA...

@whisto_maths

# Collecting, representing and interpreting

## What do I need to be able to do?

**By the end of this unit you should be able to:**

- Construct and interpret frequency tables and polygon, two-way tables, line, bar, & pie charts
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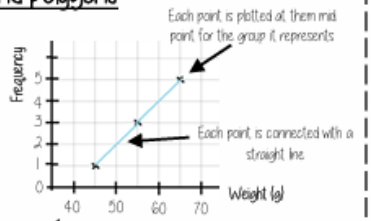
## Frequency tables and polygons

| x Weight(g) | Frequency |
|---|---|
| $40 < x \leq 50$ | 1 |
| $50 < x \leq 60$ | 3 |
| $60 < x \leq 70$ | 5 |

We do not know from grouped data where each value is placed so have to use an estimate for calculations

**MID POINTS**
Mid-points are used as estimated values for grouped data. The middle of each group




Each point is plotted at them mid point for the group it represents

Each point is connected with a straight line

The data about weight starts at 40. So the axis can start at 40

**Mid-point**
Start point + End point
2

## Two way tables R

60 people visited the zoo one Saturday morning. 26 of them were adults. 13 of the adult's favourite animal was an elephant. 24 of the children's favourite animal was an elephant.

Extract information to input to the two-way table.

Subgroups each have their own heading

| | Adult | Child | Total |
|---|---|---|---|
| Elephant | 13 | 24 | 37 |
| Other | 13 | 10 | 23 |
| Total | 26 | 34 | 60 |

Needs subgroup totals

Overall total

## Draw and interpret Pie Charts R

| Type of pet | Dog | Cat | Hamster |
|---|---|---|---|
| Frequency | 32 | 25 | 3 |

There were 60 people asked in this survey (Total frequency)

$\frac{32}{60}$ "32 out of 60 people had a dog"

This fraction of the 360 degrees represents dogs

$\frac{32}{60} \times 360 = 192°$

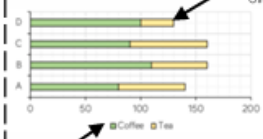

Use a protractor to draw. This is 192°

**Multiple method**
$\frac{60}{360}$ goes into 360 – 6 times
Each frequency can be multiplied by 6 to find the degrees (proportion of 360)

**Comparing Pie Charts**
You NEED the overall frequency to make any comparisons

## Bar and line charts

**Composite bar charts**

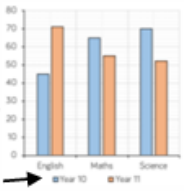



Compare the bars green compared to yellow. The size of each bar is the frequency. Overall total easily comparable.

Categories clearly indicated

**Dual bar charts**

Bars are compared side by side. Easier to compare subgroups




Categories clearly indicated

## Averages from lists R

**The Mean**

A measure of average to find the central tendency... a typical value that represents the data

24, 8, 4, 11, 8,

Find the sum of the data (add the values)

55

Divide the overall total by how many pieces of data you have

$55 \div 5$ | Mean = 11

**The Mode (The modal value)**

This is the number OR the item that occurs the most (it does not have to be numerical)

24, 8, 4, 11, 8,

This can still be easier if it the data is ordered first

Mode = 8

**The Median**

The value in the center (in the middle) of the data

24, 8, 4, 11, 8,

Put the data in order: 4, 8, 8, 11, 24

Find the value in the middle: 4, 8, 8, 11, 24

Median = 8

NOTE: If there is no single middle value find the mean of the two numbers left

**For Grouped Data**

The modal group – which group has the highest frequency

## Averages from a table R

**Non-grouped data**

| Number of Siblings | 0 | 1 | 2 |
|---|---|---|---|
| Frequency | 6 | 8 | 6 |
| Subtotal | 0 | 8 | 12 |

