KNOWLEDGE ORGANISER

YEAR 9

CYCLE 2

Name: ----------

Tutor group: ----------

The Regis School
The best in everyone™
Part of United Learning

January 2021

YOUR KNOWLEDGE ORGANISER

- Knowledge Organisers contain critical knowledge you must know. This will help you recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long-term.

- You must have this book for every lesson – it is part of your equipment.

USING THE KNOWLEDGE ORGANISER FOR REVISION

- Students remember 50% more when they test themselves after learning.
- You can use your book to help **memorisation**.
- **Read** a section of your Knowledge Organiser.
- **Cover** it up.
- **Write** out what you've remembered.
- **Check** the Knowledge Organiser to see if you're right.
- **Repeat** this process.
- Do this **every day** to help commit the information to your **long-term memory**.

HOW TO USE THE BOOK FOR SELF-QUIZZING

Read	Cover	Write	Check
READ a small section of the KO	COVER up the information so you are unable to read/ see it	WRITE out what you can remember into your self-quizzing book	CHECK what you have written and use a green pen to mark and correct

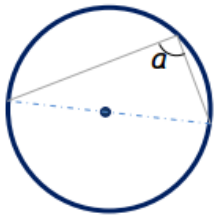
USING YOUR KNOWLEDGE ORGANISER FOR REVISION

Research shows that students remember 50% more when they test themselves after learning something.

You can use your 100% book to create **flashcards**.

These should be:

- **double-sided**
- **a question on one side, the answer on the other**
- **a keyword on one side, a definition or image on the other**
- **used for self-testing.**

Circles	**Circles**
1. What is the size of angle *a*? 2. State the rule. 	1. What do you know about the angles x and y? 2. State the rule. 

Q1 What is **emulsion**? Oil, water, droplet, shake, immiscible, bond, mixture.	**Q2** What is **one similarity** between an **alkene** and an **unsaturated** fat?
Q3 What is the name for the **test** for **unsaturated fat** or **alkene**? Describe what you would **see**.	**Q4** Describe two ways that **saturated** fat and **unsaturated fat** (oil) are **different**.
Q5 What is **the advantage** of cooking food in **oil**? **Explain** your answer.	**Q6** **Describe** what an **emulsifier** molecule does.
Q7 Name the **two parts** of an **emulsifier** molecule.	**Q8** What is the difference between a **monounsaturated** fat and **polyunsaturated** fat? **Mono** = one **Poly** = many

FEEDBACK

Your teachers will give you feedback about your learning and progress in many different ways. These will include:

- Verbal feedback about something you are working on in the lesson (practical or written work).
- Verbal feedback through asking questions.
- Guided independent self-assessment.
- Guided peer assessment.
- Instant/quick written comments or identification of SPAG errors on your work as you complete it.
- Written feedback on your work and setting R4 or extension questions for you to complete.
- Knowledge quizzing/short tests that give you a score (i.e. 15/20).
- Longer tests that may also give a score (i.e. in %) as well as feedback about the content you need to re-learn/refresh.

You will be expected to respond to feedback in the following ways:

- ✓ Correcting all SPAG errors and copying out spellings as directed by your teacher.
- ✓ Answering R4 questions and completing extension questions/tasks in green pen.
- ✓ Giving peer feedback when it is expected by the teacher, using the format provided.
- ✓ Setting yourself targets when required, to ensure that you keep developing your knowledge and skills.
- ✓ Focusing on the areas of knowledge that you need to learn and quizzing yourself on these for homework.
- ✓ Showing that you take pride in your work by presenting it neatly.
- ✓ Always asking for help if you don't understand the work or what to do.

ENGLISH – GRAMMAR

1. Punctuation Marks

Full Stop Used at the end of a sentence	**Question Mark** Used at the end of an interrogative sentence to form a question	**Exclamation Mark** Used at the end of an interrogative sentence to form a question	**Comma** Use to separate clauses in a sentence
Speech Mark Used to show when a character speaks	**Colon** Used to separate two independent clauses when the second explains or illustrates the first	**Semi-Colon** Used to separate two independent clauses that about the same topic	**Apostrophe** Used in 3 ways to show contraction, plural or possession
Hyphen Can take the place of commas, parentheses, or colons – in each case, to slightly different effect	**Slash** Used to separate numbers, letters or words	**Ellipsis** Use in non-fiction to show omission. In fiction, shows hesitancy or long pause	**Parenthesis** Used to add extra information in a sentence

2. Apostrophe Rules

To show contraction:
Used to show when letters are omitted from words.

