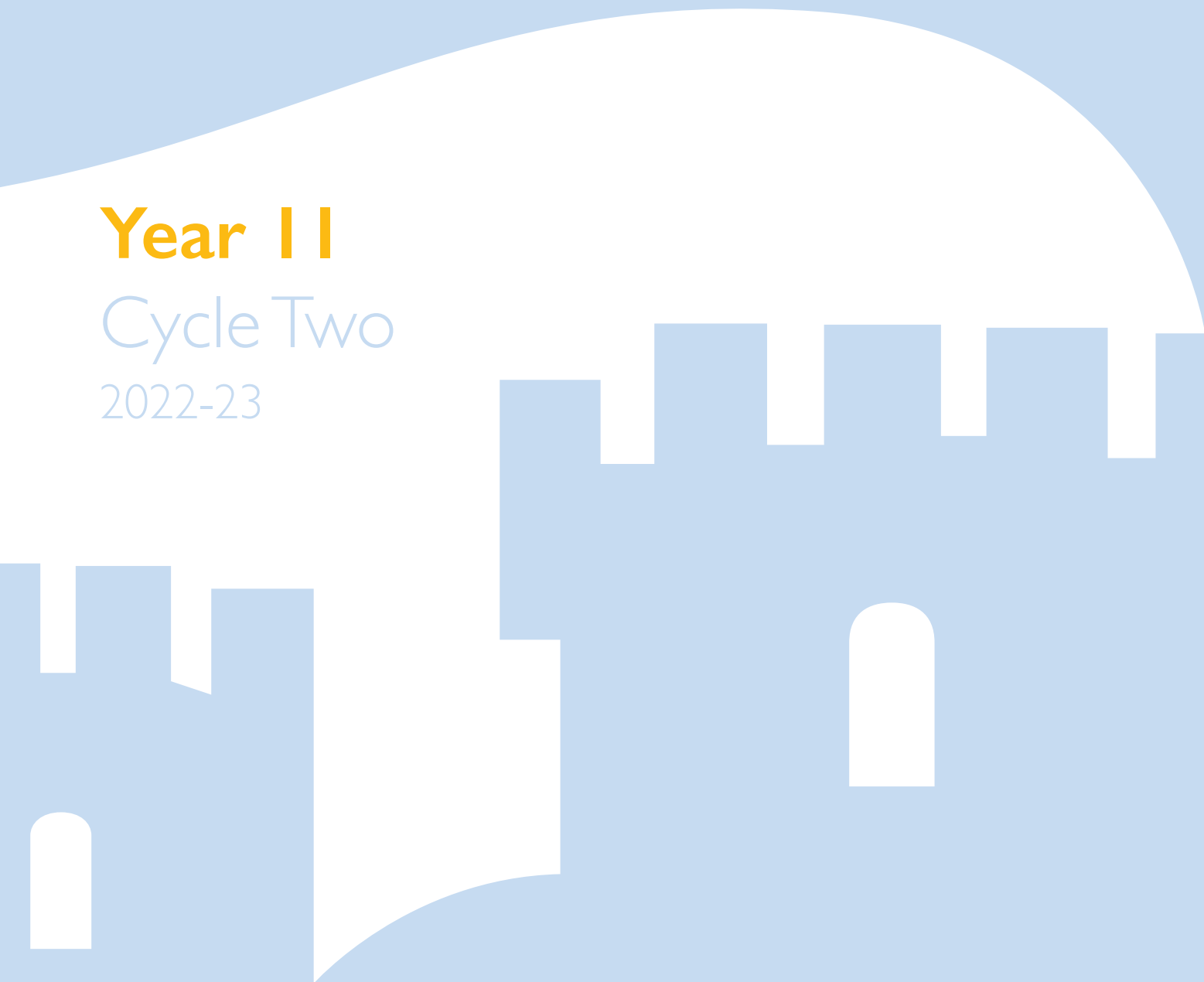


Knowledge Organiser

Year 11

Cycle Two

2022-23
















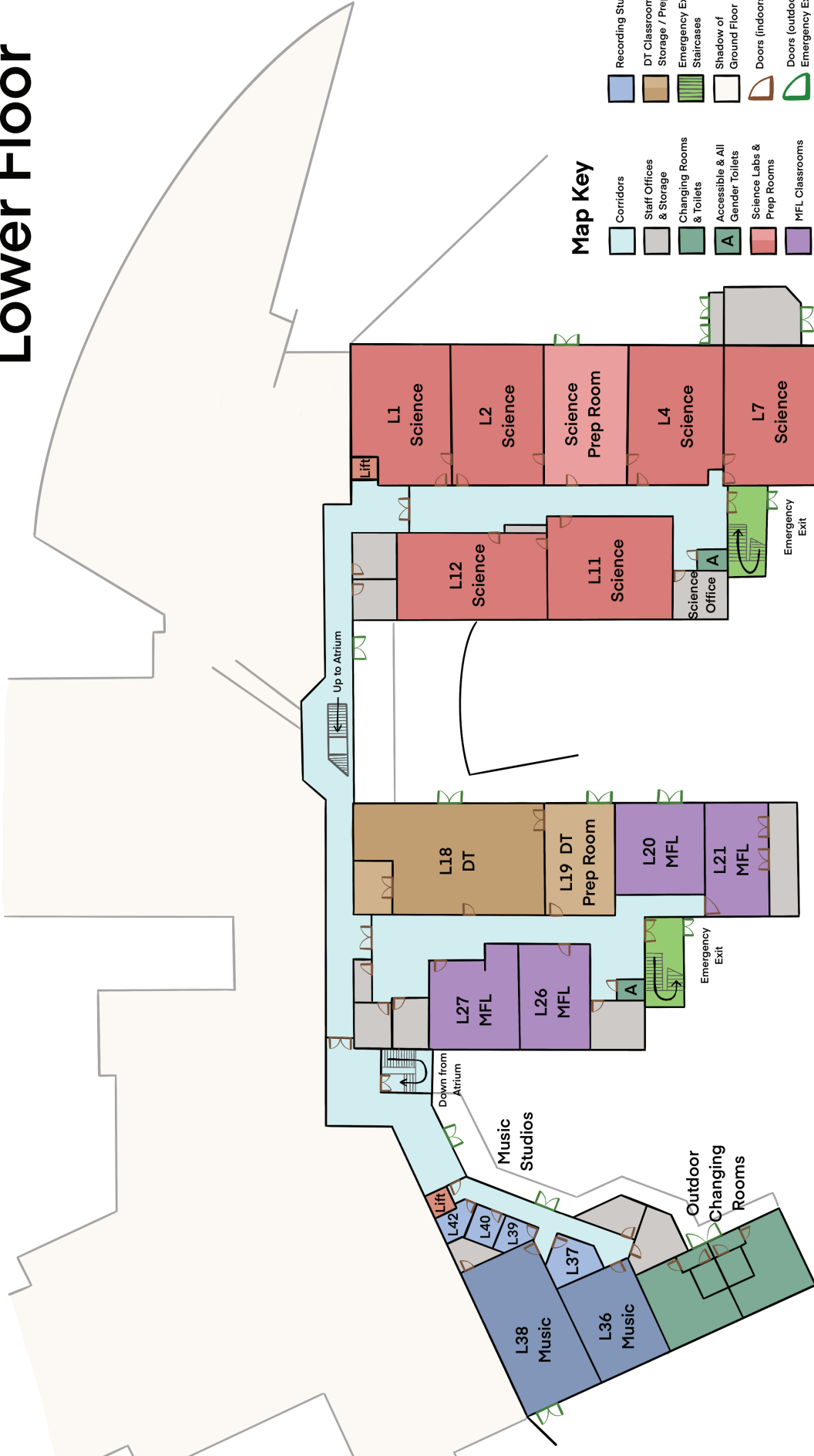
| Week A | Monday | Tuesday | Wednesday | Thursday | Friday |
|--------------------|--------|---------|-----------------------|----------|--------|
| Period 1 | | | | | |
| Period 2 | | | | | |
| BREAK TIME | | | | | |
| Period 3 | | | | | |
| Period 4 | | | | | |
| LUNCH TIME & CANON | | | | | |
| Period 5 | | | Electives 13:30-15:00 | | |
| Period 6 | | | | | |

| Week B | Monday | Tuesday | Wednesday | Thursday | Friday |
|--------------------|--------|---------|-----------------------|----------|--------|
| Period 1 | | | | | |
| Period 2 | | | | | |
| BREAK TIME | | | | | |
| Period 3 | | | | | |
| Period 4 | | | | | |
| LUNCH TIME & CANON | | | | | |
| Period 5 | | | Electives 13:30-15:00 | | |
| Period 6 | | | | | |

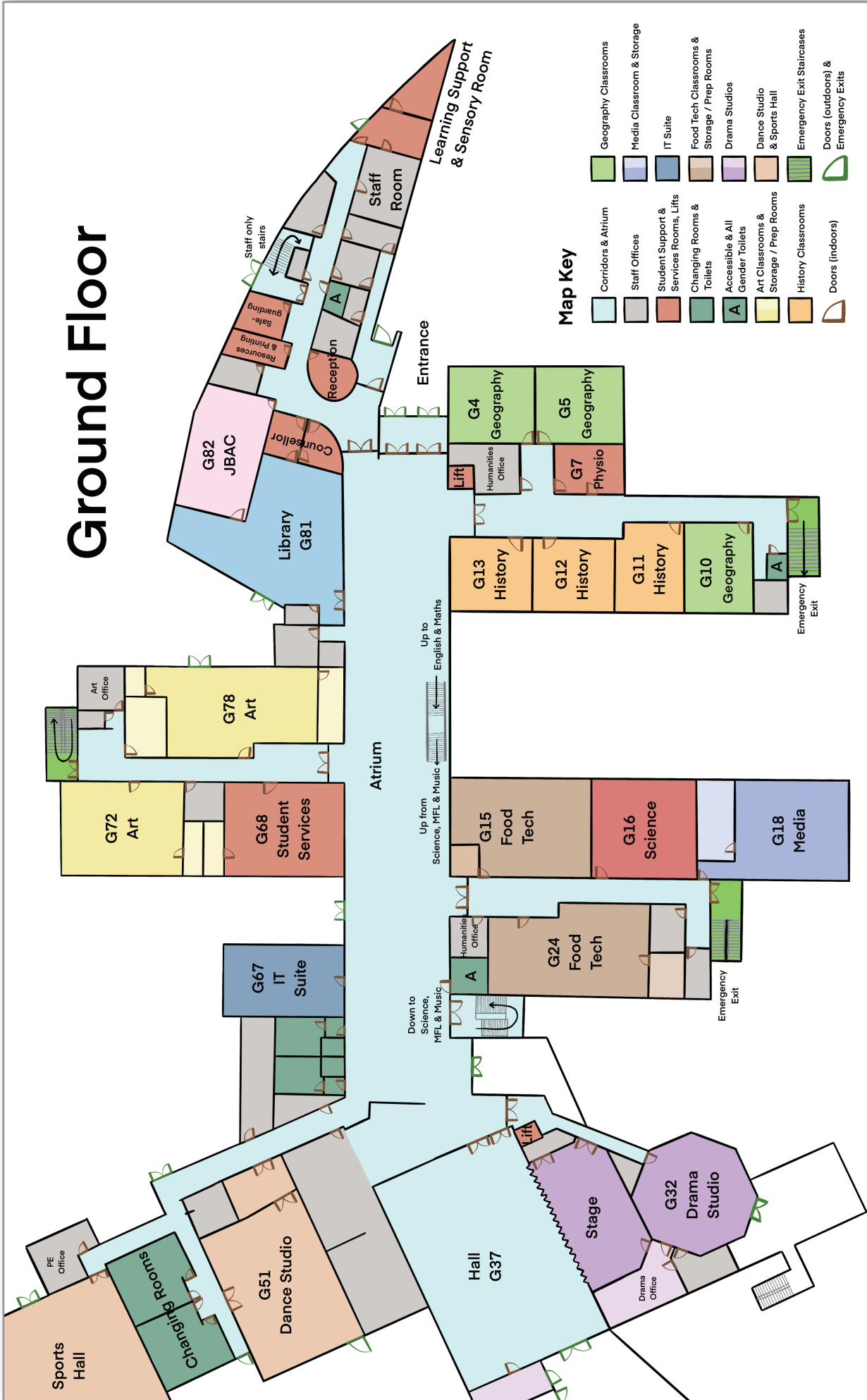
Lower Floor

Map Key

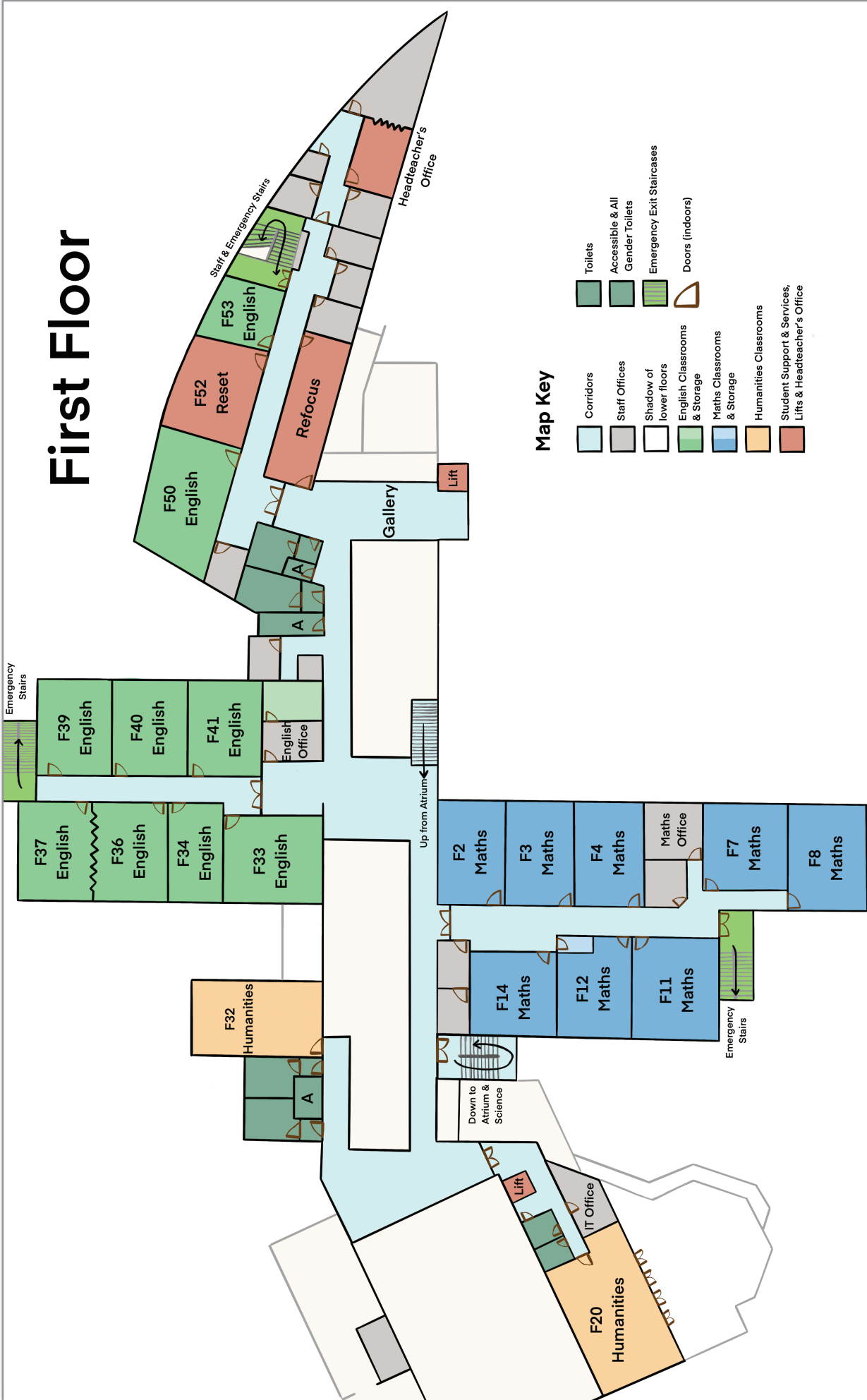
| | | | |
|---|---------------------------------|---|------------------------------------|
|  | Corridors |  | Recording Studios |
|  | Staff Offices & Storage |  | DT Classroom & Storage / Prep |
|  | Changing Rooms & Toilets |  | Emergency Exit Staircases |
|  | Accessible & All Gender Toilets |  | Shadow of Ground Floor |
|  | Science Labs & Prep Rooms |  | Doors (indoors) |
|  | MFL Classrooms |  | Doors (outdoors) & Emergency Exits |
|  | Music Classrooms | | |



Ground Floor

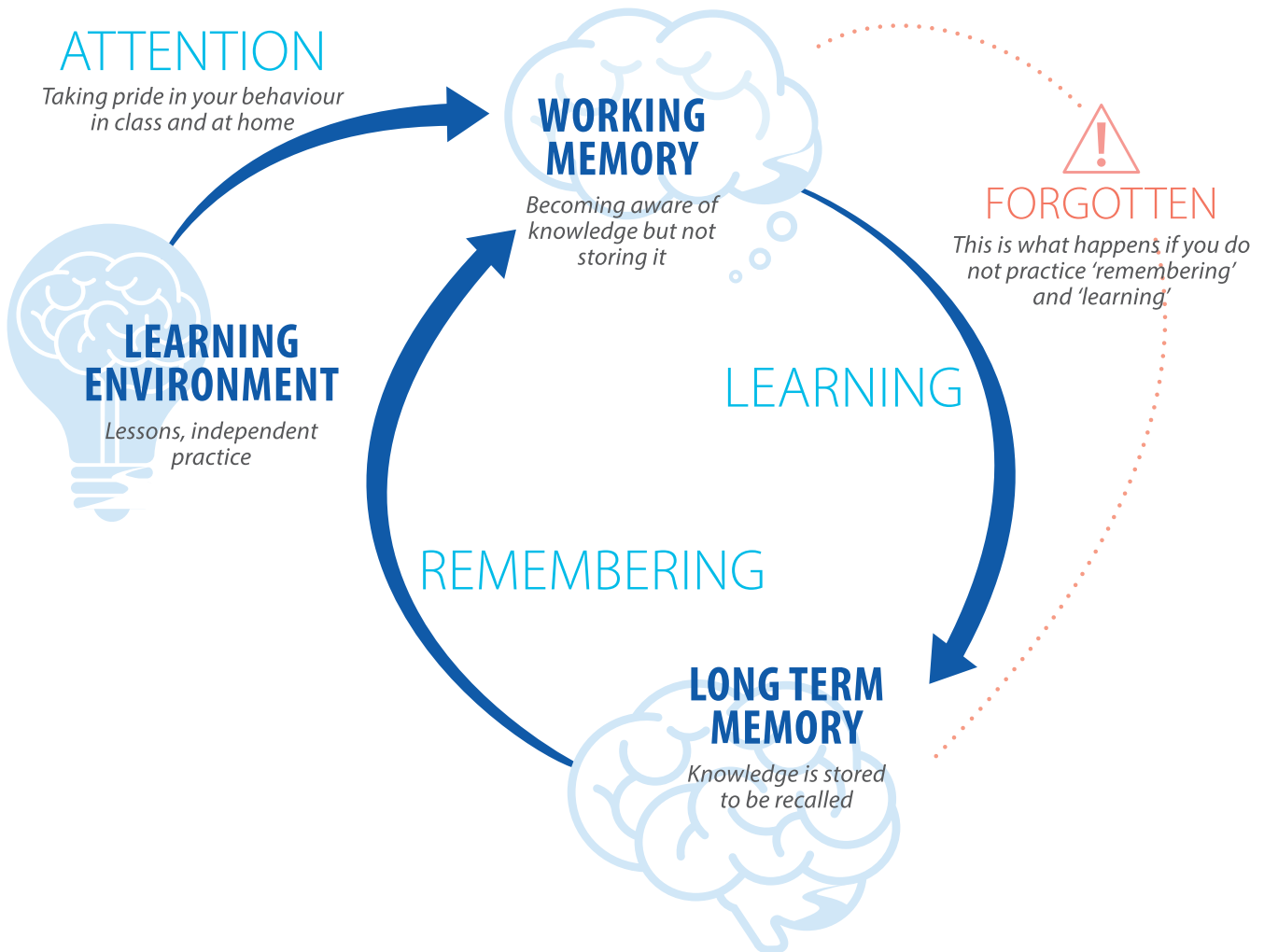


First Floor



This is how you learn

Your mind is split into two parts: the **working-memory** and the **long-term memory**. Everybody's **working-memory is limited**, and therefore it can very easily become overwhelmed. Your **long-term memory**, on the other hand, **is effectively limitless**.