Overall Frequency: 20

Total number of siblings: 20

The data in a list: 0,0,0,0,0,0,1,1,1,1,1,1,1,1,2,2,2,2,2,2

Mean: $\frac{\text{total number of siblings}}{\text{Total frequency}} = 1$

**Grouped data**

| x Weight(g) | Frequency | Mid Point | MP x Freq |
|---|---|---|---|
| $40 < x \leq 50$ | 1 | 45 | 45 |
| $50 < x \leq 60$ | 3 | 55 | 165 |
| $60 < x \leq 70$ | 5 | 65 | 325 |

Overall Frequency: 9

Overall Total: 585

Mean: 65

The data in a list: 45, 55, 55, 55, 65, 65, 65, 65, 65

Maths

# YEAR 10 – USING NUMBER...

@whisto_maths

# Non-calculator methods

## What do I need to be able to do?

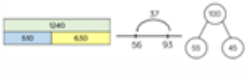
**By the end of this unit you should be able to:**

- Use mental/written methods for the four number operations
- Use four operations for fractions
- Write exact answers
- Round to decimal places and significant figures
- Estimate solutions
- Understand limits of accuracy
- Understand financial maths

## Keywords

**Truncate:** to shorten, to shorten a number (no rounding), to shorten a shape (remove a part of the shape)
**Round:** making a number simpler, but keeping its place value close the what it originally was
**Credit:** money that goes into a bank account
**Debit:** money that leaves a bank account
**Profit:** the amount of money after income - costs
**Tax:** money that the government collects based on income, sales and other activities
**Balance:** The amount of money in a bank account
**Overestimate:** Rounding up – gives a solution higher than the actual value
**Underestimate:** Rounding down – gives a solution lower than the actual value

## Addition/ Subtraction



Modelling methods for addition/ subtraction
- Bar models
- Number lines
- Part/ Whole diagrams

Addition is commutative

6 + 3 = 3 + 6

The order of addition does not change the result

Subtraction the order has to stay the same

360 – 147 = 360 – 100 – 40 – 7

- Number lines help for addition and subtraction
- Working in 10's first aids mental addition/ subtraction
- Show your relationships by writing fact families

Formal written methods

| | H | T | O |
|---|---|---|---|
| | 1 | 8 | 7 |
| + | 5 | 4 | 2 |
| | | | |

| | H | T | O |
|---|---|---|---|
| | 4 | 2 | 7 |
| – | 2 | 4 | 9 |
| | | | |

Remember the place value of each column
You may need to move 10 ones to the ones column to be able to subtract

**Decimals have the same methods remember to align the place value**

## Division methods

3584 ÷ 7 = 512

Short division

$$7\overline{)3\,^{3}5\;8\;^{1}4}\quad 5\;1\;2$$

Complex division

÷ 24 = ÷ 6 ÷ 4

Break up the divisor using factors

**Division with decimals**

The placeholder in division methods is essential – the decimal lines up on the dividend and the quotient

24 ÷ 0.02 → 24 ÷ 0.2 → 240 ÷ 2

All give the same solution as represent the same proportion
Multiply the values in proportion until the divisor becomes an integer

## Multiplication methods

Long multiplication (column)

Grid method

Repeated addition

Less effective method especially for bigger multiplication

**Multiplication with decimals**

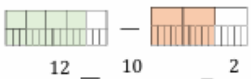
Perform multiplications as integers
e.g 0.2 x 0.3 → 2 x 3

Make **adjustments** to your answer to match the question: 0.2 x 10 = 2
0.3 x 10 = 3
Therefore 6 ÷ 100 = 0.06

## Four operations with fractions

**Addition and Subtraction**

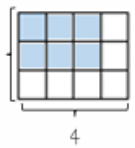
$\frac{4}{5} - \frac{2}{3}$



$\frac{12}{15} - \frac{10}{15} = \frac{2}{15}$

**Multiplication**

$\frac{3}{4} \times \frac{2}{3}$



$= \frac{6}{12} = \frac{1}{2}$

**Division**

$\frac{2}{5} \div \frac{3}{4}$

$\frac{2}{5} \times \frac{4}{3}$

Multiplying by a reciprocal gives the same outcome

$= \frac{8}{15}$

## Exact Values

Leave in terms of $\pi$

$= \frac{120}{360} \times 36\pi$

$= \frac{1}{3} \times 36\pi = 12\pi$

Leave as a surd

$\tan 30 = \frac{1}{\sqrt{3}}$

## Rounding

2.46192 (to 2dp) - Is this closer to 2.46 or 2.47

2.46 ← 2.47

2.46|192

This shows the number is closer to 2.46

**Significant Figures**

370 to 1 significant figure is 400
37 to 1 significant figure is 40
3.7 to 1 significant figure is 4
0.37 to 1 significant figure is 0.4
0.00000037 to 1 significant figure is 0.0000004