- Do not = don't
- Could not = couldn't
- They are = they're

To show possession:
Can be used to show that one thing belongs to or is connected to something.

- The cat's tail was fluffy.

Cat is a singular noun so you need to add an apostrophe and 's' to show that the tail belongs to the cat.

- Charles's cat was naughty.

Charles is a singular noun so, even though it ends in an 's' already, you need to add an apostrophe and another 's' to show that the cat belongs to Charles.

- The brothers' feet were muddy.

Brothers is a plural noun that ends in an 's' so you don't add another 's' after your apostrophe. You just add the apostrophe to show the feet belong to the brothers.

- The children's toys were broken.

Children is a plural noun but it doesn't end with an 's' so you need to add an apostrophe and 's' to show that the toys belong to the children.

3. Sentence Types

Simple	Consists for one independent clause. (An independent clause contains a subject and verb and expresses a complete thought. Examples: • I like coffee. • Mary likes tea.
Compound	Is two (or more independent clauses joined by a conjunction or semi-colon. Each of these clauses could form a sentence alone. • I like coffee and Mary likes tea. • Mary went to work but John went to the party. • Our car broke down; we came last.
Complex	Consists of an independent clause plus a dependent clause. A dependent clause starts with a subordination conjunction or a relative pronoun and contains a subject and a verb but does not express a complete thought. • We missed our plane because we were late. • Our dog barks when she hears a noise.
Minor	Consists of a fragment, or incomplete clause that still conveys meaning. • Hello. • The more, the merrier.

4. Word Types

Noun: A name, place or thing	**Verb:** A being, doing or having word	**Adjective:** A word that describes the noun
Abstract Noun: An idea or concept, e.g. bravery, courage, love	**Modal Verb:** A word that shows necessity or possibility	**Pronoun:** A noun that can be substituted for a name
Concrete Noun: A noun that can be identified through one of the five senses (taste, touch, sight, hearing or smell)	**Adverb:** A word that describes a verb	**Preposition:** The position or location of a word

THE REGIS SCHOOL SPELLING LIST
Year 9 – Spring Term

Why is spelling important?

Aside from being given marks for spelling in exams, learning to spell is extremely useful if we want to become confident readers and writers. If you are constantly stopping to think about how words are spelled while you write, it can interrupt the flow of your thoughts, taking you away from what we want you to be thinking about: your choice of words and how you construct those words into sentences that communicate exactly what you want to say.

If you are a confident speller, you are also much more likely to make adventurous vocabulary choices, selecting the exact word to communicate your message, rather than playing it safe and using a word you already know how to spell.

Being a great speller makes you a more effective communicator, allowing you to share your own thoughts and ideas with the world!

Quizlet

All spellings are available on 'Quizlet'. Follow the link and, if you haven't done so already, create an account using your school email address

Link: https://quizlet.com/join/9Nx5MHGr4

Use the spelling pages to practise your weekly spellings. First, look carefully at the word. Study its shape and the order of the letters. Then, cover the spelling; try to see it in your mind's eye. Attempt to write the spelling out. Check your work: have you missed a letter? Got letters mixed up or jumbled? Try again. Even if you get it right first time, practise makes perfect. Fill in the grid to ensure you are ready for your test in tutor time.