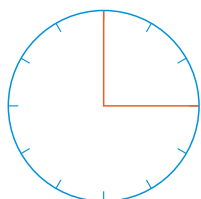


There are many different ways to learn the material in your knowledge organisers. Mr Ovens and Mrs Payne will be demonstrating how to use your knowledge organiser effectively in videos during the school year. These will be used in lessons and Canon time and will also be available on the school website. Whichever retrieval practice method you decide to use, your tutor will ask to see evidence of your work.

Here are some methods you could use to complete your homework:

- Read - Cover - Write - Check:** Read the section (or week) of your knowledge organiser several times. Cover it so you can no longer see it. Write down as much as you can remember. Check your knowledge organiser again. What information did you recall and what did your memory not retain? Make any corrections and additions using your green pen.
- Flashcards** - using an A6 size card/paper; turn the information in your knowledge organiser into a series of questions and then write the corresponding answer on the back of the card. This means that you can test yourself. Simply writing everything on the card would have no impact on your memory and retention of the information.
- Flip and fold pages** - This may be useful when you have completed a series of weeks or at the end of the topic. On one page, write down all of your revision notes. Fold the paper in half and create a mind map of the most important information on one side. Fold it again and write all of the key vocabulary on one side. Fold for the final time and draw symbols and icons that would help you to remember the content of your full page.

- a. Elaboration** - For each of the points you are revising, develop them further by asking yourself questions e.g. why would the rainfall be 2000mm? Why might mime be used as a theatrical technique?
- b. Retrieval practice grid** - Many of you would have used these in history. Divide your page into three columns and nine lines. Write questions and answers for your chosen topic. Ask family members and friends to ask you the questions and you give them the answer, focusing on one column at a time. If you get it wrong, they need to tell you the answer and you repeat it. You now need to go back into the top of the column of nine questions and try again until you get them all correct. Move onto the next column. This would be a good grid to build up over the course of the 10 weeks of knowledge organiser homework so that you had one grid per subject!

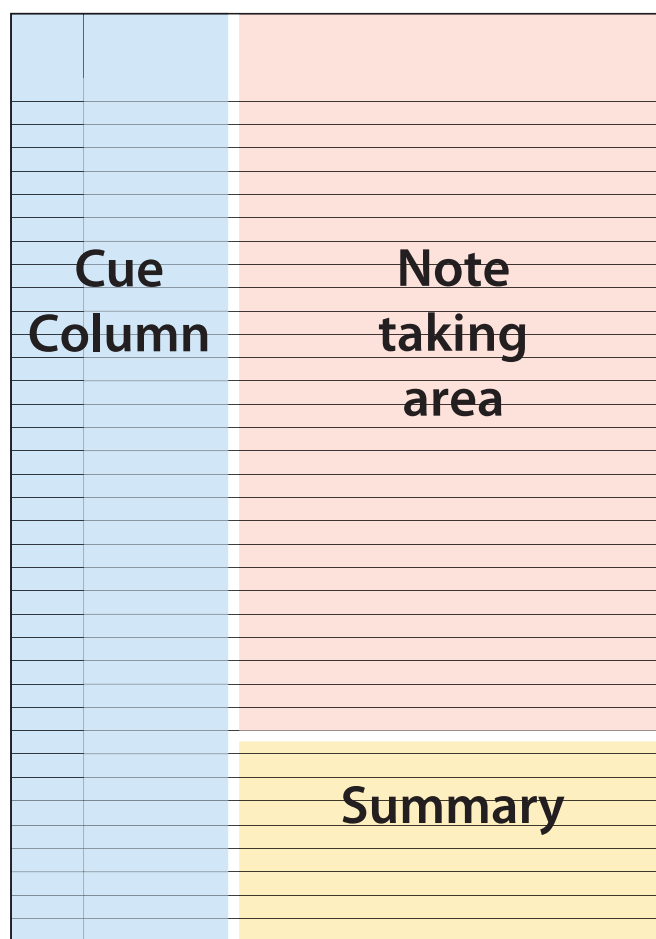


Repeat the processes above until you have spent 15-20 mins per subject per day. For example, repeated practices of 'Read - Cover - Write - Check' would be expected; not just one attempt.

REMEMBERING: MASTERING YOUR MEMORY

Cornell Notes

1. Divide your page into three sections like in this diagram.
2. In the note taking area, complete your work normally (if taking notes, try only to write down key information)
3. In the bottom section, summarise all the information in the note taking area into 3 bullet points
4. The Cue Column is where the magic happens - in this area, write a series of quiz questions about the notes you have written.
5. When revising, try to answer the quiz questions in the cue column before you read your notes. If you can do it, well done! You have **remembered** this. If not, you need to **learn** it again.
6. The Summary at the bottom of the page also strengthens the learning. It can be used as a prompt for you too try and remember the knowledge in the note taking area.



Link to Learning

Cornell Notes are a note taking system that was developed at Cornell University in America.

It is specifically designed to help you initially strengthen your **learning** but perhaps more importantly, build in opportunities to **remember** what you have **learned**.

Writing Structures

HISTORY: Key phrases in written answers

Using evidence:

- » This can be shown by...
- » I know this because...
- » Evidence to support this is...

Explanation:

- » This led to...
- » This meant that...
- » This clearly shows us that...
- » This was significant because...
- » This had an impact on...
- » Admittedly x was a factor; however, y was more significant because...

GEOGRAPHY: Writing structures / acronyms

When you are describing the location of a place in the world, refer to CLOCC:

Compass directions
 Latitude
 Oceans
 Continents
 Countries

When you are describing a pattern on a map or a trend on a graph, refer to TEA:

Trend (what is the general pattern?)
 Example (Identify specific examples from the map/graph)
 Anomaly (what does not fit the pattern/is an outlier?)

When you are completing a 5, 6 or 9 mark question in geography, it requires you to write well-developed points. To do this, follow the structure below:

Make a point
 ...which means that...
 As a result of this, ...
 We call this **double developing** a point.

You are regularly asked the question 'To what extent do you agree...?'

In response, consider the range of 'extents'.
 I slightly / partially / mostly / completely agree because, firstly, ...
 To a small / some / large extent, ...
 To some extent / to a large extent, I agree...

If you are asked to write about two sides of an argument, try 'Triple O'

On the one hand, ...
 On the other hand, ...
 Overall, ...

In geography, we regularly refer to:

 **Social**,  **economic** and  **environmental perspectives**

(e.g. The social impacts of Typhoon Haiyan included the deaths of over 6,000 people)

Sustainability: which refers to 'meeting the needs of the present without compromising the ability of future generations to meet their own needs'. Here, we can use our previous terms. 'This is socially/economically/environmentally sustainable because...'

The level of development of a country: High Income Countries (HICs - e.g. UK); Newly Emerging Economies (NEEs - e.g. Brazil); Low Income Countries (LICs .e.g Chad)

ENGLISH:

English: Analyse your quotation using IMPACTS

| | |
|----------|--|
| I | In particular, [WRITER]'s use of (METHOD) "... " creates a IMAGE, suggesting... The writer's use of (EVOCATIVE/EMOTIVE/GRAPHIC) IMAGERY in the phrase "... " suggests... |
| M | In particular, [WRITER]'s use of (METHOD) "... " contributes to a ... MOOD, creating the sense that... The use of the (WORD TYPE) "... " further adds to the ... ATMOSPHERE evoking a feeling of... |
| P | [WRITER]'s repeated use of (METHOD) throughout the extract establishes a PATTERN of... that perhaps reinforces... |
| A | The term "... " is typically ASSOCIATED with..., perhaps implying... |
| C | In the CONTEXT of the extract, the term "... " creates CONNOTATIONS of..., perhaps suggesting... |
| T | In particular, [WRITER]'s use of (METHOD) "... " strikes aTONE, creating the sense that... |
| S | [WRITER]'s use of the phrase "... " is perhaps SYMBOLIC of... and may suggest... |

| PARAGRAPH STRUCTURE | PURPOSE OF PARAGRAPH | SENTENCE STRUCTURES |
|---|--|---|
| Premise/Title | Fit with convention and to alert reader to topic | |
| Descriptive hook: begin by describing a scene that is relevant to the question. Do not express your view, although your view ought to be implied by your description. Ask the reader to imagine a scene. | To engage your reader in imagining a scene which then illustrates your point. The narrative tone is easy to engage with. | Imagine, if you will Do you see...? Do you see...? Do you see...? No. No. And no. Instead, you see... We live in a world where ..., where ..., where ... |
| Position paragraph: now, very clearly express your position on the issue. Provide an overview and reasons for your opinion, supported by an expert view. | To begin to persuade the reader of the logic and the wisdom of your point of view. | ...should absolutely... In 2017, the centre for X research at Exeter university produced a report on ... Shockingly/unsurprisingly/staggeringly, Professor Julie Buckle, who co-authored the report, is adamant that ... Some believe...; others believe..., but this much is clear: put your position here |
| Relevance paragraph: make the point that the debate is relevant now and explain why. Why should people think about the issue now? | Explains why the debate is relevant to modern society so that the audience can engage with the topic. | Why does it matter? Let me tell you why it matters: it matters because...; it matters because ..., and it matters because ... Those that experience this No one - no matter where he lives or what he believes - can be certain that ... No wrongs have ever been righted by ... Some believe..., some believe... |
| Optional Counter Argument: here accept other people may believe differently to you. Perhaps acknowledge part of their argument but then provide a rebuttal. Why are they wrong? | This shows you recognise others may not have the same views, but your view is better. | Officials from/ Name claim that..... I'm not saying.....I'm not saying..... I'm not saying..... but..... Ultimately we must recognise..... |
| Solution paragraph: by this point you have explained the problem and your view, but now you need to offer a solution. It is not enough simply to describe the issue, there must be a call to action | To offer a solution to the issue and encourage the reader to do something about it. | I do not propose a set of specific remedies, nor is there a single set. Though for a broad and adequate outline, we know what must be done: ... |
| Conclusion: Remind the reader of your position in a powerful way. | Pithy fragmented paragraph to summarise main idea. | Here then, is the thought with which I wish to leave you: less..., more ... |

St James Academic Writing Builder (Higher)

St James Academic Writing Steps

1. Be clear
2. Objective voice : No 'I's. Any-where. At all.
Put the writer in charge.
3. Speculative phrases: speculate to accumulate marks! Use uncertainty to sound smart!
4. Confident phrases - be the ex-pert.
5. Academic verbs
6. Interest phrases
7. 'Flow': Connective phrases
8. Context to introduce and idea
9. Voice: individual style

WAIT!

1. Before you choose: make sure you select adverbs, verbs and noun phrases that work together and make sense.
2. Check with your teacher or ask a friend if you're not sure.

| 2. Put the writer in charge: | 3. Choose your academic adverb: | 4. Choose your academic verb: | 5. Select your academic noun phrase: |
|---|--|--|---|
| The author The poet The writer [Author's name] Through the use of....., Shakespeare..... | powerfully movingly poignantly ironically insistently subversively persistently consistently subtly interestingly humorously unexpectedly typically unusually unsettlingly disturbingly | critiques exposes attacks alludes subverts explores criticises reveals plays with contrasts expresses insinuates argues highlights evokes exploits elicits suggests | attitudes sentimentality idealisation conventions consequences ideas language Truth symbolism metaphors illusions thoughts reality effects representations stereotypes clichés |
| | | | to of about |
| | | | love women poverty conflict ambition power war battle humanity control nature maturity loss of innocence loss of... human psyche human nature motherhood responsibility isolation identity gender |

| I. Construct an academic 'nod' to the context | |
|---|---|
| Appalled by | Appalled by widespread poverty, Dickens..... |
| Motivated by | Motivated by a desire for social reform, Priestley..... |
| Due to the widespread | Due to the widespread belief in Malthusian Economic theory, Dickens... |
| Driven by a desire to | Driven by a desire to promote social reform, Priestley. |
| Having witnessed | Having witnessed the widespread poverty in Victorian Britain, Dickens.... |
| Perhaps seeking to | Perhaps seeking to highlight the cruelty of child poverty, Dickens.... |
| An ardent believer in | An ardent believer in Socialist political ideologies, Priestley.... |

| Confident phrases | Speculative phrases |
|-------------------|---|
| Certainly | Perhaps |
| Unquestionably | It could also be suggested |
| Undoubtedly | It could also be interpreted |
| Fundamentally | It might |
| Ultimately | It could also be considered |
| This certainly | It could be viewed from a different perspective |
| Without doubt | Possibly |

Homework Expectations

What are the Independent Study expectations?

You must aim to meet the following expectations. Any adjustments to these expectations must be discussed with your Tutor:

- Check the schedule below to see which knowledge organisers you should use each day.
- Complete **work should reflect 15 minutes worth of recall/revision per subject.**
- Use your knowledge organiser after you have finished to **mark and correct** your own work.
- Write the date and subject heading for each piece of work.

T on **Time**

Homework should be **TANC**.

A **Accurate**

Any work that is not **TANC** will be considered incomplete.

N **Neat**

C **Complete**

Homework Timetable

Some subjects will not set homework every week, but when they do set homework, it will be due on set days. Your teachers will inform you of which day their homework is due in. Please add it to this table below. Equally, use this as a revision timetable to help you structure your spaced retrieval practice throughout year 11.

| | Subject 1 | Subject 2 | Subject 3 | Subject 4 |
|-----------|-----------|-----------|-------------|-----------|
| Monday | | | Sparx Maths | |
| Tuesday | | | | |
| Wednesday | | | | |
| Thursday | | | | |
| Friday | | | | |

Option subjects: Art & Design; Computing; Design Technology; Enterprise; Music; Food Preparation & Nutrition; Psychology; Performing Arts; Statistics; Sociology; Physical Education (Health & Fitness); Health & Social Care; iArt.

Deadline & Detention Timetable

| Monday | Tuesday | Wednesday | Thursday | Friday |
|--|--|---|---|---|
| SPARX on the homework timetable. MFL Quizlet set and checked on Monday (answer all questions). | MFL detention. Engineering Option A HW Check | Geography Educake deadline day and detention day. | SPARX catch-up/help. Science Educake deadline and detention day. Engineering Option B HW Check. Computing deadline. | History Educake deadline day and detention day (Min 60% pass rate). Psychology (mixed tasks) deadline and detention day. Computing detention. |

Stop

STOP

'They're not bullying you because of you, they're bullying you because of how they are'

Jessie J

Bullying affects lots of people and can happen anywhere: at school, travelling to and from school, in sporting teams, in friendship or family groups.

Bullying can take many forms including:

- emotional abuse
- social bullying
- social media
- threatening behaviour
- name calling
- cyberbullying
- sexting

Bullying includes REPEATEDLY:

- people calling you names
- making things up to get you into trouble
- hitting, pinching, biting, pushing and shoving
- taking things away from you
- damaging your belongings
- stealing your money
- taking your friends away from you or leaving you out
- posting insulting messages or rumours, in person online
- threats and intimidation
- making silent or abusive phone calls
- sending you offensive texts or messages

Speak

'Blowing out someone else's candles doesn't make yours shine any brighter'

Drake

Speak to someone.

No one has a magic wand, but we always do our best and we do really care.

Telling someone shares the problem. It helps you feel supported.

It is really important to tell someone, particularly if the bullying has been going on for a while or the strategies you've tried haven't worked.



You're **not** alone

Don't be afraid to tell an adult. **Telling isn't snitching!**



Support

'You always have to remember that bullies want to bring you down because you have something that they admire'

Zak Efron

What we do at St James to deal with bullying:

- **Mentoring** is having a named person you can go to for support at school. Tutor/HOY/Refocus/Other
- **Restorative justice** brings all children involved together so everyone affected plays a part in repairing the harm and finding a positive way forward.



Any form of bullying will not be accepted at St James.



Life after St James:

What qualification should I choose?

Since 2015, in England, young people must be in some form of 'education or training' until they are 18. (www.devon.gov.uk). The government decided to do this because it is widely recognised that staying in training improves your career prospects. Early in Year 11, you will need to decide what you want to do after your GCSEs.

- **Full-Time Study** - an academic or vocational qualification taken at a sixth form, college or training provider.
- **An Apprenticeship** - working for an employer while studying for a qualification as part of your training.
- **Traineeships** - this is an option for students who would like to do an apprenticeship but who do not yet have the experience, skills or qualifications to do so. A traineeship can prepare you for an apprenticeship.
- **Part-Time Study** - you may work or volunteer full-time if you are also studying part-time for a qualification.

ADVANCED (A) LEVELS

A Levels are academic qualifications, where you study a subject in depth. Most students chose three subjects, which are assessed by exams at the end of two years. There are many different subjects to choose from, so you need to see what courses are offered at your chosen provider.

When choosing A Levels, think about the combination of subjects - do they work well together? Some University courses require specific A Levels - so do your research when choosing.

Providers: 6th Forms and Further Education Colleges

TECHNICAL (T) LEVELS

T Levels are a new technical qualification, directly related to the world of work. You pick one subject, and the course is 80% study and 20% (or 45 days) of relevant work experience.

Like A Levels, T Levels take 2 years to complete. They are assessed by a mixture of exams and coursework, and students will be graded "Distinction", "Merit", "Pass" or fail. A Distinction is equivalent to three A* at A Level.

Providers: Exeter College currently offers three T Levels: Construction, Digital, and Education & Childcare. It is important to check the course guide (available in the school library) or their website for up to date information.

VOCATIONAL QUALIFICATIONS

Vocational qualifications are work-related qualifications that blend classroom learning with practical elements, often including work experience. There are literally hundreds of different qualifications at different levels, ranging from Entry Level up to Level 3 (including NVQs and BTECs), your options are only limited by what is offered locally. It is worth noting that T Levels will replace some Level 3 qualifications.

Providers: Further Education Colleges

THE INTERNATIONAL BACCALAUREATE (IB)

The IB Diploma is an academic qualification, where you study three subjects to a higher level and three at a standard level. There are also core courses that you must study. It allows you greater breadth than A Levels, although the trade-off is less depth.

Providers: Exeter College, Bridgwater & Taunton College

Entry Requirements: See website for specifics, but at least 6 GCSEs (inc. Maths and English) at Grade 6+.

Maths and English resits? If you get Grade 3 (or below) in your GCSE Maths or English, you will re-sit these qualifications as part of any course you study at college or as part of an apprenticeship. If you achieve lower than a Grade 3, you might be offered an alternative qualification called "Functional Skills Maths and English".

Local Further Education (FE) Colleges



Exeter College: Offers a whole range of subjects (e.g., Hair and Beauty, Childcare, Construction, Business Management, Performing Arts and Photography) at various levels (from Entry Level to Level 5). <https://exe-coll.ac.uk/>



Bicton College: Part of the Cornwall College group, the Bicton College site focuses on land-management type courses, including Animal Care and the Military and Protective Services. Again, it runs courses from Entry Level through to Level 5. www.bicton.ac.uk/



Exeter Maths School: A small college, focusing on Maths, Physics and Computer Science. Linked to the University of Exeter www.exetermathematicsschool.ac.uk/

Some of the secondary schools in Devon have a **Sixth Form** where students can stay at school and enter year 12 and then year 13. Sixth Forms typically focus on A-Level qualifications.