SF: Round to the first nonzero number

## Estimation

Round to 1 significant figure to estimate

21.4 x 3.1 ≈ 20 x 3 ≈ 60

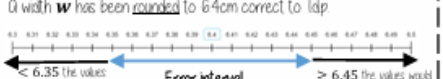
The equal sign changes to show it is an estimation

This is an **underestimate** because both values were rounded down

It is good to check all calculations with an estimate in all aspects of maths – it helps you identify calculation errors

## Limits of accuracy

A width $w$ has been rounded to 6.4cm correct to 1dp

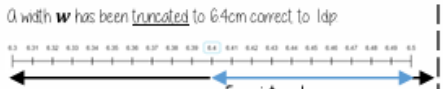


< 6.35 the values would round to 6.3 | Error interval | ≥ 6.45 the values would round to 6.5

The error interval: 6.35 ≤ w < 6.45

Any value within these limits would round to 6.4 to 1dp

A width $w$ has been truncated to 6.4cm correct to 1dp



< 6.4 the values would truncate to 6.3 | Error interval | ≥ 6.5 the values would truncate to 6.5

6.4 ≤ w < 6.5 Any value within these limits would truncate to 6.4 to 1dp

Maths

# Music

KS4 BTEC Tech Music Practice

## Component 1 – Purpose

You are to investigate **four contrasting musical styles** (Part 1) and showcase your techniques to create short **music products** (Part 2)

Everything you create must be linked to a **theme** you will be given – e.g. "Colour," or "time"


## 8 Key Words

**Style** – a distinct musical sub-genre you must **analyse** (four in total).
**Compositional features** – melody, harmony, tonality, rhythm, structure.
**Sonic features** – instrumentation, texture, timbre, production.
**Commentary** – written / audio / visual notes explaining your musical decisions.
**Realisation technique** – the **practical** method used (live video, DAW remix, etc.).
**Examples** – 12–30 s style demos (Task 1) and 30–60 s products (Task 2).
**Evidence portfolio** – final files submitted for marking (audio, video, scores, notes).

## Task 1 Compile a styles portfolio

Analyse **four styles** (max **two** from pop, and **one** each from the other **two** sections). Include how each style uses **compositional** and **sonic** features.

## Task 1 Evidence

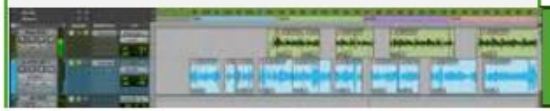
Provide at least one12–30 s musical example for each **style** (original or found) plus an **individual commentary**.

You have about **5** supervised hours to complete this task (**24 marks**).

## Task 2: Produce three 30–60 s audio tracks.

These should **demonstrate** different **realisation techniques** (e.g. live video, DAW remix, DAW multitrack recording).

Each of them must clearly reflect the theme given



## Task 2 Evidence

Submit the **three extracts** plus **commentary** explaining your **techniques**, **theory** choices, and theme references.
You have around 7 **supervised** hours (36 marks).

Treat the **assignment** like **professional freelance** work.

**Component 1**

# Music

KS4

# BTEC Tech Music Practice

## Component 2 – Purpose

This component is about proving **skill growth**, not demonstrating what you can already do.

Examiners want to see a journey:

Startingpoint → practice → evidence → better result.