Week 1 – 'tion'	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Abdication				
Attrition				
Competition				
Construction				
Deposition				
Extraction				
Promotion				
Respiration				
Specification				
Transportation				
Challenge Words:				
Coagulation				
Dextrinisation				

Week 2 – 'ic'	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Aerobic				
Fickle				
Hydraulic				
Icicle				
Logical				
Metric				
Particularly				
Specific				
Technical				
Traffic				
Challenge Words:				
Aesthetics				
Ergonomics				

Week 3 – Double letters	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Aggression				
Alliance				
Application				
Assurance				
Business				
Classic				
Jagged				
Knitted				
Opposition				
Patten				
Challenge Words:				
Approximately				
Questionnaire				

Week 4 – 'y'	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Analysis				
Hymn				
Intensity				
Plymouth				
Polyglot				
Psychic				
Pyjamas				
Recyclable				
Synopsis				
Treaty				
Challenge Words:				
Photosynthesis				
Psychology				

Week 5 – v-c-v	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Chloroplast				
Flexibility				
Gurdwara				
Profit				
Propaganda				
Renewable				
Stalemate				
Stomata				
Waheguru				
Woven				
Challenge Words:				
Equilibrium				
Militarism				

Week 6 – Vowel Combinations	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Confluence				
Deficiencies				
Dreadnought				
Enough				
Fuel				
Nationalism				
Patriotism				
Quantitative				
Reactivity				
Toile				
Challenge Words:				
Antioxidant				
Entrepreneur				

Week 7 – ‘in’	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Advertising				
Against				
Entertainment				
Following				
Information				
Intensity				
Marine				
Original				
Setting				
Within				
Challenge Words:				
Financial				
Interception				

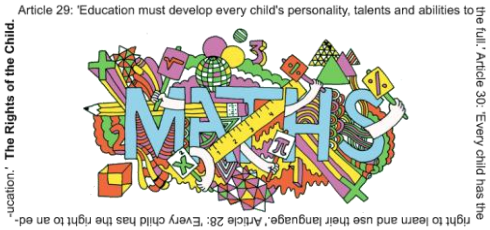
Week 8 – ‘ar’	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Armistice				
Calendar				
February				
Popularity				
Regard				
Searching				
Standardised				
Tributaries				
Variety				
Various				
Challenge Words:				
Guarantee				
Necessary				

Week 9 – 'ia'	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Carriage				
Christian				
Commercial				
Diagram				
Giant				
Immediately				
Politician				
Serial				
Social				
Variation				
Challenge Words:				
Especially				
Imperialism				

Week 10 – Other Words	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Abrasion				
Accelerate				
Combustion				
Dynamic				
Geography				
Longitude				
Research				
Sacred				
Shrapnel				
Sikhism				
Challenge Words:				
Circulatory				
Equilibrium				

Week 11 – Recap	Attempt 1	Attempt 2	Attempt 3	Attempt 4
Abdication				
Calendar				
Combustion				
Icicle				
Intensity				
Reactivity				
Shrapnel				
Specification				
Stomata				
Variation				
Challenge Words:				
Equilibrium				
Guarantee				

MATHS CORE KNOWLEDGE



hegartymaths

http://hegartymaths.com

Maths Lesson Essentials!

- Have you written and underlined the date and title?
- Have you written the question and shown your working out?
- Have you shown your units?
- Have you brought your calculator?
- Have you marked your answer in green pen?
- Does your answer make sense?

NUMBER and ALGEBRA

Ascending
Descending
Denominator
Numerator
Solve
Solution
Decimal
Percentages
Binary
Integer

DATA

Mean
Median
Mode
Range
Scale
Proportion
Discrete data
Continuous data
Frequency
Cumulative frequency
Upper quartile
Lower quartile
Interquartile range
Distribution
Correlation
Scatter graph

SHAPE

Names 3D

Sphere
Cylinder
Tetrahedron
Prism
Cone
Pyramid

SHAPE

Names 2D

Quadrilaterals
Parallelogram
Trapezium
Rectangle
Rhombus

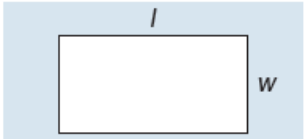
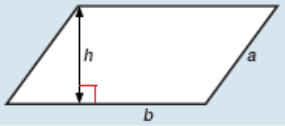
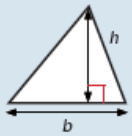
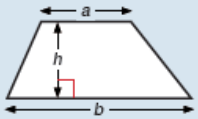
Triangles
Equilateral
Right-angle
Isosceles
Scalene