Apprenticeships

Apprenticeships combine practical training in a job with studying for a related qualification. The employer decides the qualification and chooses a training provider, which could be a local or national college or an industry-specific training provider. Apprenticeships are governed by "Standards". The standards set out the skills, knowledge and behaviours that apprentices must achieve during the apprenticeship.

At Post 16, you will probably be looking at Intermediate Level apprenticeships.

Traineeships are for students that do not have the relevant qualifications, experience or skills to start an apprenticeship but are interested in progressing on to one in the future. They involve a programme of up to six months of study, including a work placement, qualifications in Maths and English and support with finding a job or apprenticeship once the course is completed. Traineeships are unpaid. www.gov.uk/find-traineeship

In addition to Exeter College and Bicton College, there are local specialist training providers, who work with employers to deliver apprenticeships. If you are looking for an apprenticeship, it can help to talk to one of these providers as well as the colleges:



PGL Training offer a wide range of courses; from Hairdressing to Bricklaying, to Warehousing and Business Administration. Pick up a prospectus from the Careers Library or see www.pgtraining.com.

Many employers will not use local training providers for Apprenticeships. Some, such as Hays Travel, have an in-house scheme that they run themselves. Others, such as some accountancy firms, will also use national bodies such as Kaplan.

GOV.UK
Find an apprenticeship

Your location

Exeter (Devon)

[Use current location](#)

Within

20 miles

Apprenticeship level

Intermediate

Search results

We've found **76** apprenticeships in your selected area.

[Receive alerts for this search](#)

WHERE TO GO FOR MORE HELP...

Your 1:1 appointment with a qualified Careers Advisor

All students will receive an invitation to a 1:1 meeting with our qualified Careers Advisor, Maria. This meeting will take place at the end of Year 10 or the very start of Year 11. You should come to this meeting prepared to talk about your ideas, likes, dislikes. The Advisor will then be able to help you to focus your thinking.

Use your network

Your friends and family, tutors and teachers, people who know you well: tap into your network and ask them questions. What route did they take? What did they like / dislike? What do they think you would prefer? At the end of the day, it is your decision that you need to take, but it can be helpful to learn from other peoples' experiences.

Go online

Be sure to look at the website of local colleges and sixth forms, here you will find the most up to date selection of courses. The Career Pilot website is so easy to use. It has loads of useful information about all aspects of choosing your next steps. It is worth having a look, even if you are already certain about your choices. Another good one is BBC Bitesize, which has useful videos and information: www.bbc.co.uk/bitesize/articles/z6ws47h



Artist Research Guide AO1

Who is your chosen Artist?

Provide a brief biography...

What is their best-known work? Do they belong to a particular 'genre' or 'movement' of Art or Photography - i.e. Surrealism, Pop Art or Expressionism etc?

Sentence starters:

Andy Warhol was considered to be...

Frida Kahlo is thought to be...

The artwork, photograph, design

What is the title of the artwork you are looking at?

Why do you think the artist has chosen that title? What clues does it give you about the work?

The piece of work is titled...from the title I think the artist was...

The title of the work suggest...

What I first noticed about this piece of work...

Warhol's work is considered to be the pinnacle of Pop Art due to...

Analysis of artworks or photographs

Form - what has been printed, painted or sculptured? (Portrait, buildings? etc.) Please describe in detail.

Can you see any experimentation with the colour/composition/texture or materials?

I can see...

In the photograph...

The light that has been used...

Process - How has it been made? What materials, techniques or equipment have been used?

What size or scale is it?

I think the artist has used...

The artist has created the work using...

By using reds and orange the artist has created a...

The expressive brush strokes suggest...

I think it would have been interesting if the artist had used...

Context - what is the key themes in the artwork? What do you think the artist's intentions were? What does it remind you of? Is the mood of the work aggressive/tense/angry/happy/laid back/imposing/theatrical etc.?

Can you make links to other cultural references? Film? Theatre? Literature?

I think the main theme or idea behind this piece is...

I can see how this work links to... I think this because...

The artwork reminds me of...

I think the possible meaning behind the work is...

The mood of the artwork...

I think that the piece of work was created in response to...I think this because...

You're opinions...

What appeals to you about the image or artwork and the artist? How does it make you feel? What has it inspired you to do? What materials or techniques would you like to apply to your own art?

I think that the artist was trying to say...

My eyes are drawn to... I believe the artist has achieved this by...

If I were inside this artwork I would be feeling/thinking...

I like the idea of using this technique to make...

I would like to take the idea one step further and include...

I am going to use this artwork to inspire my own ideas and artwork by...

I'm very interested in trying out this technique and experimenting with...

Year 11 Combined Science Cycle Two

Key Vocabulary

- 1. Each exam is worth 16% of your final grade**
Biology paper 1 (70 minutes, 60 marks):
- CB1 key concepts
 - CB2 cells and control
 - CB3: genetics
 - CB4: natural selection and genetic modification
 - CB5: health, disease and the development of medicines

Chemistry paper 3 (70 minutes, 60 marks):

- CC1 states of matter
- CC2 separating and purifying substances
- CC3 atomic structure
- CC4 periodic table
- CC5 ionic bonding
- CC6 covalent bonding
- CC7 types of substance
- CC8 acids and alkalis
- CC9 calculations involving masses
- CC10 electrolytic processes
- CC11 obtaining and using metals
- CC12 reversible reactions and equilibria

Physics paper 5 (70 minutes, 60 marks):

- CP1 motion
- CP2 forces and motion
- CP3 conservation of energy
- CP4 waves
- CP5 light and EM spectrum
- CP6 radioactivity

Biology paper 2 (70 minutes, 60 marks):

- CB1: key concepts
- CB6: plant structures and their functions
- CB7: animal co-ordination, control and homeostasis
- CB8: exchange and transport in animals
- CB9: ecosystems and material cycles

Week 1

Chemistry paper 4 (70 minutes, 60 marks):

- CC3 atomic structure
- CC4 periodic table
- CC5 ionic bonding
- CC6 covalent bonding
- CC7 types of substance
- CC9 calculations involving masses
- CC13 groups in the periodic table
- CC14 rates of reaction
- CC15 heat energy changes in chemical reactions
- CC16 fuels
- CC17 earth and atmospheric science

Physics paper 6 (70 minutes, 60 marks):

- CP7 forces doing work
- CP8 forces and their effects
- CP9 electricity and circuits
- CP10 magnetism and motor effect
- CP11 electromagnetic induction

Week 3

Calculations in paper 1 - **biology:**

- Eye piece lens x objective lens = **overall magnification**
 - Image size ÷ actual size = **magnification**
 - (final mass- initial mass) ÷ initial mass x 100 = **percentage change in mass**
 - Amount broken down (g) ÷ time taken (min) = **rate of reaction (g/min)**
 - Mass (kg) ÷ height²(m) = **Body mass index**
 - Hip (mm) ÷ waist (mm) = **hip: waist ratio**
- Calculations in paper 3 - **chemistry:**
- Distance moved by spot ÷ distance moved by solvent = **Rf value**
 - Amount dissolved (g) ÷ volume of solution (dm³) = **concentration (g/dm³)**

Week 2

Calculations in paper 5 - **physics:**

- Distance(m) ÷ time (s) = **speed (m/s)**
- (final velocity (m/s) - initial velocity (m/s)) ÷ time(s) = **acceleration (m/s²)**
- Mass (kg) x gravitational field strength (N/kg) = **weight (N)**
- Mass (kg) x acceleration (m/s²) = **force (N)**
- Thinking distance + braking distance = **stopping distance**
- Useful energy output ÷ total energy input = **efficiency**
- 0.5 x mass (kg) x velocity² (m/s) = **kinetic energy (J)**
- Mass (kg) x gravitational field strength (N/kg) x change in height (m) = **gravitational potential energy (J)**
- Frequency (Hz) x wavelength (m) = **wave speed (m/s)**

Week 4

CB1 key concepts in biology:

- There are various ways in which substances can move:
 - diffusion** is the movement of particles from an area of **high concentration to low concentration**. It is a **passive process**
 - osmosis** is the movement of **water** molecules from an area of **high concentration to low concentration** across a **partially permeable** membrane. It is a **passive process**
 - active transport** is the movement of substances against the concentration gradient (from **low to high concentration**). It requires a **membrane and energy**

| Week 5 | Week 6 | Week 7 | | | | | | | | | | | | | | | | |
|--|---|--|----------------|------|----------|--------|-----|---|---------|---------|---|---|---------|----------|----|--------|----------------|--|
| <p>CBI key concepts in biology:</p> <ol style="list-style-type: none"> Enzymes are biological catalysts which speed up the rate of reaction without being used up. <ol style="list-style-type: none"> protease breaks proteins into amino acids amylase breaks starch into sugars Lipase breaks lipids into fatty acids and glycerol Enzymes can be affected by three conditions: <ol style="list-style-type: none"> temperatures: low temperatures do not provide enough activation energy for reactions to occur; high temperatures denature enzymes pH: must be suitable for where enzyme is works in the body or it will denature substrate concentration: an increase in substrate concentration will increase ROR until a point when rate plateaus | <p>CC3 atomic structure:</p> <ol style="list-style-type: none"> Atomic structure: <table border="1" data-bbox="295 840 438 1400"> <thead> <tr> <th>Particle</th> <th>Charge</th> <th>Mass</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Proton</td> <td>+ 1</td> <td>1</td> <td>Nucleus</td> </tr> <tr> <td>Neutron</td> <td>0</td> <td>1</td> <td>Nucleus</td> </tr> <tr> <td>Electron</td> <td>-1</td> <td>1/1835</td> <td>Electron Shell</td> </tr> </tbody> </table> There is always the same number of protons & electrons in an atom. Atomic mass = protons + neutrons Atomic number = protons Mendeleev arranged the Periodic Table in order of increasing atomic mass but this isn't true in some cases because of the masses of some of the isotopes. | Particle | Charge | Mass | Location | Proton | + 1 | 1 | Nucleus | Neutron | 0 | 1 | Nucleus | Electron | -1 | 1/1835 | Electron Shell | <p>CC5 and CC6 ionic and covalent bonding:</p> <ol style="list-style-type: none"> Ionic bonds are formed by the transfer of electrons between metals and non-metal atoms to form ions (a group of atoms with positive or negative charge). Anions are negative ions and are formed by the addition of electrons. Cations are positive ions and are formed by the loss of electrons. Group 1 lose 1 electron and form 1+ ions. Group 2 lose 2 electrons and form 2+ ions. Group 6 gain 2 electrons and form 2- ions. Group 7 gain 1 electron and form 1- ions. Covalent bonds are formed when a pair of electrons is shared between atoms. Covalent bonds form between non-metals and create molecules. |
| Particle | Charge | Mass | Location | | | | | | | | | | | | | | | |
| Proton | + 1 | 1 | Nucleus | | | | | | | | | | | | | | | |
| Neutron | 0 | 1 | Nucleus | | | | | | | | | | | | | | | |
| Electron | -1 | 1/1835 | Electron Shell | | | | | | | | | | | | | | | |
| <p>Week 8</p> <p>Physics: acceleration core practical:</p> <ol style="list-style-type: none"> Aim is to investigate the relationship between force, mass and acceleration Independent variable is the mass of the trolley Dependent variable is the acceleration of the trolley measured by light gates Control variables are height of ramp, force on pulley A piece of card is needed on the top of the trolley to set off the light gates This investigation can be adapted to investigate force by changing the masses on the end of the pulley You would need to transfer masses from the pulley to the trolley to ensure the mass of the system is kept the same | <p>Week 9</p> <p>Physics: wave core practical:</p> <ol style="list-style-type: none"> Aim is to investigate the suitability of equipment needed to measure the speed of waves in a solid and a liquid. Waves in a liquid: <ol style="list-style-type: none"> a ripple tank is set up filled with water and a dipper attached to a motor the frequency is measured by counting how many waves are formed in 10 seconds this can be improved by taking a slow motion video and dividing the number by 10 the wavelength is estimated using a ruler on the side of the tank this can be improved by taking a photo of the wave <p>Waves in a solid:</p> <ol style="list-style-type: none"> frequency app held near bar = frequency length of the rod $\times 2$ = wavelength | <p>Week 10</p> <p>Physics: refraction core practical:</p> <ol style="list-style-type: none"> Refraction is the change in direction of a wave due to a change in density The ray of light shining into the glass block is called the incident ray The ray of light travelling through the glass block is called the refracted ray The normal line is drawn at 90° to the glass block The angle of incidence is measured between the normal line and incident ray The angle of refraction is measured between the normal line and the refracted ray When light enters a more dense medium it refracts towards the normal When light enters a less dense medium it refracts away from the normal | | | | | | | | | | | | | | | | |

| Year 1 Engineering Design and Technology Cycle Two - Unit R108 3D Design Realisation | | | | |
|--|---|--|---|---|
| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
| <p>FLOW CHARTS</p> <p>A flow chart is a block diagram that shows how various processes are linked together to achieve a specific outcome. Each box shape has a different meaning. Question boxes allow feedback loops that mean the flow returns to an earlier process. We will use flow charts to plan out a document specific workshop processes like programming the Laser cutter or CNC Router.</p> | <p>GANTT CHART</p> <p>Gantt Charts are designed to carefully chart progress through activities against time. They allow for simultaneous activity to be shown. We will use this technique to plan the manufacture of our product to make sure we have enough time for each stage.</p> | <p>PLANNING TABLES</p> <p>A planning table is a formal way to record all the relevant information needed to undertake the making of a prototype. Some aspects of it are similar to the information in a GANTT Chart but visually they are different. Included in the table should be</p> <ul style="list-style-type: none"> » The stages of the manufacture » The processes, materials, tool, and equipment for each stage » Health and Safety Requirements » Quality Control measures » Time allocation » Other relevant information | <p>PLANNING FOR CNC MANUFACTURE</p> <p>CNC Machining firstly requires a 3D CAD model or a 2D Design depending on the machine that is to be used. Once finished the model or 2D draft is transferred into a new file format that the machine can use to follow co-ordinates that match your original creation. Each machine is different and materials, file conversion, colour assignments and possible effects are different for each machine. We have a CNC Router which uses 2D design or Creo to get data from and a Laser Cutter that can use any .dxf file to engrave and cut.</p> | <p>PARTS LIST</p> <p>A Parts list identifies all the individual components required to make a working product. Each of the parts can be labelled in for example an exploded assembly diagram then numbered so it can be used to identify a component for ordering or manufacture</p> |
| Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
| <p>CUTTING LIST</p> <p>A cutting list provides information about the components to be produced. It refers to the materials required to make the parts i.e. the size of the sheet or bar required to make the part from. In the table itself would be the length (L), width (W) and thickness (T) in mm along with the name, description, material, Quantity and component name and number.</p> | <p>HEALTH & SAFETY REQUIREMENTS</p> <p>The safety of any manufacturing or production process needs to be considered so to keep you and other workshop users safe.</p> <p>Risk Assessments</p> <p>When undertaking a RA you need to identify hazards and estimate the severity and probability of that hazard causing injury. Where a risk is identified then a control measure is put in place to reduce the severity or probability. A good example of this is a pair of safety goggles.</p> | <p>TIME REQUIREMENTS</p> <p>You can only estimate from your experience how long an engineering process will take. As you become more experienced this will become more accurate. The key thing is to use a GANTT chart for example as a 'live' document so you can adjust your timings as you go so you ensure you achieve the required deadline.</p> | <p>TESTING</p> <p>Quality Control testing can occur at any stage of manufacture to make sure that standards of function and all round quality criteria have been met. An example of this would be checking an electronic circuit as soon as possible during assembly to check for faults. You would only then assemble working circuits into product casings.</p> | <p>EVALUATION</p> <p>Tests and checks take place at any point in the design and manufacturing process and could include</p> <ul style="list-style-type: none"> » Visual checks of shape, fit or finish i.e. does it look as it should and does it fit together as it should. » Dimensional checking against drawings and tolerances. |

Year 11 English Cycle Two - Paper 2

| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
|--|--|--|--|--|
| <p>EXAM SUMMARY</p> <p>READING SECTION</p> <p>Question 1</p> <ul style="list-style-type: none"> >> 4 marks. >> Select 4 true statements from a 8 possibly true statements. <p>Question 2</p> <ul style="list-style-type: none"> >> 8 marks. >> Infer - showing similarities or differences between the texts. <p>Question 3</p> <ul style="list-style-type: none"> >> 12 marks. >> Analyse how language is used. >> Same as P1, Q2 – IMPACTS language analysis. <p>Question 4</p> <ul style="list-style-type: none"> >> 16 marks. >> Compare writers' viewpoints, feelings and perspectives. >> Analyse how language is used to present feelings and perspectives. <p>WRITING SECTION</p> <p>Question 5</p> <ul style="list-style-type: none"> >> 40 marks (24 for content and organisation, 16 for technical accuracy) >> Write a piece of non-fiction expressing your perspective on a topic. Could be a letter; speech, article or essay. | <p>CONJUNCTIVE ADVERBIALS</p> <p>CAUSAL:</p> <ul style="list-style-type: none"> >> Accordingly, >> As a result, >> Hence >> Therefore >> Thus <p><i>The boat is described as 'brand new, therefore we can infer it's in excellent, unused condition.</i></p> <p>DEVELOPING:</p> <ul style="list-style-type: none"> >> Also, >> Furthermore, >> Indeed, >> Likewise, >> Moreover, >> Similarly, <p><i>Furthermore, the writer also uses a pattern of dynamic verbs to add to the face-paced action...</i></p> <p>CONTRADICTING:</p> <ul style="list-style-type: none"> >> However, >> Whereas, >> Despite this, >> Conversely, >> Nevertheless, >> On the other hand, <p>TEMPORAL:</p> <ul style="list-style-type: none"> >> Meanwhile, >> Subsequently >> Eventually, >> Simultaneously, >> Initially, >> Finally, <p><i>Initially, the writer feels calm and even stoical about the journey ahead. However, as the situation becomes more dangerous, he begins to feel...</i></p> | <p>DESCRIBING TONE</p> <p>Optimistic - hopeful about the future or the success of something.</p> <p>Admiring Approving - Shows you like or respect something.</p> <p>Courageous Stoical Patient - Dealing with a situation without complaining or panicking</p> <p>Humorous - Comedic. Thinking something is funny or amusing.</p> <p>Compassionate Sympathetic - Feeling pity and understanding for someone's suffering.</p> <p>Nostalgic Wistful Sentimental - looking back on the past, remembering it as being better.</p> <p>Self-deprecating - Criticising yourself in a light-hearted way.</p> <p>Bemused Confused - Feeling puzzled.</p> <p>Forthright - Direct, outspoken.</p> <p>Introspective Contemplative - Looking inward at one's thoughts or feelings.</p> <p>Elated Overjoyed Delighted - Feeling really happy about something.</p> | <p>DESCRIBING TONE</p> <p>Pessimistic - Believing that the worst will happen.</p> <p>Disgusted Appalled - Feeling a strong sense of dislike or disapproval.</p> <p>Panicked Alarmed Distressed - Feeling very afraid or anxious about a situation.</p> <p>Serious Solemn - Treating something as important, not in any way funny.</p> <p>Contemptuous - Showing you do not like or respect something or someone.</p> <p>Mocking Sarcastic Sardonic - Being critical but in a humorous way.</p> <p>Cynical - Not trusting that something will be successful or not believing someone's honesty or morals.</p> <p>Incredulous Disbelieving - Feeling shocked because you can't believe something.</p> <p>Dejected Down-hearted - Feeling miserable because you are disappointed.</p> <p>Detached - Not engaged or interested.</p> <p>Hostile - Showing that you disagree or disapprove of someone.</p> | <p>PLANNING</p> <p>Step 1: Generate ideas both for and against the statement.</p> <p>Step 2: Write your premise based on your preferred 'side' as this determines the direction of your argument.</p> <p>Step 3: Put points from Step 1 in the right part of the plan (eg do they belong in the 'because' section, or the 'but' section).</p> <p>Step 4: Decide on the writing features that you will use (eg anecdote, statistics, social media future).</p> <p>PREMISE: clear point of view</p> <p>BECAUSE: Reason/ justification 1</p> <p>BECAUSE: Reason/ justification 2</p> <p>BECAUSE: Reason/ justification 3</p> <p>HOWEVER/ BUT: Counter argument 1 (and destroy)</p> <p>HOWEVER/ BUT: Counter argument 2 (and destroy)</p> <p>THEREFORE/ SO: Solution</p> <p>Reinforce/reframe premise</p> |