## 8 Key Words

**Skills audit** – honest checklist of abilities.
**Development routine** – daily/weekly practice plan, targeting weak areas.
**Technical exercises** – scales, DAW drills or warm-ups that build technique.
**Goals** – clear, timed targets (e.g. "record clean 8-bar riff by Friday").
**Monitoring** – video/audio logs that track progress at milestones.
**Reflection** – Notes on what's improved.
**Professional skills** – e.g. time-keeping, teamwork, safe set-up, file-labelling.
**Portfolio** – single folder with all planning, practice evidence and outcomes.

## Task Brief

Students will produce two **musical outcomes** (combined 2–4 min in length) drawn from two **different disciplines.**
Choose any two of **performance**, **original composition**, or **music production**.
Both must clearly express the them given, whether through lyrics, triumphant chords or sound design.

## Planning & Goals

Begin with a **skills audit** then set **SMART goals** (specific, measurable, achievable, relevant, time-bound).

Map out **practice sessions** with **times** and **durations**, then describe how each **exercise** tackles a listed **weakness** you **identified** in your **skills audit.**

## Evidence Collection

Film short clips of warm-ups, rehearsal takes, DAW screen-captures, mix snapshots; **label dates** and describe **what changed.** Regular **reflections** explain **successes**, **setbacks** and **next steps.**

### Professional & Commercial Skills

Show industry **habits**: punctual session logs, tidy file structure, **safe equipment** use, collaboration etiquette. Examiners look for these "**soft skills**", that prove you can work in a **real studio** or **gig scenario**.

## Submission & Timing

You have about **15 supervised hours** to **plan**, **develop**, **record** and **compile** everything into one portfolio (**60 marks total**).
**Missing evidence** or **sloppy organisation** can cost **marks**—treat the folder with the **professionalism** you want people to treat you with.

Remember the **Evidence Collection** is worth the **same marks** as the submission piece of music!

**Component 2**

# Photography

## KS4

## AQA GCSE Photography (2 years)

**Introduction & Foundations**
Students select 2 or more topics as a starting point (past paper)

- **AO1**: Develop ideas through investigations.
- **AO2**: Refine work through experimentation.
- **AO3**: Record ideas, observations, and insights.
- **AO4**: Present a personal and meaningful response.

- **Skills**:
- Basic camera functions: ISO, aperture, shutter speed.
- Each photoshoot needs a contact sheet page.
- Composition rules: Rule of thirds, leading lines.
- **Theory**:
- Introduction to project theme and assessment objectives.
- Photography genres: portrait, landscape, documentary.
- **Homework every week**:
- Take 20-30 photos exploring theme.

**Artist Influence & Experimentation**
**Objective**: Explore visual styles andemulate artists' work.

- **Skills**:Editing basics in Photoshop orLightroom.
  - Emulating chosen artist'stechnique.

**Theory**: Analyze a Photographer and hiswork. Why? What? When? How?
**Homework**: Artist response photoshoot.

- Annotate contact sheet andedits.
- **Homework every week**:
- Take 20-30 photos exploring theme

**Refine & Experiment**
**Objective**: Try new approaches and refineoutcomes.

- **Skills**:Advanced photo manipulation.
- Mixed media: combining photographywith drawing, collage, or text.
- **Theory**: Experiment log: what worked,what didn't, and why.
- **Homework every week**:
- Take 20-30 photos exploring theme


**Developing Final Response**
**Objective**: Final shoot planning &execution.
**Skills**: Applying best techniques learnedso far.

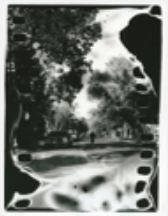
- Planning lighting, composition, editing.

**Theory**: Planning final outcome (moodboards, shoot plan, contact sheets).
**Homework**:

- Carry out final shoot. Start editing.