Keywords

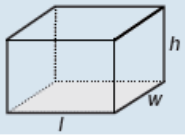
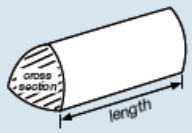
Circle
Polygon
Interior angles
Exterior angles
Acute angle
Right angle
Obtuse angle
Reflex angle
Vertically opposite angles
Corresponding angles
Alternate angles
Co-interior angles
Pythagoras
Trigonometry
Parallel
Perpendicular

MATHS CORE KNOWLEDGE

Areas

Rectangle = $l \times w$	
Parallelogram = $b \times h$	
Triangle = $\frac{1}{2} b \times h$	
Trapezium = $\frac{1}{2}(a + b)h$	

Volumes

Cuboid = $l \times w \times h$	
Prism = area of cross section × length	
Cylinder = $\pi r^2 h$	

Important Formulae

Compound measures

Speed

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

Pressure

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Density

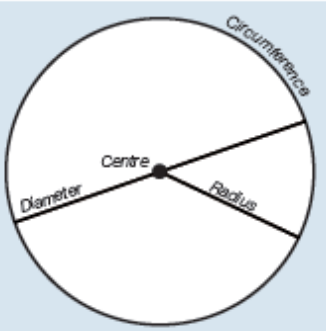
$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

Circles

Circumference = $\pi \times$ diameter, $C = \pi d$

Circumference = $2 \times \pi \times$ radius, $C = 2\pi r$

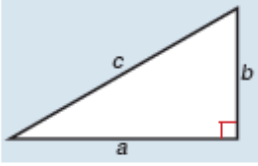
Area of a circle = π x radius squared $A = \pi r^2$



Pythagoras

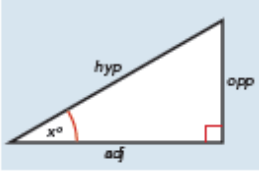
Pythagoras' Theorem

For a right-angled triangle,
$a^2 + b^2 = c^2$



Trigonometric ratios (*new to F*)

$$\sin x^\circ = \frac{\text{opp}}{\text{hyp}}, \cos x^\circ = \frac{\text{adj}}{\text{hyp}}, \tan x^\circ = \frac{\text{opp}}{\text{adj}}$$



http://hegartymaths.com

hegartymaths

SCIENCE CORE KNOWLEDGE

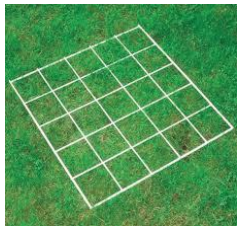
1. How Science Works Keywords

Keyword	Definition
Evidence	A set of data that proves a prediction or hypothesis.
Hazard	Something that could be dangerous.
Risk	Chance of something dangerous happening.
Prediction	Something you think will happen.
Hypothesis	Why you think something will happen.
Variables	Something that changes.
Independent variable	The variable that is changed or controlled in an experiment to test the effects on the dependent variable.
Dependent variable	The variable being tested and measured in an experiment.
Control variable	Something that is constant and unchanged during the experiment.
Repeatability	Closeness of repeats of results to each other.
Reproducibility	Agreement of results from different groups testing the same factor.
Accuracy	Closeness of a measured value to a standard or known value.
Precision	Closeness of two or more measurements to each other.
Reliability	The degree to which the result of a measurement can be depended on to be accurate.

2. Key Equipment

Measuring cylinders – 10 ml cylinders will allow measurement to the nearest 0.1 ml.
100 ml cylinders will allow measurement to the nearest 1 ml.

Thermometers – digital thermometers allow measurement to 1 decimal place, whereas alcohol thermometers only allow measurement to the nearest degree.



Quadrats – are used to do sampling and find the amount of a species in a certain area. Quadrats are placed onto the ground.

Metre ruler – used in multiple investigations in the lab. Allows us to measure to the nearest cm.