Year 11 English Cycle Two - Paper 2

| Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
|--|---|---|--|--|
| <p>PARAGRAPH TYPES</p> <p>Premise</p> <p>We live in a world where... "We live in a world where...; where...; where...; isn't it time we...?"</p> <p>Imagine... "Imagine, it is twenty years from now and global warming is a distant memory..."</p> <p>Triplets, colon, sentence... "Cold, hungry and alone: this is the every day life of homeless teenagers on the streets of Exeter."</p> <p>What if... "What if we never found a way to replace plastics. What if we never managed to replenish dwindling fish stocks? What if we never solved the climate crisis?"</p> <p>Anatomy of a Social Media Furore:</p> <ul style="list-style-type: none"> Who? Credentials add hype or outrage. Who is your adversary? What? Craft a quote that might create a response. So what? Link to your argument. Use a rhetorical question and add your opinion. <p>Anatomy of an interview:</p> <ul style="list-style-type: none"> Who? Credentials create credibility. What? Craft a quote that supports your argument. So what? Link to your argument. Use an adverb to signpost how you feel about their statement. <p>Anatomy of a case study:</p> <ul style="list-style-type: none"> Who? Credentials create credibility. What? Say what they did and what happened. So what? Link to your argument by using an 'if...then' statement. | <p>PARAGRAPH TYPES</p> <p>Anatomy of an anecdote:</p> <ul style="list-style-type: none"> Who? Make it personal. What? Say what happened. So what? Link to your argument by showing how you or the person you know were affected. <p>Anatomy of statistics:</p> <ul style="list-style-type: none"> Who? Credentials create credibility. What? Describe the study and what the results were. So what? Link to your argument. Use an adverb to signpost how you feel about the statistic and say what should be done as a result of this information. <p>Anatomy of a counter-argument:</p> <ul style="list-style-type: none"> Who? Who disagrees with you? What? What's your argument, but what do they say? So what? Link to your argument by explaining what's wrong with their view and/or why you're right. <p>Ending on a rhetorical question works well.</p> <p>Anatomy of a call to arms:</p> <ul style="list-style-type: none"> Who? Who should be taking action? What? What should they do? So what? What will be the result? <p>Anatomy of a reframed premise:</p> <ul style="list-style-type: none"> It mirrors the opening premise, but with an opposite world imagined. | <p>TIER 2 ADJECTIVES</p> <p>Learn this vocabulary and practise by putting it into your own sentences.</p> <ul style="list-style-type: none"> Adamant (certain) Absurd (ridiculous) Abhorrent (disgusting, offensive) Brazen (bold, blatant) Complacent (ignorant, not bothered about) Crucial (important) Determined (strong-minded) Diligent (hard working, conscientious) Detrimental (damaging) Heinous (evil or extremely horrible) Indisputable (can't argue against) Integral (important) Lacklustre (dull) Momentous (significant, life-changing) Oblivious (unaware) Paramount (important) Pivotal (important, turning point) Prevalent (widespread) Rapid (quick) The status quo (the way things are) Unequivocal (clear, leaving no doubt) Unprecedented (hasn't happened before, unbelievable) Vociferous (loud, protesting) | <p>SENTENCE VARIATION</p> <p>Using the examples below, write your own sentences on a topic of your choice.</p> <p>Anaphora: We need to change. We need to evolve. We need to make progress in society.</p> <p>Emotive adjectives: This is an opportunity unique in its time, unprecedented in its potential impact, unattainable until now.</p> <p>Repeated simple sentences: I cannot think of a reason. I cannot think of one single reason.</p> <p>Imperatives: Let go of the past and work to build a more positive future.</p> <p>Using dashes to create asides: There are - and I make no exaggeration here - innumerable people who share this viewpoint.</p> <p>Using subordinate clauses to develop arguments - When you ignore your responsibilities, you cause problems for yourself and for others.</p> <p>Using fragments to create focal points - One mission, just one.</p> <p>Using semicolons to list: <i>Sugar is dangerous; it decays our teeth; it atrophies our liver; it sends confusing signals to our brain and it blocks our precious veins.</i></p> | <p>SENTENCE VARIATION</p> <p>The 'trailer' opening with two semi-colons and a colon. We live in a world where cities have become uninhabitable; where exhaust fumes clog our lungs; where crossing the road becomes a dice with death; isn't it about time we did something to alleviate this torture?</p> <p>Contrast - Whilst we sleep in our comfortable beds safely within our secure homes, there is another world out there which literally begs us to listen.</p> <p>The dramatic sentence - Tonight, a homeless person near you will die.</p> <p>The 'For too long' and a colon - For too long, we have ignored the pressing issue of the homeless in our society; it is time that we as a community did something about it.</p> <p>The 'I understand ... (semi-colon) however...' - I understand that there are people out there who claim that some homeless people are not genuine; however, can we afford to play with people's lives based on what we think are a minority?</p> <p>'Now, more than ever' - Now, more than ever, we need to ensure that those who lack the basic human rights of shelter and warmth are provided with hope and a better future.</p> |

Further Maths

Expectations:

Work for Further Maths will be set and completed on worksheets handed out in the lesson each week. Support is available on Maths Genie and Corbett Maths (see links below!) as well as past papers and mark schemes. Please note there is a large crossover of topics between Maths GCSE Higher content and Further Maths so many topics will also be on SPARX.

| Cycle Two | Topic to be covered |
|-----------|---|
| Week 1 | Recap Coordinate Geometry - equations of straight lines, midpoints, perpendicular equations. |
| Week 2 | Recap Coordinate Geometry - find the distance between 2 points, sharing lines into a ratio. |
| Week 3 | Equations of circles |
| Week 4 | Recap - Pythagoras, Trigonometry, Sine and Cosine rule. |
| Week 5 | Trigonometric Graphs and 3D trigonometry. |
| Week 6 | Finding the gradient of a curve and the tangent. |
| Week 7 | Differentiation |
| Week 8 | Integration |
| Week 9 | Stationary Points on a curve |
| Week 10 | Past Paper practice |



Corbettmαths

<https://corbettmaths.com/more/further-maths/>

Maths Genie

<https://www.mathsgenie.co.uk/statistics.html>

Year 1 | Geography Cycle Two - The Challenge of Resource Management (Paper 2)

Week 1

Resource: a stock of supply of something that has a value or a purpose.
Resource management: the control and monitoring of resources so they do not become depleted or exhausted. Resources are unevenly distributed across the world. Most HICs have plentiful supplies and a good standard of living. Poorer countries e.g. sub-Saharan Africa, have a lack of resources and struggled to progress.

Food: World Health Organisation suggests we need 2000-2400 calories per day to be healthy (one billion people fall below this). Further two billion people have undernutrition - poorly balanced diet lacking vitamins.

Water: Imbalance in water supply due to climate variations. UN estimates that by 2025 there will be 50 countries facing water scarcity. Expensive to capture and store water.

Energy: Required for economic development. Powers factories and machinery and provides fuel for transport. Consumption increasing as the world becomes more developed. The Middle East supplies much of the world's oil yet, own use is relatively small. Demand in NEEs increasing as they industrialise.

Week 2

DEMAND FOR ENERGY IN THE UK
 UK energy consumption has fallen in recent years, despite demand increasing due to the decline of heavy industries and improved energy conservation.

UK's **energy mix** (the range of proportion of different energy sources) has changed over the last 25 years.

The UK is no longer energy sufficient and has used 75% of its known oil and natural gas reserves. The UK imports approximately 75% of its energy, making it energy insecure. In 2015, the government decided to phase out the subsidies for renewable energy.

The major change in the UK has been the decline of coal. The last coal mine in the UK closed in 2015. Decline due to concerns about greenhouse gases as well as the age of coal-fired power stations.

The UK has rich reserves of natural gas trapped deep underground in shale rocks. **Fracking** - where high pressure liquids are introduced to fracture the shale and release the gas - is a possibility for the future.

Proposed new nuclear power station and Hinkley Point C will cost £18 billion.

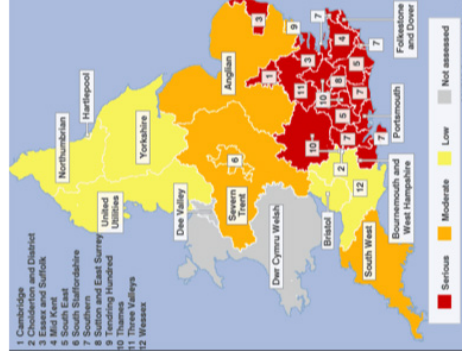
Week 3

DEMAND FOR WATER IN THE UK
 Almost 50% of the UK's water supply is used in households (known as **domestic use**).

The south and east of the UK has a **water deficit** where demand exceeds supply. It is the most densely populated part of the country, yet it has the lowest annual rainfall.

Water stress: occurs where demand for water exceeds supply in a certain period. Saving water helps to manage water supplies. Examples include the use of a water meter in homes, increasing the use of recycled water (**grey water**) and more efficient domestic appliances.

The **red areas** below show the areas in greatest water stress.



Week 4

DEMAND FOR FOOD IN THE UK
 The UK imports 40% of the total food consumed. This is due to the demand for seasonal and more exotic foods all year round (e.g. strawberries), the availability of cheaper food abroad and the fact that the climate in the UK is unsuitable for some foods to grow.

Food miles: the distance covered to supply food, from producer to consumer
Carbon footprint: measurement of the greenhouse gases individuals produce as a result of their activities.

There is growing interest in sourcing food locally to reduce carbon emissions. People are being encouraged to eat seasonal foods produced in the UK.

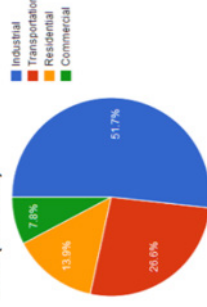
Agribusiness: intensive farming aimed at maximising the amount of food produced. They have high levels of investment, use modern machinery and chemicals.

Organic produce: grown without the use of chemicals. Tends to be more expensive for the consumer due to higher labour costs.

Week 5

Energy consumption per person is very high in countries like the USA, Canada, Australia, much of Europe and parts of the Middle East.
 It is low across most of Africa and parts of south east Asia.
 Access to cheap and reliable energy sources is important to the health of a country's economy.

World Energy Consumption by Sector, 2012 (EIA Data)



WHY IS ENERGY CONSUMPTION INCREASING?

Economic development: NEEs will account for more than 90% of the growth in demand for energy by 2035. This is due to industrialisation and greater wealth.

Rising population: In 2015, the world's population was 7.5 billion. By 2050, it is predicted to rise to 9 billion. Extra people will use more energy.

Technology: Increase in use of computers and other electrical equipment means greater demand for energy. As quality of life improves, the demand for vehicles, lighting and heating also increases.

| Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
|--|---|---|--|--|
| <p>FACTORS AFFECTING ENERGY SUPPLY</p> <p>Physical factors: The geology of an area determines availability of fossil fuels. Natural gas and oil trapped in folded layers of rock. Geothermal energy produced in tectonically active areas e.g. Iceland.</p> <p>Climate: Amount of sunshine and wind affects solar and wind energy. Hydroelectric power needs a suitable dam site in sparsely populated, mountainous areas with high rainfall.</p> <p>Political factors: Instability in the Middle East means oil-consuming countries are looking for alternative sources. German government planning to stop using nuclear energy.</p> <p>Technology: Allowed for access in more remote areas e.g. Arctic. Advances have made it possible to exploit unconventional sources like shale gas by fracking.</p> <p>Cost of exploitation and production: Oil rigs and pipelines require huge investment. Nuclear power stations expensive to build.</p> | <p>Energy insecurity: a situation where a country has to rely on others to supply most of its energy. This dependence makes a country politically vulnerable.</p> <p>IMPACTS OF ENERGY INSECURITY</p> <p>Environmental impacts: clearing rainforests to grow biofuels, drilling for oil and gas in environmentally sensitive areas like the Arctic Circle with a risk of oil spills, valleys being flooded for hydroelectric power, Wind and solar farms ruins scenic landscape</p> <p>Economic impacts: Food production uses 30% of global energy. Use of biofuels has increased food prices as the land is used for energy generation, not growing crops for food. In some LICs, women collecting firewood has led to less time growing crops, so more food insecurity.</p> <p>Social impacts: Rise in energy prices will increase cost of living e.g. running the home. Power cuts mean that people are without light and cannot use electrical appliances.</p> <p>Potential for conflict: where pipelines and cables cross borders there can be conflict between supplier and consumer e.g. Russia selling gas to Ukraine/ Europe. Conflict between different users e.g. people, agriculture, industry and transport.</p> | <p>TWO OPTIONS FOR INCREASING ENERGY SUPPLY:</p> <ul style="list-style-type: none"> Develop and increase the use of renewable sources (e.g. solar) Continue to exploit non-renewable fossil fuels and develop nuclear power <p>CAN RENEWABLE ENERGY INCREASE SUPPLIES?</p> <p>Hydro (HEP): Expensive and controversial but currently contributes 85% of global renewable electricity.</p> <p>Solar: energy production is seasonal and farms need lots of space. Great potential in some LICs.</p> <p>Geothermal: limited to tectonically active regions only e.g. USA, Iceland, Philippines.</p> <p>WHAT ABOUT NON-RENEWABLE ENERGY?</p> <p>Fossil fuels: Still plenty of resources left in the world. Carbon capture techniques can help to limit the environmental impact.</p> <p>Nuclear power: Very expensive to build. Cost of the raw material - uranium - is relatively low as only small amounts are used. Main problem is the disposal of radioactive waste. Good safety record but some notable disasters e.g. Chernobyl.</p> | <p>EXTRACTING A FOSSIL FUEL: NATURAL GAS</p>  <p>Locations of Natural Gas</p> <p>Natural gas is a hydrocarbon.</p> <p>ADVANTAGES OF EXTRACTING GAS</p> <p>Cleanest of the fossil fuels with 45% less CO₂ emissions.</p> <p>Less risk of environmental accidents than oil. Employment for 1.2 million people.</p> <p>Can be transported in a variety of ways e.g. pipelines or tankers.</p> <p>Relatively abundant compared to other fossil fuels. This increases as we exploit shale gas.</p> <p>DISADVANTAGES OF EXTRACTING GAS</p> <p>Dangerous is handled and transported carelessly. Some reserves are in countries that are politically unstable. Produces methane and carbon dioxide. Fracking is controversial. Lots of water needed. It could contaminate groundwater and cause minor earthquakes. Pipelines are expensive to build and maintain.</p> | <p>SUSTAINABLE ENERGY SCHEME: CHAMBAMONTERA MICRO-HYDRO SCHEME</p> <p>Chambamontera is an isolated community in the Andes Mountains of Peru. Steep slopes rising to 1700m with rough roads. Low population density so uneconomic to build an electricity grid. Despite farming being efficient, nearly half the population survive on just \$2 per day.</p> <p>Solution: construction of a micro-hydro scheme supported by the charity, Practical Action. High rainfall, steep slopes and fast flowing river makes it ideal for exploiting water power.</p> <p>Total cost was \$51,000. Community had to pay some, average cost \$750 per family. Credit was made available to some families.</p> <p>Benefits to the community: regulating flow has reduced the danger of flooding, street lights mean that people can go out after dark, electricity is available in the winter for heating, the scheme will last 25 years, healthcare has improved as medicines can be refrigerated, reduced fire risk as kerosene is no longer used.</p> |

Year 1 | History Cycle Two - Superpower Relations and the Cold War

Week 1

WHAT WAS THE COLD WAR?

- USSR:** A group of countries led by Russia. AKA the Soviet Union
- Grand Alliance:** Wartime alliance between USA, Britain and USSR
- Sphere of Influence:** The region over which a country has influence/control
- Demilitarisation:** The removal of army and other military from a region
- Satellite states:** Countries controlled by a larger, more powerful nation
- Containment:** The US plan to prevent the spread of Communism
- Iron Curtain:** The name given to the 'border' of Western/Eastern Europe
- Doctrine:** A key message that you are committed to enforcing
- Comecon:** Organisation to increase Soviet economic control in Europe
- Cominform:** Organisation encouraging cooperation between communist countries
- Blockade:** Preventing access to a location or region

Week 2

WHAT WAS THE COLD WAR? 2

- Bizonia:** The merging of the German regions controlled by the US and Britain
- Airlift:** Bringing needed goods into a region by air
- NATO:** Military alliance of America and its allies
- Warsaw Pact:** Military alliance of the USSR and its allies
- Arms race:** Competitive military spending between countries
- ICBM:** Missiles that can be fired huge distances - across continents
- H-Bomb:** Hydrogen bomb - a very powerful and destructive weapon
- B-52:** The type of bomber aircraft used by the USA
- Sputnik:** A Soviet satellite, the first man made satellite in space
- Destalinisation:** Khrushchev's policy of moving away from Stalin's methods
- Secret Police:** Organisations that enforce the law but are not accountable or public
- Guerrilla:** A type of fighting that relies on ambushes or unconventional warfare

Week 3

THE ARMS RACE

- 1945:** The USA tests its first atomic bomb. It is used twice, against Japan. Joseph Stalin demands the USSR develop its own nuclear capability, and triples the pay of scientists working on the project.
- 1949:** The USSR carries out its first successful nuclear test. In the US, Truman massively increases defence spending and work commences on a new, more powerful 'hydrogen bomb' (H-bomb)
- 1953:** The US and USSR both conduct their first successful H-Bomb tests. Both sides are now in possession of powerful nuclear weapons.
- 1954:** The US explodes its largest ever H-Bomb - the equivalent of 15 million tons of TNT, and capable of wiping out Moscow, the Soviet capital. The USSR had similar capability to wipe out American cities.
- 1957:** The Soviet Union launches the first satellite into space. The US fears that this could eventually lead to a military threat, and diverts resources to its own space program.
- 1962:** The Cuban Missile Crisis - the US discovers Soviet nuclear missiles in Cuba, 90 miles off the coast of Florida. The USA has 63 inter-continental missiles, 21 nuclear submarines, 24 aircraft carriers and 96 missiles capable of being launched from submarines. The USSR had more than 50 inter-continental missiles, and no aircraft carriers, no sub-launched missiles and only 2 nuclear submarines. The USA had started to pull ahead in the arms race, but both sides possessed enough nuclear weapons to wipe the other side out many times over.

Week 4

CAPITALISM VS COMMUNISM

CAPITALISM

- Politics:** Favours democracy - people choose their leaders from several different parties.
- Economy:** Businesses are privately owned, and there are opportunities to become very wealthy for some people. If you work hard and are good at your job, you will be promoted and earn more money - this gives people an incentive to work.
- Beliefs:** Freedom is good and is necessary for a successful society. Some people will be wealthier than others but mostly this should reflect their ability, ingenuity and hard work. It would be unfair for everyone to be equal if some work harder than others. Capitalism should be the system used by the rest of the world because it encourages prosperity and development.
- Problems:** Capitalism leads to inequality - some people become very rich, but others become very poor. Power is concentrated in the hands of a minority of rich and powerful individuals, whilst the poor are vulnerable to being exploited.