**Presenting and Evaluating**
**Objective**: Complete final presentationand evaluate work.

- **Tasks**:
- Final edits and presentation layout.
- Mounting, printing, and sketchbookorganization.
- Final evaluation (AO4): writtenreflection on journey and final

# Science - Physics

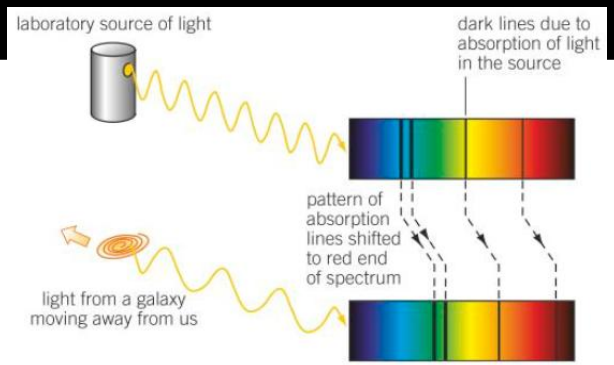
P8 - Space

## Keywords

| | |
|---|---|
| Main sequence | The life stage of a star during which it radiates energy because of the fusion of hydrogen nuclei in its core. |
| Centripetal force | The resultant force towards the centre of a circle acting on an object moving in a circular path. |
| Red-shift | Increase in the wavelength of EM waves emitted by a star of galaxy as it moves away from us, |
| Big Bang theory | The theory that the universe was created in a massive explosion (the Big Bang), and that the universe has been expanding ever since. |
| Cosmic microwave background radiation | Electromagnetic radiation that has been travelling through space ever since it was created shortly after the Big Bang. |
| Doppler effect | The change in observed wavelength because of motion |
| Dark Matter | Matter in a galaxy that cannot be seen, It's presence can be deduced because galaxies would spin much faster if their stars were their only matter. |

## Evidence for the Big Bang

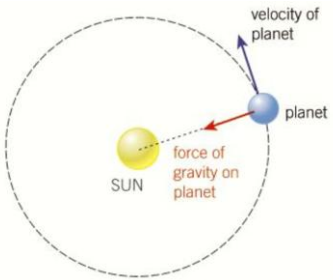
**Red shift**




**CMBR -** Created as high energy gamma radiation just after the Big Bang. Since then it has stretched out to longer wavelengths as the universe expanded.

## Orbits

The planet experiences acceleration towards the Sun because the resultant force acts towards the Sun.

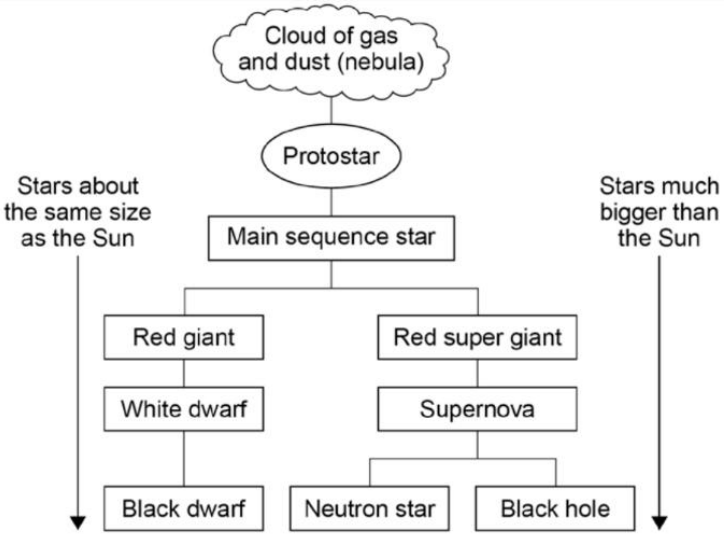



## Satellites

If the satellite is launched:

- Too fast → Flies off into space
- Too slow → Falls to the surface
- The right speed → Travels in a circular orbit at a constant height and a constant speed

## Life cycle of a star

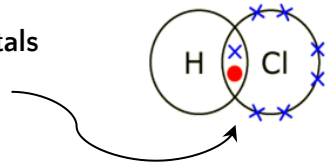


# Science - Chemistry

C2 Structure & Bonding

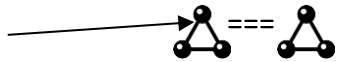
**Covalent Bonding – Between non metals**