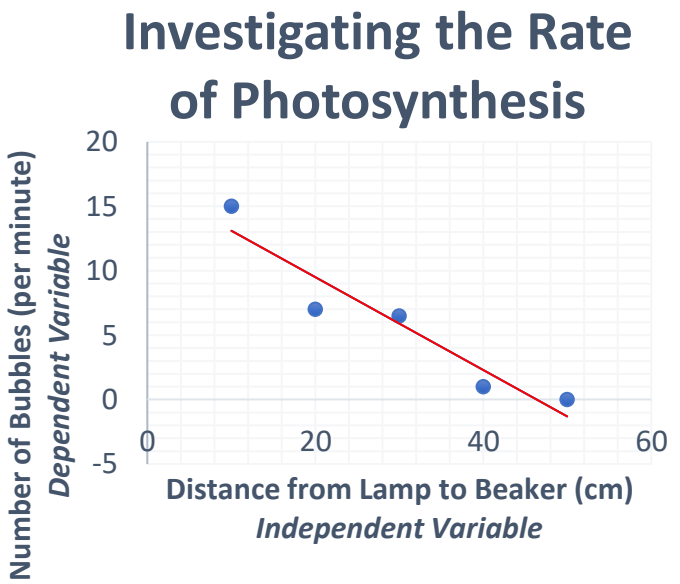
Measuring tape – used in sampling alongside the quadrat. Placed onto the ground to make a transect line to measure against.

SCIENCE CORE KNOWLEDGE

3. Graphing, Analysis and Evaluation Keywords

Keyword	Definition	Example
Hypothesis	An educated guess based on what you already know.	The rate of photosynthesis will increase as the lamp moves closer to the beaker.
Independent Variable	The variable that can be changed by the scientist, it is the cause. Found on the *x*-axis.	Distance from lamp to beaker (cm)
Dependent Variable	The variable that the scientist observes, it is the effect. Found on the *y*-axis.	Number of bubbles (per minute)
Control Variable	The variables that must always be kept the same.	Temperature, the size of the pond weed, amount of water
Line of Best Fit	A line that goes roughly through the middle of all the scatter points on a graph.	The red line on the graph above shows the line of best fit for the data plotted.
Calculations	Use the correct equation to be used based on the variables of the experiment. Use correct units.	Calculation for mean of number of bubbles per minute: Trial 1 + Trial 2 + Trial 3 ÷ 3 15 + 14 + 15 ÷ 3 = 14.6
Results Analysis	Identify patterns in data. Describe what the table and graph show.	As the lamp is getting closer to the beaker, more bubbles are produced.
Conclusion	Answer your original question. State whether or not the hypothesis was supported.	The results prove that the rate of photosynthesis is effected by the distance of the light source. As the lamp was moved closer to the baker, more bubbles were produced.
Evaluation	Suggest an improvement for the equipment used. Suggest an improvement for the method used.	Use an LED lamp. Measure the volume of oxygen produced.

Distance from lamp to beaker (cm)	Number of bubbles (per minute)			Mean number of bubbles
	Trial 1	Trial 2	Trial 3	
10	15	14	15	14.6
20	7	7	7	7
30	7	7	6	6.7
40	1	2	1	1.3
50	0	0	0	0



ART

Practical Skills Visited

Colour
Nuances of tone and colour within objects

Drawing
Continued reinforcement of basics of shape and shading
Complex shapes and compositions, detail
Highlight and reflections
Drawing for recording ideas in different ways

Painting
Use of acrylics
Use of different surfaces / mixed media work
Painting on a larger / smaller scale – painting to suit scale

Printing
Collagraph

3D
Sculpture / installation

Photography
Using photographs and edits to support practical work

Literacy
Writing about Art and own ideas in details with a focus on evidencing ideas and thoughts through annotation in the sketchbook

Vocabulary

- **Installation** – artwork created by putting objects together in a particular way
- **Contemporary art** – art that is being created in society today
- **Mixed media** – using different media together
- **Annotation** – adding useful notes to your work to explain ideas
- **Development** – showing progression within a project and showing links between artists you study and your own work
- **Refinement** – improving your ideas by trying them out in order to create a successful final piece
- **Collagraph** – a print that is created by building up a surface and then printing from this
- **Acrylic** – a thick, water based paint, often used as an alternative to oil paint