COMMUNISM

- Politics:** Only one party allowed, the Communist Party, which represents the people. There are no elections and you cannot change your government.
- Economy:** Businesses are all owned publicly - by the government. All profits and products are shared amongst the people. Nobody becomes hugely wealthy, but nobody is much poorer than anyone else.
- Beliefs:** Freedoms such as a free media and freedom to hold different political views is harmful to the unity and success of the country. Everyone should be equal, and it is the government's job to ensure that this happens, as capitalism will exploit the poor and the workers to benefit the elite. Communism should be the system used by the rest of the world, and the USSR should encourage revolutions in other countries to ensure this happens.
- Problems:** Communism leads to a lack of productivity - why work hard with no opportunity for financial reward? It also stifles creativity - people are less likely to have the freedom and incentive to develop ideas if they won't personally benefit from them. Lack of democracy leads to the suppression of other basic rights.

Year 11 History Cycle Two - Superpower Relations and the Cold War

| Week 5 | Week 6 | Week 7 |
|---|---|--|
| <p>WHAT WAS THE COLD WAR? 3</p> <p>Defection: Leaving one country to go to its enemy Refugee: A person fleeing crisis in their home country Ultimatum: A final choice with two serious options Checkpoint: A guarded border post on the Berlin Wall Diplomat: A representative from one country in another Exile: A person forced to leave a country to live in another CIA: The Central Intelligence Agency - US spy network Bay of Pigs: A bay in Cuba that was the focus of a failed invasion Hawks and Doves: People who favoured aggressive or diplomatic US response Brinkmanship: Going right to the edge to get what you want Hotline: A telephone connection to allow instant communication Treaty: An agreement between countries Deterrence: The thaw in relations that led to progress between US/USSR Reforms: Changes to the way the country is run Censorship: Limiting the information that people have access to Resistance: Refusal to cooperate Brezhnev Doctrine: USSR plan to invade countries which threatened E. Europe Vietnam War: A disastrous conflict the US was involved in in the 1960s/70s</p> | <p>BERLIN CRISIS OF 1948 The Berlin crisis of 1948 was caused by Stalin, who was resentful of the US and Britain having free access through East Germany to get to their sectors of Berlin. He thought they were spying on the Communist country and were spreading pro-capitalist messages. He closed off all the roads and railways, and attempted to force the US and Britain to give up their claim to West Berlin. Instead, the US organised airlifts of food and fuel to defeat the blockade and save the people of West Berlin. Stalin eventually had to back down. This crisis was significant in the wider Cold War because it showed that the USA was prepared to back up its words in the Truman Doctrine with actions. It was also significant because it led to the creation of NATO.</p> <p>BERLIN CRISIS OF 1961 The Berlin Crisis of 1961 was caused by Khrushchev, who was resentful of highly qualified professionals leaving East Berlin and East Germany. There was no border between the East and West zones, meaning that people frequently travelled to the West and then on to capitalist countries that they otherwise were not allowed to go to. Highly qualified people knew they could earn lots more money in the capitalist West, so the 'brain drain' was a big concern for Khrushchev. He attempted to force the US to prevent this migration, but the US refused, so Khrushchev authorised the East Germans to build a wall around the entirety of West Berlin. This meant no East Germans could enter or they would be shot. Migration stopped, but the city was cut in two. The wall stood for 28 years.</p> | <p>THE BERLIN CRISIS 1961</p> <p>Key individuals: Eisenhower and Kennedy (USA) Khrushchev (USSR)</p> <p>Causes: 'Brain drain' refugee crisis - hundreds of thousands of highly qualified workers leaving East Germany for the West</p> <p>Key events: Berlin ultimatum 1958, Vienna Summit 1961, Construction of the Berlin Wall 1961</p> <p>Outcomes: West Berlin isolated and migration ended, Heightened tensions between USA and USSR</p> <p>CUBAN MISSILE CRISIS 1962</p> <p>Key individuals: Kennedy (USA), Khrushchev (USSR), Castro (Cuba)</p> <p>Causes: USSR placed missiles on Cuba in response to US Jupiter missiles in Turkey.</p> <p>Key events: Communist revolution led by Castro 1959, Bay of Pigs invasion 1961, Missiles discovered by USA, Kennedy ordered removal + blockaded Cuba</p> <p>Outcomes: Increased rivalry between USA and USSR, Hotline installed for instant communication, Various treaties between 1963 and 1968</p> <p>CZECHOSLOVAKIA 1968</p> <p>Key individuals: Brezhnev (USSR), Dubcek (Czechoslovakia), Johnson (USA)</p> <p>Causes: Czechs demanded greater freedoms and economic reform. Dubcek appointed leader</p> <p>Key events: Dubcek announced Prague Spring reforms Opposition to Communism increase, USSR invades and arrests Dubcek reversing reforms</p> <p>Outcomes: Brezhnev Doctrine, Other communist countries condemned USSR, US condemnation but no intervention</p> |
| <p>WHAT WAS THE COLD WAR? 4</p> <p>Deterrence: A period of improved relations between US and USSR Linkage: Nixon's plan to 'link' benefits to positive Soviet actions Bilateral: Agreements that involve cooperation between two parties SALT I: A plan to limit production of new nuclear weapons ABM: Anti-Ballistic Missiles - reduced by the SALT Treaty MIRV: Weapons that contained several targetable warheads Disarmament: Reducing or completely destroying supplies of weapons Apollo-Soyuz: A US-Soviet meeting in space to show their cooperation Helsinki Agreements: Agreements over issues like security and human rights Human Rights: Basic freedoms that are not respected in some countries Mujahideen: An Afghan resistance force that was armed by the US Jihad: A Muslim 'holy war' that was declared against the USSR Fundamentalism: An extreme and dangerous version of a religion Embassy: A building that represents one country's people in another.</p> | <p>CRISES IN BERLIN</p> <p>Carter Doctrine: A US vow to go to war if their interests in Middle East threatened</p> <p>Boycott: A refusal to use certain services or to attend an event</p> <p>Second Cold War: Reagan's escalation of the Cold War after the failure of detente</p> <p>NUTS: Targeting nuclear weapons at USSR warheads, not cities</p> <p>START: Talks focused on reducing total nuclear weapons on both sides</p> <p>SDI-Star Wars: High tech laser guided missile protection system</p> <p>New Thinking: A series of reforms proposed by Gorbachev to modernise USSR</p> <p>Perestroika: Restructuring - economic changes to the USSR and communism</p> <p>Glasnost: 'Openness' - greater freedoms within the USSR and E Europe</p> <p>Disidents: Political opponents to a regime that often experience persecution</p> <p>Uskoreniye: Acceleration - a Soviet plan to boost and modernise the economy</p> <p>INF Treaty: First successful agreement to reduce nuclear weapons</p> <p>Sinatra Doctrine: Nickname of plan for E European countries to do things 'their way'</p> <p>Reunification: Germany being reunited into a single country after being divided</p> | <p>THE END OF THE COLD WAR</p> <p>EAST GERMANY</p> <p>Oct-Nov 1989: Millions protest on the streets of major cities</p> <p>Nov 1989: Berlin Wall is opened</p> <p>Oct 1990: German reunification</p> <p>POLAND</p> <p>1988: Mass strikes across country</p> <p>1989: Solidarity party wins elections and first non-Communist leader in E Europe is elected.</p> <p>HUNGARY</p> <p>1989: Becomes multi-party state</p> <p>1989: Border opens with democratic Austria</p> <p>1990: Anti-Communist alliance wins elections</p> <p>CZECHOSLOVAKIA</p> <p>Nov 1989: Mass protests against Communism lead to resignation of government</p> <p>Dec 1989: Non-communist president appointed</p> <p>1990: Elections won by non-Communist alliance</p> <p>ROMANIA</p> <p>25 Dec 1989: Communist dictator Ceausescu executed</p> <p>1990: Democratic elections held, won by party dominated by ex-communists</p> <p>BULGARIA</p> <p>1990: Democratic elections held, won by renamed Communist Party</p> |
| <p>Week 8</p> | <p>Week 9</p> | <p>Week 10</p> |



Your history homework for this cycle will appear on www.educake.co.uk

You will receive your login details before your first homework is set.

The first time you login, your username and password will be the same. It will then ask you to change it.

You should then write your username and password below:

Username: _____

Password: _____

Our expectations - You **must** achieve over 50% for your homework to be considered completed. If you get under this, you will be given the option to redo it on the website to achieve over 50% (by the deadline). It is therefore important you give yourself plenty of time to complete the assignment.

Leader boards for all of Year 10 will be made each week and displayed in the Humanities' corridor.

You can keep track of how you and your class are doing in terms of overall score and most improved each week.

Year 10 Educake League

Week 10

Top 10 overall leaders (overall average)

| | |
|----|----------------------|
| 1 | Katie Forrest-Hazell |
| 2 | Emma Sellings |
| 3 | Thea Mackney |
| 4 | Neve Thompson |
| 5 | Annabel Easterfield |
| 6 | Nate Hinchcliffe |
| 7 | Aidan Bowen |
| 8 | William Wright |
| 9 | Ellie Pokua |
| 10 | Elyssa Forbes |

Top 10 improvers this week

| | |
|----|------------------|
| 1 | Zack Taylor |
| 2 | Callum Woodward |
| 3 | William Wright |
| 4 | Selahattin Yen |
| 5 | Charlotte Garner |
| 6 | Cate Stacey |
| 7 | Erin Hooper |
| 8 | David Bosze |
| 9 | Issy Coode |
| 10 | Daniel Thomson |

Your homework will be due the morning after your scheduled slot on your homework timetable



Photographer Research Guide AO1

Who is your chosen Artist, Photographer or Film maker?

Provide a brief biography...

What is their best-known work? Do they belong to a particular 'genre' or 'movement' of Art or Photography - i.e. Documentary, Street or Surrealism?

Sentence starters:

Vivian Maier was considered to be...

Robert Frank is thought to be...

The artwork, photograph, design

What is the title of the film, artwork or photograph you are looking at?

Why has the photographer chosen that title? What clues does it give you about the work?

When was it made or taken?

The piece of work is titled...from the title I think the artist was...

The title of the work suggest...

What I first noticed about this piece of work...

Warhol's work is considered to be the pinnacle of Pop Art due to...

Analysis of artworks or photographs

Form - what has been printed, painted or photographed? (Portrait, buildings? etc) Please describe in detail. Is there any experimentation with the focus/lighting/painting/composition?

I can see...

In the photograph...

The light that has been used...

Process - How has it been made? What materials, techniques or equipment have been used? What size or scale is it? How was it presented in gallery or space?

I think the artist has used...

The photographer has used...

The photograph is large in scale to suggest...

The art is.....in scale because...

Context - what is the key themes in the artwork? What do you think the artist's intentions were? What does it remind you of? Is the mood of the work aggressive/tense/angry/happy/laid back/imposing/theatrical etc? What links can you make to other artists, photographers or culture?

I think the artist has used...

The art is.....in scale because...

I think the main theme or idea behind this piece is...

I can see how this work links to... I think this because...

The artwork reminds me of...

I think the possible meaning behind the work is...

The mood of the artwork...

I think that the piece of work was created in response to....I think this because...

Your opinions...

What appeals to you about the image or artwork and the artist? How does it make you feel? What has it inspired you to do? What materials or techniques would you like to apply to your own art?

I think that the artist was trying to say...

The main theme/idea behind this piece is...

My eyes are drawn to... I believe the artist has achieved this by...

If I were inside this artwork I would be feeling/thinking...

I like the idea of using this technique to make...

I am going to use this artwork to inspire my own ideas and artwork by...

Maths - Sparx

Sparx for every year group is set at **1400 on Monday**.

Hand in (100% compulsory **AND TARGET**) is **0730 the following Monday morning**, for every year group.

All students must have completed a minimum of 50% compulsory **AND TARGET** by **0730 Thursday morning** or they will receive a compulsory invitation to Sparx catch up with maths staff. This is held on a **after school on Thursday 1500-1600 and students may leave when they are up to date**.

All students are expected to complete 100% of their compulsory **AND TARGET** homework. General support sessions are held on various evenings (depending on year group) in the library. Sparx only support sessions are held at **B+L on Friday** or Thursday after school on the maths corridor. Students can receive any additional Sparx support from their maths teacher during their own free time (when your teacher is unavailable other maths teachers can help).

Detentions for non 100% compulsory **AND TARGET** completion, are held **Monday's after school for 1hr**.

Incomplete or inadequate bookwork will also result in detentions.

It is expected that ALL outstanding Sparx HW will be completed to support you when you have been off and to keep you up to speed with the class and scheme of learning.

Staff: Sparx Coordinator: Miss Sadler (AJS)

Weekly Communication plan:

| Action | When | By Whom |
|--|-------------------------------------|-------------------------|
| Homework set for all year groups | 1400 Monday | Sparx |
| 50% compulsory AND TARGET completed or compulsory Sparx catch up issued | 0730 Thursday | Class teacher |
| Previous weeks Sparx statistics announced in whole school briefing | Monday whole school briefing | AJS |
| Homework due in, any incomplete work results in a detention. Parents are contacted by admin team and notified about detention. | 0730 Monday | Maths team / admin team |
| Incomplete lists are shared with tutors and HoY. | Monday | AJS |
| Non completion detention runs after school. Failure to attend results in a Reset on Tuesday. | 1500 Monday | PSW team |

Year 1 | BTEC Music Cycle Two

| | |
|-----|---|
| WK1 | <p>GENRE/PERIOD</p> <p>JS Bach - Baroque period. Beethoven - Classical period (some romantic features - emotional outbursts, extreme dynamics and adventurous choice of key, unusual structure). Purcell - Baroque period, incidental music to the play Oedipus by John Dryden. Queen - Glam Rock. Schwartz - Musical Theatre. Williams - Film Music. ACSS - Fusion (African, Celtic and EDM). Spalding - Fusion, Bossa Nova (Jazz and Samba).</p> <p>STRUCTURE AND INSTRUMENTATION</p> <p>JS Bach - Structure - (ternary fugue) A, B, A, Concerto grosso - piece for multiple soloists (concertino) and accompanying ensemble/orchestra (ripieno). Beethoven - Solo Piano, Structure - sonata form - exposition, development and recapitulation, has an introduction, bridge/transition section, codetta (small ending), coda. Purcell - Soprano, Harpsichord and Bass Viol, Structure - A, B, A1. Queen - Vocalist, Electric Guitar, Electric Bass, Drums, Effects - Phase shifter/phaser, overdubbing, reverb, distortion, wah-wah, panning. Structure - Intro, V1, C1, Instrumental, V2, C2, Guitar solos, V3, C3, Outro.</p> |
| WK2 | <p>STRUCTURE AND INSTRUMENTATION</p> <p>Schwartz - large orchestra, 2 vocalists on stage, 3 synths/keyboards to bulk sound, brass, woodwind and string sections, drum kit, Structure - Intro, V1, Chorus, V2, Chorus, Bridge, Chorus, Varied Intro, V3, Chorus, Coda. Williams - Full orchestra (big budget film), Structure - Intro (fanfare), A, B, A1 (extended A section with link fanfare at 29, piccolo solo at 36 and full orchestra finish. ACSS - Fusion of African - kora, djembe, talking drum and maninka language. Celtic - uilleann pipes, fiddle, accordion, low whistle, bodhran, hurdy-gurdy, Electronic Dance Music - loops, effects, samples, electric piano, drum machine, Structure - Intro, V1, V2, V3, Outro. Spalding - Vocalist, Acoustic Guitar, Acoustic Bass Guitar, Structure - Intro, A, A1, B, B1, guitar solo, repeats, coda.</p> |
| WK3 | <p>TONALITY AND HARMONY</p> <p>JS Bach - Basso continuo/figured bass - repeated bassline with chords/accompaniment added on top by the harpsichord, Tonality - A section is D major with modulation to A major (tonic - dominant), B section is B minor (relative minor) with modulation to its dominant F# minor. Beethoven - Tonality - C minor intro, expo - 1st subject C minor; 2nd subject Eb minor (changes to Eb major), dev - E minor, recap - 1st subject C minor; 2nd subject F minor; Harmony - use of diminished 7ths and augmented 6ths. Purcell - Ground bass - repeated throughout, Tonality - A minor; modulates to E minor at the end of A section, section B has other modulations including C major which is relative major to A minor. Queen - Tonality - Eb major; verses start in C minor; choruses are in Bb major; Harmony - root position triads, tonic pedal on C at start of each verse, parallel harmonies in backing vocals, descending chromatic scale in bass, guitar and piano bars 7-9, circle of 5ths (V-I, dominant-tonic) bars 20-21.</p> |
| WK4 | <p>TONALITY AND HARMONY</p> <p>Schwartz - Tonality - D major; bars 88-100 in G major; Harmony - bitonal at 88 to show ambiguity, augmented 5ths, circle of 5ths at bar 69-70, plagal cadence at bars 134-135, interrupted cadence at bars 167-168. Williams - Tonality - Bb major; Harmony - quartal harmony (chords built on 4ths), bitonal at the end with Ab minor and pedal on C, dominant pedal in bars 1-6, cluster chords at the end are really dissonant. ACSS - Tonality - modal Aeolian and Dorian modes used (b natural means it can't be C minor but feels like it), C drones throughout. Spalding - Tonality - B minor; Harmony of 7ths, 9ths, 11ths, and 13ths, rarely in root position, chromatic movement of chords.</p> |
| WK5 | <p>TEXTURE</p> <p>JS Bach - monophonic in bars 1-2, polyphonic/contrapuntal elsewhere, stretto (overlapping subjects). Beethoven - homophonic (melody dominated homophony), 'murky bass' left hand 1st subject, broken chords left hand in second half of 2nd subject. Purcell - homophonic (melody dominated homophony). Queen - homophonic (melody dominated homophony). Schwartz - homophonic, polyphonic at the end. Williams - homophonic. ACSS - homophonic. Spalding - Texture - monophonic in bars 1-3, mostly homophonic (melody dominated homophony), some contrapuntal texture at bars 88-103.</p> |
| WK6 | <p>MELODY</p> <p>JS Bach - subject (bar 1-2 violin), answer (flute bars 3-4), countersubject (violin bars 3-4), ornamentation includes trills and appoggiaturas, mainly scalar/stepwise/conjunct movement. Beethoven - sequences, chromatic movement, ornamentation includes trills, mordents and acciaccaturas. Purcell - ornamentation used but not notated, 'word painting' emphasizing the meaning of words or phrases, syllabic and melismatic, Onomatopoeia - drop sound to notes that also sound like they're dropping. Queen - conjunct/stepwise and disjunct/leaping used in the vocal melody, sequences, slide/gliss/portamento in the main vocal of lyric 'queen', mainly syllabic with some melismas, vocables/nonsense syllables for backing 'oohs and aahs'</p> |
| WK7 | <p>MELODY</p> <p>Schwartz - Recitative (spoken words) are in free time, colla voce (follow the singer), lots of syncopation, intervals of 4ths and 5th in vocal line help a sense of assurance and confidence in the music, Accompaniment - distortion in guitar at bar 11, 40 and 45, low brass chords at bars 20-23, string tremolo at bars 34-36, drum fills to emphasise section changes, cymbal roll on key change, tutti for big finish, synth and glockenspiel play high pitched ostinato to show flying high at bars 152-160, leitmotifs throughout, unlimited theme (somewhere over the rainbow notes). Williams - 4ths and 7ths are prevalent in the melodic line, in both brass and string melodies. ACSS - pentatonic scales, Aeolian and Dorian modes used, mainly syllabic, mainly stepwise/conjunct movement. Spalding - descending sequence in A sections, leaps of 3rds and 7ths in A sections, syllabic, mostly conjunct/stepwise movement in B sections, improvised melody in solo guitar section.</p> |
| WK8 | <p>TEMPO, RHYTHM AND DYNAMICS</p> <p>JS Bach - Tempo - allegro (fast), time signature 2/4 (triplet quavers makes it feel like 6/8, dance, gigue feel), dotted rhythms, Dynamics - terraced (no dynamics, just gets louder and quieter with more or less instruments). Beethoven - Tempo - intro is grave which means very slow, main sections are allegro molto e con brio which means very fast with vigour; Rhythm - dotted rhythms and some very short notes, some syncopation, repetitive quavers, Dynamics - large dynamic range from pp to ff, spf used as well meaning forced. Purcell - Tempo - no marking for this but slow helps to set the mood, 4/4 time signature, Dynamics - no marking as with the period of Baroque. Queen - Tempo - moderately fast, 12/8 time signature, Rhythm - 12/8 gives a swing feel, lots of syncopation.</p> |
| WK9 | <p>TEMPO, RHYTHM AND DYNAMICS</p> <p>Schwartz - Tempo - is free in spoken parts and verse 1, is quick in verse 2 and the choruses but drops for the bridge at bar 88, Rhythm - syncopation, time signatures of 2/2, 3/2, 4/4 and bar 88 back to 2/2 to finish. Williams - Rhythm - 4/4 time signature, triplets enhance the march/fanfare-like military mood. ACSS - Tempo - free time at the start, 4/4 time signature from 48secs at moderately fast tempo, slightly swung rhythms, syncopation, loops/ostinatos. Spalding - Tempo - rubato (free to push and pull the time) at the start, bossa nova groove at bar 19.</p> |