Pairs of electrons shared
No ions are formed

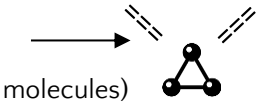



**Simple covalent structures**

Strong covalent bonds



Weak intermolecular forces
(attraction between the individual molecules)



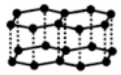
Low melting and boiling points

Does not conduct electricity

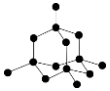
**Giant covalent structures**

Contain many atoms joined by strong covalent bonds.
Examples :

**Graphite** – each carbon is covalently bonded to 3 other carbon atoms.
Delocalised electrons free to carry charge
Layers can slide over each other

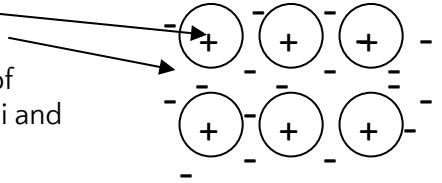


**Diamond** – Each carbon atom is covalently bonded to 4 other carbon atoms
Does not conduct electricity
Very hard
High melting and boiling points



**Metallic bonding**

Positive metal atoms
Sea of delocalised electrons



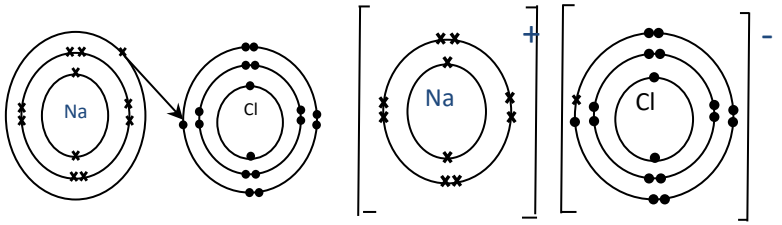
Strong electrostatic force of attraction between + nuclei and delocalised electrons

High boiling and melting points

Delocalised electrons free to carry charge throughout the structure

**Ionic bonding – Between metals and non metals**

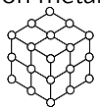
**Ion** – charged particle formed when an atom gains or loses electrons.




Metal atoms **transfer** electrons to non metal atoms to complete outer shells

Strong electrostatic force of attraction between positively (metal) and negatively charged (non metal) ions.

Ions form giant lattices



High melting and boiling points

Liquid / molten: charged ions can move and carry current

Solids: ions cannot move so cannot carry current

# Sports Studies

## KS4 Sport Studies

Component 2

**Types of Skills**
•Open Skills – Performed in a changing environment (e.g. passing in football).
•Closed Skills – Performed in a stable environment (e.g. a serve in tennis).
•Basic Skills – Simple movements requiring little concentration (e.g. running).
•Complex Skills – More difficult, involving coordination and decision-making (e.g. dribbling past opponents).

**Types of Practice**
•Fixed Practice – Repeating the same skill in the same environment (good for closed skills).
•Variable Practice – Changing the environment or conditions (good for open skills).
•Whole Practice – Practising the entire skill at once.
•Part Practice – Breaking the skill into sections.

**Open–Closed Skill Continuum**
•Skills aren't just open or closed—they exist on a **spectrum**.
•Some skills are **very closed**, some are **very open**, and many are **somewhere in between**, depending on the environment.


**What is a SMART Target?**
A target that is:
•**S**pecific – Clear and focused on one skill.
•**M**easurable – Progress can be tracked.
•**A**chievable – Realistic for the performer.
•**R**elevant – Linked to performance goals.
•**T**ime-bound – Set within a timeframe (e.g. 4 weeks).

Example
**"To improve my passing accuracy in football from 60% to 80% in small-sided games over the next 4 weeks by practicing passing drills twice a week."**
•**S – Specific**: Focused on passing accuracy in football
•**M – Measurable:** Measured as a percentage (60% → 80%)
•**A – Achievable:** 20% improvement with regular practice
•**R – Relevant:** Passing is a key skill in football
•**T – Time-bound:** To be completed in 4 weeks

**How to Show Progression**
•Using video before/after performances.
•Tracking scores/times or coach feedback.
•Comparing against SMART targets.
•Demonstrating improved technique or decision-making.