Stretch / Further Reading

1	Complete at least one drawing a week from real life of ANYTHING using a different media – pencil, pen, thread, crayon, etc. This will greatly improve your drawing skills.
2	Find out about installation Art – which artists first starting working in this way?
3	Take photographs that relate to your projects, this will make your work more personal and GCSE in style, preparing you for GCSE and also making your work stand out from the rest.
4	Visit a gallery / museum: Pallant House in Chichester is a good start. London – The National Gallery, Tate Britain, Tate Modern, The British Museum and the V&A Museum are just a few that are free. **LINKS** **Drawing** https://www.studentartguide.com/articles/realistic-observational-drawings

Artists

This year, your teacher will be being more creative and choosing artists specifically for you and your class. You need to ensure that you read about the artists fully to understand them and be able to say HOW they influence the work that you create.
LINKS
How to analyse and use artists work
https://www.bbc.com/bitesize/guides/zymtv9q/revision/1

COMPUTING (Databases)

Database Keywords	Definition
Data	Values, typically letters or numbers; 'text' – writing; 'date / time' – date or time; 'currency' – euro, pound, dollar; 'autonumber' – number increases by one each time; 'yes/no' – only yes or no can be entered.
Fields	A category of data in a database, e.g. First Name or Date of Birth.
Mail merge	A method of creating lots of documents customised with data from a database, e.g. one letter sent to multiple people. The address of each person is read from and stored in a database.
Query	A search or question performed inside a database.
Table	Consists of related records, e.g. Students.
Primary Key	A field that contains data that is unique for each record.
Record	Consists of related fields, e.g. Paul Smith who is 1.8 m, achieved a grade 9 and is in the basketball team.

Homework Checklist for first term		
1	Use this to revise	https://www.bbc.com/bitesize/guides/zswnb9q/revision/1
2	Homework – Idea Badges	Big Data, Personal Statement , Projects Advertising , CRM, Jargon Buster, Money Management
3	Keywords from KO	You could also use Quizlet to practise
4	Extension – Work	Research where databases are used in everyday life

Using query operators		
Query Operator	**Meaning**	**Example**
<	Less than	<1.65
<=	Less than or equal to	<=40
>	Greater than	>1.9
>=	Greater than or equal to	>=30
=	Equal to	=”M”
BETWEEN	Tests for a range of values	BETWEEN 18 AND 25
AND	All criteria must be satisfied	
OR	At least one of the criteria must be satisfied	“medium” OR “overweight”
NOT	All criteria are satisfied except for the ones specified	NOT “bald” AND NOT “fair”

DANCE

This is a recall of knowledge studied at the end of Year 8

Dance Key Terminology

1	Acceleration	Speeding up the movement.
2	Contrast	Movements or shapes that have nothing in common.
3	Complementary	Movements or shapes that are similar to but not exactly the same.
4	Highlight	Important moments of the dance.
5	Mental rehearsal	Thinking through or visualising the dance.
6	Pathways	Designs traced in the space. This can be in the air or on the floor.
7	Contact	Working with others using touch or lifts.
8	Space	The 'where' of movements such as levels, directions, pathways and patterns.
9	Safe execution	Carrying out actions safely.
10	Physical skills	Aspects enabling effective performance such as posture, alignment, balance, coordination, mobility, flexibility, stamina, strength, extension and isolation.

Challenge: Improve your Understanding of Dance

1	Mood	How the dance makes us feel? How does the dance affect the mood?
2	Meaning	What is meant by the performance? The theme, the style, the intent.
3	Style	What characteristic can you see in the dance style?
4	Narrative	Does the dance tell a story?
5	Audience skills	The ability to give accurate feedback to allow others to improve.
6	Effective warm up	How to include a range of exercises to avoid injury and improve physical skills.

Building Blocks of Dance

1	Actions	What the dancer is doing. You need to name a variety of actions.
2	Space	Where the actions take place. You need to know how the space is used effectively.
3	Relationships	Who the dancer is performing with. You need to be able to name a variety of relationship content.
4	Dynamics	How the action is performed. The speed and quality of the movements.

Features of Production

1	Performance environment	Where the dance takes place? Site sensitive, end stage or proscenium arch.
2	Lighting	How is the choreographer using lighting to support their intention? What colours are used and why?
3	Costume	What are the dancers wearing? How does this impact on the dance idea?
4	Dancers	How many dancers are performing? Are they performing solos, duets or in an ensemble?
5	Aural setting	What can you hear? What instruments are playing? What significance does this have on the dance idea.
6	Use of props	What props are used? How do these props enhance our understanding of the dance work?