| Year 11 Performing Arts - Dance Cycle Two | | | |
|--|---|---|---|
| Week 1 | Week 3 and 4 | Week 5 | Week 6 |
| <p>Target audience: Target audience refers to who the performance was created for. Everything that is featured in the production is appropriate for the specific target audience.</p> <ul style="list-style-type: none"> » Age » Interests » Groups <p>Purpose of piece/creative intentions This relates to WHY the piece was created for the target audience</p> <ul style="list-style-type: none"> » To educate » To entertain » To provoke/challenge viewpoints » To celebrate | <p>Draw and explain each stage configuration</p> <p>Stage configurations: End on/Proscenium arch Audience all see the performance from one viewpoint. The arch frames the stage and is normally raised in front of the audience</p> <p>Thrust staging Audience is sat on 3 sides of the stage. The audience can go onto the stage.</p> <p>In the round Audience is sat on all sides. Performance space is in the middle, entrances and exits through the audience</p> <p>Traverse Audience is on either side of the stage. It is a long and thin rectangular stage. The audience is parallel and facing one another</p> <p>Promenade/Site specific: The performance has freedom to be set anywhere; the actors can encourage the audience to follow them to several different locations during the show</p> <p>Write down the pros and cons of each stage configurations (what is good about it and what is challenging)</p> | <p>Resources</p> <ul style="list-style-type: none"> » Props » Resources » Costume/masks/make-up/hair » Performance space » Schedule » Locations » Performance elements | <p>Types of stimulus - Find an example of each</p> <ul style="list-style-type: none"> » Themes » Issues » Existing repertoire » Props » Time and place » A painting » Song/poem/literature |
| <p>Week 2</p> <p>Describe these styles of dance The style and genre of the piece are very important - it must be well thought about and relate to the target audience</p> <ul style="list-style-type: none"> » Ballet » Contemporary » Hip Hop/Street » Chance Dance » Fosse » Commercial » Tap » Ballroom | <p>Week 7</p> <p>Practitioners who may influence. Research 2 key facts about each one and their style</p> <ul style="list-style-type: none"> » Matthew Bourne » Merce Cunningham » Splendid » Bob Fosse » Akram Khan » Christopher Bruce | <p>Week 8</p> <p>Explain why you need each one - Sustaining performance</p> <ul style="list-style-type: none"> » Be focused » Be prepared » Be adaptable » Be confident » Be impressive » Enjoy the performance | <p>Week 9 and 10</p> <p>Areas to consider when planning improvements: What does each one mean?</p> <ul style="list-style-type: none"> » Shaping of material » Response to feedback » Design skills » Participation within the group » Use of performance space » Communication of ideas to the audience |

| Year 1 Performing Arts - Drama Cycle Two | | | |
|--|--|--|---|
| Week 1 | Week 3 and 4 | Week 5 | Week 6 |
| <p>Target audience: Target audience refers to who the performance was created for. Everything that is featured in the production is appropriate for the specific target audience.</p> <ul style="list-style-type: none"> » Age » Interests » Groups <p>Purpose of piece/creative intentions This relates to WHY the piece was created for the target audience</p> <ul style="list-style-type: none"> » To educate » To entertain » To provoke/challenge viewpoints » To celebrate | <p>Draw and explain each stage configuration</p> <p>Stage configurations:</p> <p>End on/Proscenium arch Audience all see the performance from one viewpoint. The arch frames the stage and is normally raised in front of the audience</p> <p>Thrust staging Audience is on 3 sides of the stage. The audience can go onto the stage.</p> <p>In the round Audience is sat on all sides. Performance space is in the middle, entrances and exits through the audience</p> <p>Traverse Audience is on either side of the stage. It is a long and thin rectangular stage. The audience is parallel and facing one another</p> <p>Promenade/Site specific: The performance has freedom to be set anywhere; the actors can encourage the audience to follow them to several different locations during the show</p> <p>Write down the pros and cons of each stage configurations (what is good about it and what is challenging)</p> | <p>Resources</p> <ul style="list-style-type: none"> » Props » Resources » Costume/masks/make-up/hair » Performance space » Schedule » Locations » Performance elements | <p>Types of stimulus - Find an example of each</p> <ul style="list-style-type: none"> » Themes » Issues » Existing repertoire » Props » Time and place » A painting » Song/poem/literature |
| Week 2 | Week 7 | Week 8 | Week 9 and 10 |
| <p>Describe these styles of Theatre The style and genre of the piece are very important - it must be well thought about and relate to the target audience</p> <ul style="list-style-type: none"> » Epic Theatre » Physical theatre » Verbatim » Naturalism » Theatre in Education | <p>Practitioners who may influence. Research 2 key facts about each one and their style</p> <ul style="list-style-type: none"> » Mark Wheeler » John Godber » Bertolt Brecht » Frantic Assembly » Splendid | <p>Explain why you need each one - Sustaining performance</p> <ul style="list-style-type: none"> » Be focused » Be prepared » Be adaptable » Be confident » Be impressive » Enjoy the performance | <p>Areas to consider when planning improvements: What does each one mean?</p> <ul style="list-style-type: none"> » Shaping of material » Response to feedback » Design skills » Participation within the group » Use of performance space » Communication of ideas to the audience |

Year 11 Psychology Cycle Two - The Brain and Neuropsychology

| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
|---|---|--|--|--|
| <p>THE NERVOUS SYSTEM</p> <ul style="list-style-type: none"> » CNS: the central nervous system, which consists of the brain and spinal cord. » PNS: the peripheral nervous system, which is the network of nerve fibres connecting the various parts of the body with the central nervous system. It is made up of the SNS and the ANS. » ANS: the autonomic nervous system, which is a network of unmyelinated nerve fibres running through the body and connecting the senses and internal organs with the central nervous system. » SNS: the somatic nervous system, which is the network of myelinated sensory and motor neurons that carry sensory information to, and instructions for movement from, the central nervous system. » Fight or flight response: an automatic reaction to threat, stimulated by the ANS and maintained by the endocrine system, which activates the body's reserves of energy to prepare it for action. | <ul style="list-style-type: none"> » Sensory information: information which is picked up by the sense organs of the body and passed on to the central nervous system. » Stimulus: something that is detected by the sense receptors, which the nervous system reacts to. » Emotion: the moods or feelings that a person experiences. <p style="text-align: center;">NEURONES</p> <ul style="list-style-type: none"> » Neurone: a specialised nerve cell which generates and transmits an electrical impulse. » Sensory neuron: a nerve cell that picks up information from sense receptors and carries it to the CNS. » Relay neuron: a nerve cell that passes messages within the CNS. » Motor neuron: a nerve cell that takes messages from the CNS to muscles to cause them to move. » Neurological damage: injury or harm to the nervous system, which affects how neurons work. » Stroke: a sudden interruption to the blood supply in a part of the brain. | <p>SYNAPTIC TRANSMISSION</p> <ul style="list-style-type: none"> » Excitation: when a neurotransmitter binds with a receptor on the next neuron, and increases the chance that the next neuron will fire an electrical impulse. » Inhibition: when a neurotransmitter binds with a receptor on the next neuron, and decreases the chance that the next neuron will fire an electrical impulse. » Neuronal growth: when a neuron repeatedly excites another neuron, leading to a change (or process of growth) in one or both of the neurons. » Synapse: the small gap between the dendrite of one neuron and the receptor site of the next one. » Neurotransmitter: a chemical which is released into the synapse by one neuron, and picked up by the next neuron. » Synaptic transmission: the process by which messages are passed from one neuron to another by sending neurotransmitters across the synaptic gap so they can bind with receptors on the next neuron. » Reuptake: a process by which neurotransmitter is reabsorbed into the synaptic knob after it has been used during synaptic transmission. | <p>STRUCTURES OF THE BRAIN</p> <ul style="list-style-type: none"> » Cerebellum: a small, wrinkled structure at the back of the brain which coordinates motor movement, dexterity, and balance, among other things. » Cerebrum: the largest part of the brain in humans, which consists of two large cerebral hemispheres. » Cerebral cortex: the folded outer layers of the cerebrum. » Lobes of the brain: each half of the brain is divided into four areas or lobes: the frontal lobe, the temporal lobe, the parietal lobe and the occipital lobe. » Frontal lobe: the area of the brain that controls cognitive processes such as thought and memory. » Occipital lobe: the area of the brain where visual information is processed. » Parietal lobe: the area of the brain that is responsible for integrating information from other areas to form complex behaviours. » Temporal lobe: the area of the brain that is responsible for aspects such as the comprehension and production of spoken language. | <p>LOCALISATION OF FUNCTION IN THE BRAIN:</p> <ul style="list-style-type: none"> » Localised function: a function such as language or vision, which is found in a particular area on the cerebral cortex. » Motor area: the area of the cerebral cortex concerned with movement. » Somatosensory area: the area of the cerebral cortex concerned with sensory feeling. » Angular gyrus: an area on the parietal lobe which deals with reading. » Visual cortex: the area of the cerebral cortex concerned with vision. » Auditory cortex: the area of the cerebral cortex concerned with hearing. » Broca's area: an area on the frontal lobe which deals with speech production. » Wernicke's area: an area on the temporal lobe which deals with understanding speech. » Cognitive neuroscience: the study of how cognitive processes connect with brain activity and structure. <p>BRAIN SCANS</p> <ul style="list-style-type: none"> » CT scan: Computerised Tomography, which scans the brain by building up a 3D image from a series of X-ray slices. » fMRI scan: functional Magnetic Resonance Imaging, which scans the brain by identifying the magnetic activity of water molecules in active brain cells. » PET scan: Positron Emission Tomography, which locates blood flow in the brain by detecting radioactive tracers. |

Year 11 Psychology Cycle Two - Psychological Problems

| Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
|---|---|--|--|--|
| <ul style="list-style-type: none"> » Mental health: a person's emotional and psychological wellbeing; this allows them to cope with the normal stresses of everyday life and to function in society » Mental health problems: diagnosable conditions in which a person's thoughts, feelings, and behaviours change and they are less able to cope and function. | <ul style="list-style-type: none"> » HOLISM VS REDUCTIONISM » Holistic: the view that the parts of something are all connected and understandable only by studying things as a whole. » Reductionist: understanding complex things like human behaviour by simplifying it to its most fundamental and basic parts. <p>NATURE VS NURTURE</p> <ul style="list-style-type: none"> » Nurture: the idea that our characteristics and behaviour are influenced by our environment » Nature: the idea that our characteristics and behaviour are inherited. <p>DEPRESSION</p> <ul style="list-style-type: none"> » Bipolar depression: a mood disorder that causes an individual's mood, energy, and activity levels to change from one extreme to another. » Sadness: a normal emotional response to an unpleasant, painful, or unhappy situation or experience. » Unipolar depression: a mood disorder that causes an individual to feel constantly sad, to lose interest and enjoyment, and to have reduced energy and activity levels. | <p>BIOLOGICAL EXPLANATION (INFLUENCE OF NATURE) FOR DEPRESSION</p> <ul style="list-style-type: none"> » Neurotransmitter: a chemical which is released into the synapse by one neuron, and picked up by the next neuron. » Low levels of serotonin and/or norepinephrine have been linked to depression. <p>PSYCHOLOGICAL EXPLANATIONS (INFLUENCE OF NURTURE) FOR DEPRESSION</p> <ul style="list-style-type: none"> » Attributions: the ways people explain situations and behaviour. » Negative schemas: a biased cognitive model of people, objects or situations based on previous information and experience that directs us to perceive, organise or understand new information by focusing on what is bad. <p>TREATMENT FOR DEPRESSION</p> <ul style="list-style-type: none"> » Antidepressants: a type of medication used to treat depression. » Cognitive behaviour therapy (CBT): a talking therapy that can help you manage your problems and emotions by changing the way you think and behave. | <p>ADDICTION</p> <ul style="list-style-type: none"> » Addiction: repeated use of a substance resulting in an individual becoming entirely focused on the substance, which they need to have regularly in order to avoid withdrawal symptoms. » Dependence: repeated use of a substance results in an individual's brain and body only functioning normally when the substance is present; when the substance is not present, withdrawal symptoms occur. » Substance abuse: using a substance in a way that is harmful or dangerous, often because of a consistent pattern of use. » Substance misuse: using a substance for purposes, or in amounts, that may be harmful and that is different to the recommended pattern of use. | <p>BIOLOGICAL EXPLANATION (INFLUENCE OF NATURE) FOR ADDICTION</p> <ul style="list-style-type: none"> » Hereditary: being transferred from parent to child through their genes. » Genetic vulnerability: a biological susceptibility towards developing certain conditions or disorders when other influencing elements are also present. <p>PSYCHOLOGICAL EXPLANATION (INFLUENCE OF NURTURE) FOR ADDICTION</p> <ul style="list-style-type: none"> » Peer: someone who is from the same social group, or who is the same age or social status, or has the same background, abilities or qualifications, as someone else. » Peer influence: the direct or indirect influence/pressure from your peers. <p>TREATMENT FOR ADDICTION</p> <ul style="list-style-type: none"> » Aversion therapy: a treatment to help individuals stop unwanted behaviours such as substance addiction; the individual experiences some form of unpleasantness when carrying out the unwanted behaviour. » Self-management programmes: an intervention designed to support and empower individuals so that they can take responsibility for their own choices and behaviour. |

Year 11 Biology Cycle Two

Key Vocabulary

- Active transport:** is the movement of substances against the concentration gradient (from low to high concentration). It requires a membrane and energy
- Aseptic technique:** techniques used to keep out unwanted microorganisms when growing microorganism cultures
- Control test:** is used as a standard of comparison for checking the results, an experiment that omits the independent variable
- Control variable:** what you keep the same each time you carry out an experiment
- Dependent variable:** what you record in your results table in your experiment
- Diffusion:** the movement of particles from an area of high concentration to low concentration. It is a passive process
- Filtrate:** a liquid which has passed through a filter
- Independent variable:** what you change each time you do an experiment
- Insoluble:** substances that cannot dissolve
- Magnification:** the number of times larger an image is than the initial object that it produced
- Osmosis:** the movement of water molecules from an area of high concentration to low concentration across a partially permeable membrane. It is a passive process
- Precipitate:** a substance that is deposited in solid form from a solution
- Resolution (microscopes):** the smallest distance between two points that can still be seen as two points and not blurred

Week 1

- Each paper is worth **50%** of your grade.
Paper 1 - **105 minutes:**
- Topic 1: key concepts
 - Topic 2: cells and control
 - Topic 3: genetics
 - Topic 4: natural selection and genetic modification
 - Topic 5: health, disease and the development of medicines
- Paper 2 - **105 minutes:**
- Topic 1: key concepts
 - Topic 6: plant structures and their functions
 - Topic 7: animal co-ordination, control and homeostasis
 - Topic 8: exchange and transport in animals
 - Topic 9: ecosystems and material cycles

Week 3

- Key concepts:
- Enzymes** are **biological catalysts** which **speed up** the rate of reaction without being used up.
 - protease** breaks **proteins** into **amino acids**
 - amylase** breaks **starch** into **sugars**
 - lipase** breaks **lipids** into **fatty acids and glycerol**
 - Enzymes can be affected by three conditions:**
 - temperatures:** low temperatures do not provide enough **activation energy** for reactions to occur; high temperatures **denature** enzymes
 - pH:** must be suitable for where enzyme is used to working in the body or it will **denature**
 - substrate concentration:** an increase in substrate concentration will increase ROR until a point when rate plateaus

Week 2

- Calculations in paper 1:
- Eye piece lens x objective lens = **overall magnification**
 - Image size ÷ actual size = **magnification**
 - $\frac{((\text{final mass} - \text{initial mass}) \div \text{initial mass}) \times 100}{\text{in mass}}$ = **percentage change**
 - Amount broken down (g) ÷ time taken (min) = **rate of reaction (g/min)**
 - Mass (kg) ÷ height²(m) = **Body mass index**
 - Hip (mm) ÷ waist (mm) = **hip: waist ratio**
 - πr^2 = **cross sectional area of a circle**

Week 4

- Key concepts:
- There are various ways in which substances can move:**
 - diffusion** is the movement of particles from an area of **high concentration to low concentration**. It is a **passive** process
 - osmosis** is the movement of **water** molecules from an area of **high concentration to low concentration** across a **partially permeable** membrane. It is a **passive** process
 - active transport** is the movement of substances against the concentration gradient (from low to **high concentration**). It requires a **membrane** and **energy**
 - Three factors affect the rate of diffusion:**
 - surface area**
 - diffusion distance**
 - thickness of membrane**

| Week 5 | Week 6 | Week 7 |
|---|---|--|
| <p>Magnification core practical:</p> <ol style="list-style-type: none"> Light microscopes magnify images up to x1500 and have a low resolution of 200nm. Electron microscopes use beams of electrons to magnify images up to x2,000,000 and have a high resolution of 0.2nm. To use a microscope: <ol style="list-style-type: none"> a stain is applied to the specimen so organelles are visible the thin layer of specimen is laid on a glass slide with a cover slip to protect it the microscope should be set to the lowest magnification the stage of the microscope is lowered and the slide clipped in the focussing wheel is used to increase clarity of the image the magnification is then increased using the objective lens | <p>Testing foods core practical:</p> <ol style="list-style-type: none"> Starch is tested for using iodine. A positive result would turn iodine from yellow-brown to blue-black. Protein is tested for in the biuret test. This combined potassium hydroxide and copper sulfate to a food sample. A pale blue solution will turn purple in the presence of protein. Reducing sugars are tested for using Benedict's solution. The solution starts a pale blue colour; the more red the solution becomes, the more sugar the sample contains. Lipids are tested for in the ethanol emulsion test whereby the sample is mixed with ethanol and shaken. Lipids will float to the surface forming a cloudy emulsion. | <p>pH and enzymes core practical:</p> <ol style="list-style-type: none"> The aim is to investigate the effect of pH on amylase activity. The independent variable is the pH of the solution. The dependent variable is the rate of amylase activity measure by iodine. A yellow/brown colour will indicate that amylase has broken down all of the starch. The control variables are: <ol style="list-style-type: none"> temperature: this can be controlled using a water bath, not to be over 37°C to denature the enzyme volume of pH buffer solution, amylase and starch solution. Use a syringe for accuracy. We would expect amylase to work best at around pH 6-7 as this is the pH it works at in the body. Over/under this it would denature. |
| <p>Osmosis in potato slices core practical:</p> <ol style="list-style-type: none"> The independent variable is the concentration of sucrose solution. The dependent variable is the % change in mass of the potatoes. The control variables are: <ol style="list-style-type: none"> the surface area of the potato as this can affect the rate of osmosis the volume of solution the potato is placed in and can be measured using a measuring cylinder on a flat surface % change in mass is calculated by = (final mass-initial mass)÷ initial mass) x 100 We would expect the potato in distilled water to gain mass due to osmosis. We would expect the potato in high sucrose concentration to lose mass due to osmosis. | <p>Antibiotics core practical:</p> <ol style="list-style-type: none"> The aim is to investigate the effects of antibiotics on microbial cultures. The independent variable was the concentration of antibiotic discs. The dependent variable was the cross-sectional area of the clear space around the antibiotic disc to measure the effectiveness of the antibiotic. We formed a control test by using a disc without any antibiotic soaked in. Aseptic technique is used in this procedure, this can be done by: <ol style="list-style-type: none"> flaming use of an autoclave: This is a heated container which uses high pressure and temperatures to sterilise equipment. | <p>Week 10</p> <p>Extracting DNA practical:</p> <ol style="list-style-type: none"> DNA testing can be carried out in the food industry to identify which organisms have been used to make a food product. To extract DNA we: <ol style="list-style-type: none"> mash up fruit in a pestle and mortar add the fruit to detergent to breakdown the cell surface membrane and the nuclear membrane of cells, this was then combined with salt and water heat up the solution containing the fruit in a water bath filter the mixture to remove insoluble parts add ice-cold ethanol to the filtrate to precipitate out the DNA |