**Review and Adjust:**
•After your timeframe, compare your initial and final scores.
•If you meet the target, set a new target or maintain consistency.
•If not, assess what's working and what needs more focus (e.g., specific passing techniques or types of drills).

# Sports Studies

KS4 Sport Studies Component 2

**Risk Assessment**

**What is a Hazard?**
•Something that could cause harm (e.g. wet floor, broken equipment).

**What is a Risk?**
•The chance that the hazard could cause harm and how serious the harm could be.

**What is the Risk Level?**
•**Likelihood** = How likely is it to happen? (1–5 scale)
•**Severity** = How serious would the injury be? (1–5 scale)
(1- Low / 5- High)

Multiply the two together:
- 1–6 = **Low**
- 7–12 = **Medium**
- 13–25 = **High**

**Control Measures**
•Actions taken to reduce risk (e.g. wiping floors, checking equipment, using cones to mark space).

**Emergency Procedures**
•Knowing what to do if an incident happens:
- **Stop play**
- **Call first aider**
- **Contact emergency services if needed**
- **Follow school or venue protocol (Invacuation, Fire Alarm)**

**Session Planning**
**What Makes Up a Session Plan?**
**1.Session aim** – What you're trying to achieve.
**2.Warm-up**
**3.Main drills/activities**
**4.Conditioned game/game scenario**
**5.Cool down**

**What Is in a Warm-Up?**
•**Pulse raiser** (e.g. jogging)
•**Mobility exercises** (e.g. arm swings)
•**Dynamic stretches** (e.g. leg swings)
•Sport-specific movement prep

**What Are Drills and Why Are Drill Diagrams Important?**
•**Drills** are structured activities to practise specific skills or techniques.
•**Drill diagrams** help:
- Show player positions and movement
- Communicate the layout clearly
- Make setup quicker and easier

**How Should the Game Relate to Your Session Aim?**
•The game should **apply the skill** learned in a realistic setting.
•Use **conditioned rules** (e.g. only scoring with a pass, limited touches) to focus on the target skill.

**What Is Involved in a Cool Down?**
•**Gentle exercise** to lower heart rate
•**Static stretching** to aid flexibility and reduce soreness

# Sports Studies

KS4 Sport Studies Component 2

**Leadership in Sport**

**Types of Leadership**

•**Autocratic** – Leader makes all decisions (useful in safety-critical or large groups).
•**Democratic** – Leader involves the group in decisions (good for experienced groups).
•**Laissez-Faire** – Very relaxed, minimal instruction (used in creative sessions).

**Important Skills of a Leader**

•**Communication** – Clear instructions and feedback.
•**Organisation** – Planning sessions and using time well.
•**Confidence** – Speaking in front of groups and leading activities.
•**Decision-Making** – Reacting to changes and adjusting activities.
•**Motivation** – Encouraging others and maintaining enthusiasm.
•**Awareness** – Monitoring safety, participation, and ability levels.

Key Leadership Hints Before Coaching a Session

✅ **Before You Start**
•**Plan ahead** – Know your activity, equipment, timings, and aim clearly.
•**Set up your area early** – Organise cones, balls, and space before your group arrives.
•**Be visible** – Stand in a position where everyone can **see and hear you clearly**.
•**Have a whistle or signal** – Get attention quickly when you need it.

🗣️ **Giving Instructions**
•**Get full attention first** – Ask students to **put equipment down and stop moving** before speaking.
•**Face the group** – And make sure they are facing you.
•**Speak clearly and confidently** – Use a loud, calm voice and short, clear sentences.
•**Demonstrate the activity** – Show the movement yourself or choose a confident student.
•**Check understanding** – Ask questions or get students to repeat back instructions.

🧠 **During the Session**
•**Scan the group regularly** – Look for safety, effort, and understanding.
•**Give praise and feedback** – Encourage good work, and correct mistakes kindly.
•**Adapt the task if needed** – Make it easier or harder depending on ability.
•**Stay calm and in control** – Don't rush, shout, or panic if something goes wrong.