DRAMA

Devising Theatre: Generating ideas for scenes and characters

1	**Stimulus:** A piece of written text or imagery that is used to inspire ideas for a scene or whole performance.
2	**Verbatim Text:** Using exact words from a real person in your performance. You can find verbatim text from interviews and quotes online or in print.
3	**Role on the Wall:** You draw the outline of human figure on a piece of paper. Inside the outline you write everything you know about the character and any ideas you have to develop your understanding of them.
4	**Writing in Role:** A drama strategy that asks students to write from a character's perspective, typically in a familiar format like a diary entry; a letter, email, or text; a newspaper headline; or a letter to an editor.
5	**Hot Seating:** A character is questioned by the group about his or her background, behaviour and motivation. Even done without preparation, it is an excellent way of fleshing out a character. It also can help develop plot idea.

Devising Theatre: Drama techniques to deliver and shape your performance

1	**Narration:** The act of telling the story to the audience.
2	**Direct Address:** Speaking directly to the audience and not towards another character on stage.
3	**Choral speaking:** When all members of the cast say the same thing at the same time. This can signify that you want to emphasise what is being said or that all the actors are playing one character (known as group role).
4	**Thought tracking:** Speaking the thoughts of the character out loud to the audience using direct address.
5	**Placards:** A printed or handwritten notice or sign used in the performance to deliver information about the plot, characters, themes or messages.
6	**Soundscape:** Using the actors on stage to make the background soundtrack to the scene to add atmosphere.
7	**Repetition:** Repeating a particular line or movement again and again. This can help show that is significant to the key themes and / or messages of your performance.
8	**Slow motion:** Changing the speed of what is happening on stage so that it is slower than real life. This can make sure the audience focus on specific detail that could be missed at normal speed. It also helps highlight that the moment is significant.
9	**Choral Movement:** The same movement, gestures or actions that are performed by more than one actor at the same time. This can signify that you want to emphasise what is being said or that all the actors are playing one character (known as group role).
10	**Movement sequence:** Creating a series of *freeze frames* that link together with *transitions*. You could also include moments of *choral movement* and *body as prop*. This helps to get ideas and narrative across quickly using imagery. This works well if you add music to create atmosphere. Text can also be spoken over the top to create further meaning.

ENGLISH (Reading Analysis)

1. WHAT, HOW AND WHY PROMPTS

What is the writer doing?

- The writer is …
- In the novel … the writer uses … to …
- The writer creates an atmosphere of … by using …

In Chapter 3 in *Of Mice and Men*, the writer uses sound imagery to create a contrast between the men outside the barn and the quiet, content atmosphere within the barn.

How are they doing this? How do they use the language/language techniques/structure to do this? How do key words/phrases show this?

- For example (add quotation) the use of …
- The adjective/alliteration/simile/metaphor …
- This suggests/implies/demonstrates/presents/ highlights/
- The writer uses … coupled with … to highlight …

For example, 'From outside came the clang of horseshoes on the playing peg and the shouts of men,'; the use of onomatopoeia creates a sense of excitement and movement. This is contrasted in the next line 'But in the barn it was quiet and humming and lazy and warm.' The repetition of and builds up the atmosphere of lazy content in the barn.

Why are they doing this? Why did they choose that language? Why might they want us to interpret it in different ways?

- This may suggest … Alternatively it may suggest …
- The writer wants to create a feeling of … Additionally it may suggest …

This may suggest that the men outside the barn are enjoying a happy and relaxed game while inside the barn there is potentially nothing that concerns the majority of the men. Alternatively, the 'clang' and 'shouts' outside suggest the active minds of the men whilst the 'quiet' and 'humming' of the barn hint that something more sinister might be taking place in there.