Year 11 Chemistry Cycle Two

Key Vocabulary

- Allotrope:** a different structural form of an element
- Anion:** negatively charged ion, one that has gained electron/s
- Anode:** positively charged electrode
- Burette:** measures volumes accurately with a fine scale to the nearest $\pm 0.05\text{cm}^3$
- Cathode:** negatively charged electrode, cations collect here. Reduction occurs here.
- Cation:** positively charged ion, one that has lost electron/s
- Concordant:** values that agree with each other; repeat volumes that are within 0.1cm^3
- Electrode:** a rod made of a metal or graphite that carries the current into or out of the electrolyte
- Electrolysis:** a process in which electrical energy form a direct current supply decomposes electrolytes
- Electrolytes:** ionic compounds in a molten state or dissolved in water
- Filtrate:** a solution that is passed through a filter
- Neutralisation:** a reaction in which an acid reacts with a base to produce a salt and water only

Week 1

- Paper 1: Chemistry 1 topics 1-5:
 - key concepts in chemistry
 - states of matter and mixtures
 - chemical changes
 - extracting metals and equilibria
- Paper 2: Chemistry 2, topic 1 + topics 6-8
 - key concepts in chemistry
 - groups in the periodic table
 - rates of reaction and energy changes
 - fuels and Earth science
- Each paper makes up 16.67% of your final grade, the paper is 1 hour 45 minutes.
- Core practicals in this paper 1:
 - investigating inks
 - preparing copper sulfate
 - investigating neutralisation
 - electrolysis of copper sulfate
 - acid-alkali titration

Week 3

- Investigating inks - paper chromatography:**
 - the **line** on the **chromatogram** is drawn in **pencil** as it is insoluble and therefore **won't travel** up the paper
 - the **depth** of the **solvent** needs to be **below** the **ink spot** to **prevent it spreading** into the **solvent**
 - measure the distance travelled by the spot and the **distance travelled** by the solvent so the **Rf value** can be calculated
- Investigating inks - simple distillation:**
 - distillation is evaporation followed by condensation
 - ice is often placed around the boiling tube to **increase the rate of condensation**
 - simple distillation is **inefficient** as lots of **energy** is **lost**

Week 2

- Equations and maths in paper 1:
 - $R_p = \text{Distance moved by spot} \div \text{distance moved by solvent}$
 - number of moles (mol) = mass (g) \div molar mass
 - concentration (g/dm³) = concentration (mol/dm³) \times molar mass
 - concentration (g/mol) = mass (g) \div volume (dm³)
 - conservation of mass** states that the **mass** of the **reactants** and the **mass** of the products will always be **equal**.
 - atom economy = mass of desired product \div mass of total products
 - percentage yield = (actual yield \div predicted yield) \times 100

Week 4

- Preparing copper sulfate** - this method can be used to make any soluble salt.
- This is a **neutralisation** reaction.
- Wear goggles to prevent chemicals** getting into your **eyes**.
- Heat the acid to speed up the rate** at which **the soluble solid reactant dissolves**.
- Remove excess solid** to leave the **residue** in the filter paper.
- Place the **filtrate** into an **evaporating basin** that is placed over a beaker half full of water that is being heated by a Bunsen to prevent the **evaporation** of the salt from the water occurring too quickly which causes spitting.
- When the **salt solution** is heated it may start to **spit** - when this occurs remove it from the heat to allow it to **evaporate naturally**

| Week 5 | Week 6 | Week 7 | | | | | | | | | | | | | | | | |
|--|--|--|----------------|----------|--------|-----|---|---------|---------|---|---|---------|----------|----|--------|----------------|---|---|
| <p>Neutralisation Core Practical:</p> <ol style="list-style-type: none"> Use a measuring cylinder to measure 50ml of hydrochloric acid put in a beaker. Estimate and record the pH of the contents of the beaker Put a piece of universal indicator paper onto a white tile Dip the end of a glass rod into the solution, then tap it onto the universal indicator paper Wait 30 seconds, then match the colour to the appropriate pH on the pH chart Rinse the glass rod with water Measure 0.3g of calcium hydroxide powder add to the acid and stir Repeat steps 2 and 3 until 2.4g has been added The method can be improved by using a pH probe to record the acidity/alkalinity | <ol style="list-style-type: none"> Electrolysis of copper sulfate. Wear goggles to prevent chemicals getting into your eyes With copper electrodes <ol style="list-style-type: none"> the anode loses mass and cathode gains mass as the current increases the loss in mass at the anode increases and the gain in mass at the cathode increases With graphite electrodes: <ol style="list-style-type: none"> Copper metal collects at the cathode Oxygen is produced at the anode Oxidation occurs at the anode Reduction occurs at the cathode | <ol style="list-style-type: none"> Acid/alkali titrations are neutralisation reactions Rinse a burette with acid and then fill it with acid, ensuring the jet below the tap is also full - accurate volume of acid Rinse a pipette with alkali and then fill it to 25.0cm³ and empty into a conical flask Add a few drops of methyl orange and place onto a white tile - to determine a clear end point of the reaction Add the acid to alkali and swirl the flask - to ensure complete mixing of the acid and alkali When the indicator starts to change colour, rinse the tip of the burette and sides of the flask with distilled water from a wash bottle Add the acid drop by drop- ensures it is an accurate volume of acid used Repeat the experiment until concordant results are obtained | | | | | | | | | | | | | | | | |
| Week 8 | Week 9 | Week 10 | | | | | | | | | | | | | | | | |
| <ol style="list-style-type: none"> Atomic structure: <table border="1" data-bbox="954 1496 1098 2056"> <thead> <tr> <th>Particle</th> <th>Charge</th> <th>Mass</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>Proton</td> <td>+ 1</td> <td>1</td> <td>Nucleus</td> </tr> <tr> <td>Neutron</td> <td>0</td> <td>1</td> <td>Nucleus</td> </tr> <tr> <td>Electron</td> <td>-1</td> <td>1/1835</td> <td>Electron Shell</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Mass number is made up of the number of protons and neutrons. Atomic number is the proton number and this is equal to the number of electrons. An isotope is an element with the same number of protons and electrons but a different number of neutrons. | Particle | Charge | Mass | Location | Proton | + 1 | 1 | Nucleus | Neutron | 0 | 1 | Nucleus | Electron | -1 | 1/1835 | Electron Shell | <ol style="list-style-type: none"> Covalent bonding: <ol style="list-style-type: none"> takes place to form atoms with a full outer shell occurs between a non-metal and a non-metal is when a pair of electrons is shared between two atoms Ionic bonding: <ol style="list-style-type: none"> is the transfer of electrons to gain a full outer shell forming oppositely charge particles that attract due to electrostatic forces of attraction <ol style="list-style-type: none"> occurs between a metal and a non-metal forms substances with high melting and boiling points Metallic bonding takes place between 2 metals and has a sea of delocalised electrons allowing metals to conduct electricity. | <ol style="list-style-type: none"> Graphite, graphene, diamond and fullerenes are all allotropes of carbon Fullerenes have weak intermolecular forces, low melting points, are soft and slippery but are strong due to covalent bonding Graphene is a sheet of carbons that is one carbon thick, it is a good electrical conductor due to free electrons being present Diamond and graphite have many strong covalent bonds therefore have high melting points Diamond has 4 carbons in the covalent bonds Graphite has 3 carbons in its covalent bonds and therefore can conduct electricity due to free delocalised electrons |
| Particle | Charge | Mass | Location | | | | | | | | | | | | | | | |
| Proton | + 1 | 1 | Nucleus | | | | | | | | | | | | | | | |
| Neutron | 0 | 1 | Nucleus | | | | | | | | | | | | | | | |
| Electron | -1 | 1/1835 | Electron Shell | | | | | | | | | | | | | | | |

Year 11 Physics Cycle Two

Key Vocabulary

- Control variables:** these are the things you will need to keep the same, to ensure you collect good-quality evidence
- Dependent variable:** this is the thing you are going to record in your investigation
- Independent variable:** this is the thing you are going to change in your investigation
- Mass:** a measure of the amount of material there is in an object (measured in kg)
- Weight:** the force pulling an object downwards. It depends on the mass of the object and the gravitational field strength. It is measured in newtons (N).

Exam breakdown:

Each paper is worth 50% of your grade

Paper 1 - 105 minutes:

- Topic 1: motion
- Topic 2: motion and forces
- Topic 3: conservation of energy
- Topic 4: waves
- Topic 5: light and the EM spectrum
- Topic 6: radioactivity
- Topic 7: astronomy

Paper 2 - 105 minutes:

- Topic 8: forces doing work
- Topic 9: forces and their effects
- Topic 10: electricity and circuits
- Topic 11: static electricity
- Topic 12: magnetism and motor effect
- Topic 13: Electromagnetic induction
- Topic 14: Particle model
- Topic 15: forces and matter

Week 1

Speed and acceleration:

- Speed (m/s) = Distance(m) ÷ time (s)**
- Distance travelled = average speed x time**
- Velocity** is speed in a particular direction
- Acceleration** can be calculated using:

$$\text{acceleration (m/s}^2\text{)} = \frac{\text{change in velocity (m/s)}}{\text{time taken (s)}}$$
- This can be also be written as:

$$a = \frac{v-u}{t}$$
- Where **a** is the acceleration, **v** is the final velocity, **u** is the initial velocity and **t** is the time taken for the change in velocity.

Week 3

Core practical investigating acceleration:

- Aim** is to investigate the relationship between **force, mass and acceleration**
- Independent variable** is the mass of the trolley
- Dependent variable** is the acceleration of the trolley measured by light gates
- Control variables** are height of ramp, force on pulley
- A piece of **card** is needed on the top of the trolley to set off the light gates
- This investigation can be adapted to **investigate force** by changing the **masses** on the end of the pulley
- You would need to **transfer masses** from the pulley to the trolley to ensure the **mass of the system** is kept the **same**

Week 2

Newton's laws of motion:

- First law:** A moving object will continue to move at the same speed and direction unless an external force acts on it. A stationary object will remain at rest unless an external force acts on it.
- Second law:** The acceleration in the direction of a resultant force depends on: size and direction of the force.
Force = mass x acceleration
(N) (kg) x (m/s²)
- Third law:** whenever two objects interact, they exert equal and opposite forces on each other (action-reaction forces).

Week 4

Momentum (higher only):

- Is a measure of the tendency of an object to **keep moving** or how hard it is to **stop** it.
- The momentum of an object depends on its **mass** and its **velocity**.
- Momentum is a **vector** quantity
- Momentum = mass x velocity**
(kg m/s) (kg) x (m/s)
- Can also be written as **p = m x v**
- Where **p** stands for momentum
- Conservation of momentum:** when moving objects collide the total momentum of both objects is the same before the collision as it is after the collision.



| Week 5 | Week 6 | Week 7 |
|--|---|---|
| <p>Describing waves:</p> <ol style="list-style-type: none"> Waves can be transverse or longitudinal. Wave frequency is the number of waves passing a point each second (measured in hertz (Hz)). The period is the length of time it takes one wave to pass a given point. Wavelength is the distance from one point on a wave to the same point in the same position on the next wave. Amplitude is the maximum distance of a point on the wave away from its rest position (measured in metres). Wave speed can be calculated by: <ol style="list-style-type: none"> Speed (m/s) = $\frac{\text{distance (m)}}{\text{time (s)}}$ Wave speed (m/s) = frequency (Hz) x wavelength (m) | <p>Core practical investigating waves:</p> <p>Aim is to investigate the suitability of equipment needed to measure the speed of waves in a solid and a liquid.</p> <p>Waves in a liquid:</p> <ol style="list-style-type: none"> A ripple tank is set up filled with water and a dipper attached to a motor The frequency is measured by counting how many waves are formed in 10 seconds This can be improved by taking a slow motion video and dividing by 10 The wavelength is estimated using a ruler on the side of the tank. This can be improved by taking a photo of the wave <p>Waves in a solid:</p> <ol style="list-style-type: none"> Frequency is measured using an app Wavelength is measure by the length of the rod x2 | <p>Core practical investigating refraction:</p> <ol style="list-style-type: none"> Refraction is the change in direction of a wave due to a change in density The ray of light shining into the glass block is called the incident ray The ray of light travelling through the glass block is called the refracted ray The normal line is drawn at 90° to the glass block The angle of incidence is measured between the normal line and incident ray The angle of refraction is measured between the normal line and the refracted ray When light enters a more dense medium it refracts towards the normal When light enters a less dense medium it refracts away from the normal |
| Week 8 | Week 9 | Week 10 |
| <p>Energy calculations:</p> <ol style="list-style-type: none"> The energy transferred by a force acting over a distance is called work done. Work done (J) = force (N) x distance (m) Objects above the surface of the Earth contain gravitational potential energy (GPE). The amount of GPE depends on the mass of the object, the strength of gravity and how far the object is moved upwards. GPE (J) = mass (kg) x gravitational field strength(N/kg) x change in vertical height (m) Energy stored in moving objects is called kinetic energy (KE). KE (J) = 0.5 x mass (kg) x speed² (m/s²) | <p>Energy calculations:</p> <ol style="list-style-type: none"> Energy cannot be created or destroyed. It can only be transferred from one store to another. This is called conservation of energy. Efficiency is a way of describing how good a machine is at transferring energy into useful forms. Efficiency of a machine is given as number between 0 and 1. Efficiency of a device = (useful energy transferred by a device / total energy supplied to the device) Most machines waste energy when they get hot. Friction between moving parts causes them to heat up. This energy is transferred to the surroundings by heating. | <p>Core practical investigating infrared radiation:</p> <ol style="list-style-type: none"> Aim is to investigate how different coloured surfaces affect how much energy is transferred by radiation from a tube of hot water. Independent variable is different coloured surfaces. Dependent variable is the temperature change of the water over 20 minutes.. Some control variables are: volume of hot water, same size boiling tube, thickness of material, same size of material and use the same size bung in the end of the tube. Results: matt/dull black surfaces should emit the most heat energy by radiation. |

Year 11 Philosophy, Religion and Ethics Cycle Two

| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
|---|---|---|---|---|
| <p>RELIGION, PEACE & CONFLICT PEACE AND CONFLICT; VIOLENT PROTEST AND TERRORISM</p> <p>Justice - Bringing about what is right and fair or making up for a wrong that has been committed.</p> <p>Protests - An expression of disapproval, often in a public group</p> <p>Terrorism - The unlawful use of violence, usually against innocent civilians, to achieve a political goal</p> | <p>RELIGION, PEACE & CONFLICT REASONS FOR WAR, JUST WAR AND HOLY WAR</p> <p>Retaliation - Deliberately harming someone as a response to them harming you.</p> <p>Just war - A war which meets the international accepted criteria for fairness; follows traditional Christian rules for a just war, and is now accepted by other religions.</p> <p>Holy war - Fighting for a religious cause or God, probably controlled by a religious leader.</p> | <p>RELIGION, PEACE & CONFLICT NUCLEAR WAR AND WEAPONS OF MASS DESTRUCTION</p> <p>Weapons of mass destruction - Weapons that can kill large numbers of people and/or cause great damage..</p> <p>Nuclear weapons - Weapons that work by a nuclear reaction; they devastate huge areas and kill large numbers of people.</p> <p>Chemical weapons - Weapons that use chemicals to poison, burn or paralyse humans and destroy the natural environment.</p> | <p>RELIGION, PEACE & CONFLICT PACIFISM AND PEACE MAKING</p> <p>Pacifism - The belief of people who refuse to take part in war and any other form of violence.</p> <p>Peacemaking - The action of trying to establish peace.</p> <p>Reconciliation - A sacrament in the Catholic Church, also, when individuals or groups restore friendly relations after conflict or disagreement.</p> | <p>RELIGION, PEACE & CONFLICT VICTIMS OF WAR</p> <p>Caritas - A Catholic organisation whose mission is to serve the poor and promote charity and justice throughout the world.</p> <p>Christian Aid - An organisation set up in the 1940s, aiming to end poverty, including poverty suffered by victims of war and refugees.</p> <p>Islamic Relief - An organisation founded in 1984, they respond to victims of war by providing short-term and long-term aid.</p> |
| Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
| <p>RELIGION, CRIME & PUNISHMENT CRIME AND PUNISHMENT AND REASONS FOR CRIME</p> <p>Evil: The opposite of good; a force or the personification of a negative power that is seen in many traditions as destructive and against God.</p> <p>Poverty - Being without money, food or other basic needs of life.</p> <p>Greed - Wanting to possess wealth, goods or items of value which are not needed.</p> | <p>RELIGION, CRIME & PUNISHMENT LAWBREAKERS; TYPES OF CRIME; SUFFERING</p> <p>Hate crime - Crimes, often including violence, that are targeted at a person because of their ethnicity, religion, sexuality, disability or gender.</p> <p>Free Will - The ability of people to make their own decisions for themselves without constraint.</p> <p>Prison - A secure building where offenders are kept for a period of time set by a judge.</p> | <p>RELIGION, CRIME & PUNISHMENT AIMS OF PUNISHMENT AND THE TREATMENT OF CRIMINALS</p> <p>Retribution - An aim of punishment - to get you own back; an eye for an eye.</p> <p>Deterrence - An aim of punishment - to put people off committing crimes</p> <p>Reformation - An aim of punishment - to change someone's behaviour for the better.</p> | <p>RELIGION, CRIME & PUNISHMENT FORGIVENESS</p> <p>Forgiveness - Showing mercy, and pardoning someone for what they have done wrong.</p> <p>"Forgive us our sins, as we forgive those who sin against us." - The Lord's Prayer.</p> <p>"Lord, how many times shall I forgive my brother when he sins?...I tell you, not seven times, but seventy-seven times" - Matthew 18:21-22</p> | <p>RELIGION, CRIME & PUNISHMENT THE DEATH PENALTY</p> <p>Corporal punishment - Punishment of an offender by causing them physical pain - illegal in the UK</p> <p>Capital punishment - The death penalty, illegal in the UK.</p> <p>Sanctity of life - The idea that all life is holy and it is created and loved by God.</p> |

| Year 11 Sociology Cycle Two | | | | |
|--|--|--|--|--|
| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
| <p>SOCIAL THEORIES</p> <p>Culture: The whole way of life of a particular society or social group, including values and norms.</p> <p>Values: Beliefs and ideas about what is seen as desirable or worth striving for in society</p> <p>Norms: Expected or appropriate behaviour in different situations.</p> <p>Socialisation: The process through which people learn the culture, values and norms of their society.</p> | <p>RESEARCH</p> <p>Positivism: A research approach which focuses on facts, figures and quantifiable (measurable) data.</p> <p>Interpretivism: A research approach which focuses on people's feelings and experiences.</p> <p>Informed Consent: Where a research participant is fully aware of what the research is about and why it is being carried out.</p> | <p>FAMILIES</p> <p>Nuclear Family: A mother, father and children.</p> <p>Extended Family: A nuclear family plus grandparents, aunts, uncles etc.</p> <p>Reconstituted Family: A couple with children from previous relationships.</p> <p>Family functions: The part played by families in the smooth running of society.</p> | <p>FAMILIES</p> <p>Conventional family: A 'traditional', nuclear family where conjugal roles are segregated (separate).</p> <p>Symmetrical family: A family in which partners carry out different tasks but each makes a similar contribution within the home.</p> <p>Patriarchy: Male power, authority and dominance over women</p> <p>Double shift: When a woman is in paid employment but is also responsible for caring for her house and family.</p> | <p>EDUCATION</p> <p>Hidden curriculum: Things learned in school that are not formally taught, such as valuing obedience and punctuality (being on time).</p> <p>Meritocracy: A system in which individuals' achievements are based on their own talents and efforts rather than their social background.</p> <p>Interactionism: A perspective that focuses on how people interact on a daily basis</p> |
| <p>Week 6</p> <p>EDUCATION</p> <p>Cultural Deprivation: A theory that suggests that students from certain groups lack the 'correct' values and attitudes to succeed in education.</p> <p>Counter-school Subculture: A group within a school that rejects the values and norms of the school and replaces them with anti-school values and norms.</p> <p>Streaming: Where students are separated into different ability groups and then taught in these separate groups.</p> | <p>CRIME AND DEVIANCE</p> <p>Crime: An illegal act (such as shoplifting or murder) that is punishable by law.</p> <p>Deviance: Behaviour that does not conform to society's norms and values, which is likely to lead to negative sanctions.</p> <p>Social Control: Control constraints over people's actions from society or groups.</p> <p>Social Cohesion: The idea that people in society should have a shared set of values and attitudes that unite them.</p> | <p>CRIME AND DEVIANCE</p> <p>Criminal Subculture: A social group whose members' values and behaviour involve breaking the law.</p> <p>Deviancy amplification: The process whereby public and media reaction to deviance leads to an increase in (or amplifies) deviance by provoking more of the same behaviour.</p> <p>Control theory: The idea that people are controlled through a deal that rewards them for conformity.</p> | <p>Week 9</p> <p>SOCIAL THEORIES</p> <p>Social stratification: The way that society is structured or divided into strata (layers) with the most privileged at the top and the least favoured at the bottom.</p> <p>Social class: A form of social stratification based on economic factors such as occupation and income</p> <p>Social mobility: Movement up or down between the strata of society.</p> | <p>Week 10: Revision</p> <p>SOCIAL THEORIES</p> <p>Embourgeoisement thesis: A hypothesis suggesting that working-class families are becoming middle class in their norms and values as their incomes and standards of living improve.</p> <p>New Right: A political perspective that believes that the influence of the state in society should be reduced and that market forces should have more of a role. It also stresses the importance of 'traditional' values such as self-reliance.</p> |

Year 11 Statistics Cycle Two

Key Words, Sampling, Capture Recapture - Week 1

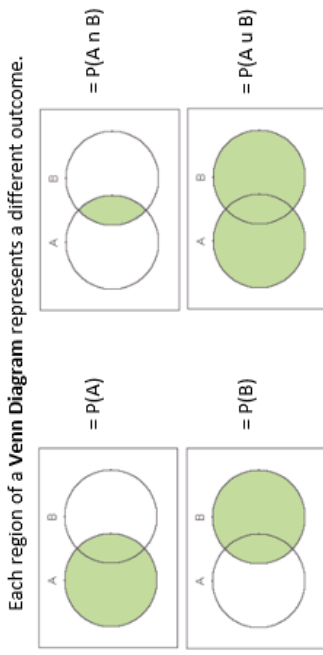
| Vocab | Definition |
|-----------------------------|---|
| Primary | Data collected from the source by the person who will be using it. |
| Secondary | Data that has been collected by someone else. |
| Quantitative | Numerical observations or measurements |
| Qualitative | Non-numerical observations |
| Continuous | Can take any value on a continuous numerical scale |
| Discrete | Can only take particular values on a continuous numerical scale |
| Population | The whole group you are interested in |
| Census | A survey of a whole population |
| Sample | Small part of a population rather than the whole population |
| Sampling Units | People or items to be sampled |
| Sample Frame | List of all the sampling units |
| Random Sample | Every item has an equal chance of being chosen |
| Stratified Sample | Population is divided into separate groups "strata" then, a simple random sample is drawn from each group/strata. |
| Opportunity Sample | Using people/objects that are available at the time |
| Cluster Sample | Data naturally splitting into groups .e.g. geographical areas |
| Systematic Sample | Choosing a sample at equal intervals through a population e.g. every 5th person |
| Quota Sample | Group the population by characteristics. Such as age/gender and interview a quota (number) from each group. |
| Independent Variable | The independent changing variable. Generally the x value. |
| Dependent Variable | Variable that may be affected by the independent variable. Generally the y value. |

Mean, Standard Deviation and Outliers - Week 2

| Vocab | Formula to learn! |
|-----------------------|---|
| Mean | $\bar{x} = \frac{\sum x}{n}$ <p> \bar{x} = mean Σ = sum of ... x = values/frequency n = number of values </p> |
| Median | <p>The middle value when in order. To find the position:</p> $\frac{1}{2}(n+1)$ <p>th position n = number of values</p> |
| Outliers | <p>Outliers are considered outside the expected range of data.</p> <p>Smaller outlier $< LQ - (1.5 \times IQR)$</p> <p>Larger outlier $> UQ + (1.5 \times IQR)$</p> |
| Weighted mean | <p>For data that has different weightings or values in each group, we use the weighted mean.</p> $\frac{\Sigma(\text{value} \times \text{weight})}{\Sigma \text{ weights}}$ |
| Geometric Mean | <p>The geometric mean is the nth root of the product of n values.</p> $\sqrt[n]{\text{value}_1 \times \text{value}_2 \times \dots \times \text{value}_n}$ <p>n = number of values</p> |

Year 11 Statistics Cycle Two

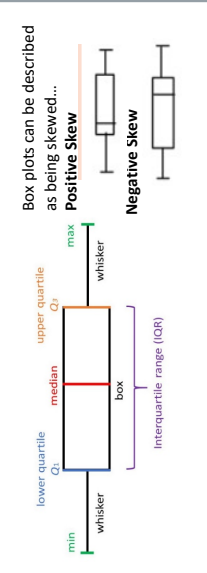
Venn and Tree Diagrams - Week 3



Conditional Probability
 if the probability of one event affects the outcome of the other event this is known as **Conditional Probability**.

The probability that B will happen if A has already happened is the **conditional probability of B given A** shown as $P(B/A)$

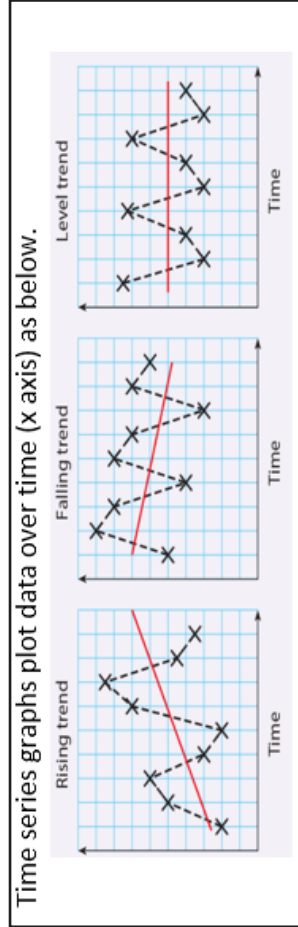
Cumulative Frequency Curves and Box Plots - Week 4



Index numbers - Week 7

| | |
|----------------------------|--|
| Retail Price Index RPI | Rate of change of prices in everyday life such as food, petrol and interest rates... |
| Consumer Price Index CPI | Rate of price changes for consumers but does not include mortgages. |
| Gross Domestic Product GDP | The value of goods and services a country produces within a stated time period. |

Time Series and Moving Averages - Week 8



| | |
|--------------------------------|---|
| Trend | The way that data changes over time |
| Moving Average | An average worked out for a given number of observations over a cycle. |
| Seasonal Variation | A pattern in the data that can be accounted for by seasons |
| Mean seasonal variation | The mean of each season separately to discuss. Used to predict values outside the data set... <i>Predicted value = trend line value + mean seasonal variation.</i> |

Scatter Graphs, Lines of best fit and correlation values - Week 5 and 6

| | |
|--|---|
| Spearman's Rank Correlation Coefficient | Uses a value of r between -1 and 1. |
| Pearson's Product Moment Correlation Coefficient (PMCC) | Like Spearman's Rank but ONLY looks at if it's a LINEAR relationship! (use calculator!) |

$$r_s = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

Histograms and other statistical graphs - Week 9

Heights of Black Cherry Trees

Histograms show frequency through the **area** of each bar. The y axis is labelled Frequency Density...

NB the data must be **continuous!**

Frequency Density = $\frac{\text{Frequency}}{\text{Interval Width}}$

Comparative Pie Charts – comparing two charts with proportionately correct radius size so the area is in the same ratio as the frequency.

Use the formula $r_2 = r_1 \sqrt{\frac{F_2}{F_1}}$

Binomial Distribution - Week 5 - 6

| | |
|------------------------------|---|
| X - B(n, p) | X follows a Binomial Distribution where n = number of trials p = probability of success Also $q = 1 - p$so NOT p! |
| Mean and expansion... | mean = np NB: You can use the nCr button on your calculator to find the coefficients of a Binomial expansion!! |
| Conditions | <ul style="list-style-type: none"> - Independent Events (p must remain fixed) - Only 2 outcomes (success or failure) - Fixed number of trials. |

Other useful revision websites...

Maths Genie - Statistics - www.mathsgenie.co.uk/statistics
Has past papers to try with worked examples. Has resources of statistics only topics as well as links to cross over topics with the Maths GCSE.

Hegarty Maths - hegartymaths.com
Mostly used for Maths GCSE but as there are many topics in both can be very useful, particularly for Histograms, Venn and Tree diagrams and Probability.

Normal Distribution - Week 10

| | |
|---|---|
| X - N (μ, σ^2) | X follows a Normal Distribution where μ = mean of the population σ = standard deviation of the population σ^2 = variance of the population |
| Conditions | <ul style="list-style-type: none"> - Data needs to be continuous - The distribution is symmetrical and bell-shaped - Mode, median and mean are approximately equal. <p>Using μ and σ we can work out the % chance of an event (remember that total area under the curve = 1</p> <p>$\mu \pm \sigma = 68\%$ of all data $\mu \pm 2\sigma = 95\%$ of all data $\mu \pm 3\sigma = 99.8\%$ of all data</p> |
| Standardised scores | Standardising the scores allows you to compare 2 sets of data where a + score is above μ and a - score below μ Standardised score = $\frac{\text{score} - \text{mean}}{\text{standard deviation}}$ |
| Control Chart | A time series chart used for quality assurance |
| Warning Limit | Usually set at $\mu \pm 2\sigma$ If a sample mean is between the warning limits the process is in control and the product acceptable. |
| Action Limit | Usually set at $\mu \pm 3\sigma$... If a sample mean is between the warning and action limit another sample is taken, if the mean is outside the action limit the process is stopped and reset. |

Support available to you

If you feel at immediate risk of harm call 999 Police

Safeguarding Concern - Help from our St James Safeguarding Team

You can email: safeguarding@stjamesexeter.co.uk

If worried/anxious/ or just want to talk contact...

Food Support

If your family need foodbank vouchers or help with free school meals please email

foodsupport@stjamesexeter.co.uk

Self-Isolating Support (families with vulnerable members/with symptoms)

If you need support for picking up prescriptions/ shopping or support for your parents/carers by a community volunteer due to your family self-isolating, please email foodsupport@stjamesexeter.co.uk

Mental Health Support Team

If you have concerns over your own or your family's mental health of you own or your family. Please complete a referral on additional form or call **07866159124**

MASH

If you have any safeguarding concerns about a child, you can call MASH on **0345 155 1071**

Childline

0800 1111

www.childline.org.uk

Free, 24-hour telephone helpline for children and young people anywhere in the UK. Get help and advice about a wide range of issues, talk to a counsellor online, send Childline an email or post on the message boards.

The Mix

0808 808 4994

www.themix.org.uk

Essential support for under 25s. Phone, Email, Web support and Counselling.

www.themix.org.uk/get-support/speak-to-our-team/crisis-messenger - The Mix's Crisis Messenger text service is available 24/7 and open to anyone aged 25 or under living in the UK.

If you're in crisis and need to talk, text **THEMIX to 85258**

Samaritans:

Helpline: **116 123**

Email jo@samaritans.org

www.samaritans.org

24hr service offering emotional support

Runaway Helpline:

116 000

Email - 116000@runawayhelpline.org.uk

www.runawayhelpline.org.uk

Runaway Helpline is here if you are thinking about running away, if you have already run away, or if you have been away and come back. You can also contact the Helpline if you are worried that someone else is going to run away or if they are being treated badly or abused. You can call or text for free, 24 hours a day. It's all confidential.

Shout

is an affiliate of Crisis Text Line® in the UK that provides free, confidential support, 24/7 via text. It's a free 24/7 texting service in the UK for anyone in crisis anytime. Text **85258**

Kooth

www.kooth.com

Free, safe and anonymous support for young people.

Monday - Friday 12pm-10pm

Saturday - Sunday 6pm - 10pm

YMCA - Children and Young People's Wellbeing Service

Wellbeing Practitioners provide uses CBT (Cognitive Behavioural Therapy) techniques and goal-setting to build up emotional wellbeing and resilience in young people and their families.

Self-referral:

<https://www.ymcaexeter.org.uk/cwpwellbeing/>

Young Devon

Young Devon run a homelessness prevention scheme in Exeter; they can help 16 & 17yr olds and care leavers.

01392 331666 and ask to speak to the Homeless Prevention Team or email yes.exeter@youngdevon.org

If you are under 18 call the Social Service Emergency Duty team **0345600 0388**

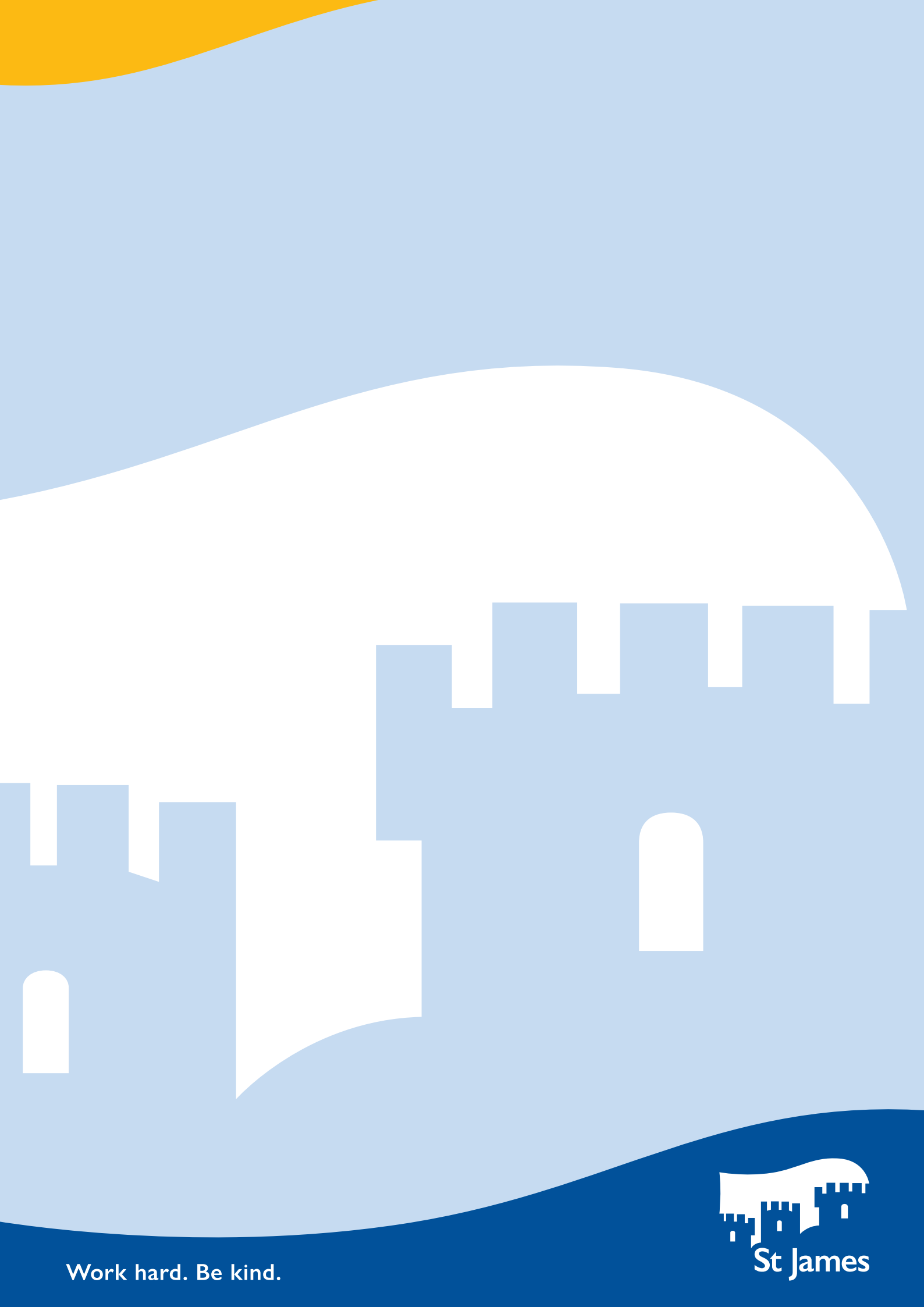
Online support and advice:

<https://www.thinkuknow.co.uk/>

Key things to remember:

- **Think before you post**
Don't upload or share anything you wouldn't want your parents, carers, teachers or future employers seeing. Once you post something, you lose control of it, especially if someone else screenshots or shares it.
- **Don't share personal details**
Keep things like your address, phone number, full name, school and date of birth private, and check what people can see in your privacy settings. Remember that people can use small clues like a school logo in a photo to find out a lot about you.
- **Watch out for phishing and scams**
Phishing is when someone tries to trick you into giving them information, like your password. Someone might also try to trick you by saying they can make you famous or that they're from a talent agency. Never click links from emails or messages that ask you to log in or share your details, even if you think they might be genuine. If you're asked to log into a website, go to the app or site directly instead.
- **Think about who you're talking to**
There are lots of ways that people try to trick you into trusting them online. Even if you like and trust someone you've met online, never share personal information with them like your address, full name, or where you go to school. Find out more about grooming.
- **Keep your device secure**
Make sure that you're keeping your information and device secure.

More information can be found on our website: <https://www.stjamesexeter.co.uk/about/safeguarding/>



Work hard. Be kind.