2. Useful vocabulary to analytical writing

To describe a writer's intentions:

- portrays
- depicts
- represents
- demonstrates

To give an example or quotation:

- for example
- for instance
- specifically when
- in particular

To add information:

- furthermore
- in addition
- also
- additionally

To compare and contrast:

- whereas
- in comparison
- similarly
- in contrast

To conclude:

- in conclusion
- in closing
- given these facts

3. WRITING ABOUT THE EFFECT

3a. How the reader feels:

Suspicion
Outrage
Disgust
Curious
Calm
Joyous
Anxiety
Irritation
Compassion
Respect
Horror
Concern

3b. Evaluative Vocabulary

Subtle
Pivotal
Significant
Compelling
Powerful
Dramatic
Challenging
Insignificant
Questionable
Crucial
Emphatic

4. LITERARY TECHNIQUES

4a. Language Techniques:

Superlative: an adjective showing the highest quality or degree
Hyperbole: A deliberate over exaggeration
Imagery: vivid description of a particular scene
Auditory imagery: vivid description of sounds
Tactile imagery: vivid description of tactile environment
Kinaesthetic imagery: vivid description of movement
Alliteration: words close to or next to each other that start with the same sound
Onomatopoeia: Words used to imitate sound
Personification: Non-human things that are given human characteristics
Simile: A comparison using like or as
Sibilance: repetition of the 's' sound

4b. Structural Techniques:

Contrast: the deliberate positioning of two or more objects/events/ characters who have distinctly different characteristics.
Listing: a number of connected items written one after the other to emphasise a particular quality.
Shifts in focus: the change of focus in or between paragraphs.
Zooming in and zooming out: the narrowing and the widening of narrative focus.
Cyclical structure: the end of the extract/novel returns to the same topic as the opening.
Chronological structure: arranged in order of time.
Shifts in tense: moves from past to present tense or vice versa.
Dialogue: the speech of a character indicted by speech marks.

ENGLISH (Writing)

1. FICTION WRITING

1a. Literary Terminology

1st person narrator	Written from the perspective of 'I'.
omniscient narrator	An all seeing, all wise narrator.
symbolism	The use of symbols to represent ideas or qualities.
motif	Repeated image or idea.
foreshadowing	A warning or indication of a future event.
allegory	A story that can be interpreted to reveal a hidden meaning, usually a political or moral one.
oxymoron	A figure of speech in which apparently contradictory terms appear in conjunction.
personification	The attribution of a personal nature or human characteristics to something non-human.
antithesis	Character or ideas that are the complete opposite of each other.
Extended metaphor	Comparison between two unlike things that continues throughout a series of sentences in a paragraph.
Pathetic fallacy	When the weather reflects the feelings of the character and/or mood of the piece.
alliteration	The occurrence of the same letter or sound at the beginning of adjacent or closely connected words.
In medias res	When a piece of writing starts in the middle of the action without exposition.
Semantic field	A group of words that share a similar theme or concept.

1b. 5 Part Story Structure for Narrative Writing

Exposition	Rising Action	Climax	Denouement	Resolution
This is where you outline your setting, introduce your main characters and the time in which your story is set.	The author puts the character into a complicated situation and forces them into an irreversible situation.	The story reaches a crucial moment. The tension builds reaching a peak.	The story explores the consequences of the climax. The tension starts to ease.	The story's central problem is finally resolved leaving the reader with a sense of completion.

1c. Ideas to structure a piece of Descriptive Writing

Drop: How can we drop the reader into the action
Shift: Will we shift in time, mood or place? Decide where you want to take your piece of writing.
Zoom in: What tiny detail shall we zoom in on and write a lot about?
Zoom out: Returning to the main scene what shall we focus on?
Leave: Write a one-line paragraph that finishes off your piece.

2. NON-FICTION WRITING

2a. Key Terminology

bias	An inclination or prejudice for or against one person or group.
humour	The quality of being amusing or comic.
tone	The choice of writing style the writer employs to convey specific feelings, emotions or attitudes.
empathy	The ability to understand and share the feelings of another.
anecdote	A short amusing or interesting story about a real incident or person.
irony	A state of affairs or an event that seems deliberately contrary to what one expects and is often amusing as a result.
sarcasm	The use of irony to mock or convey contempt.
Perspective	An attitude towards or way of regarding something: a point of view.
imperatives	Phrases used to give orders, commands, warning or instructions.
syntactic parallels	Repetition of sentences or clauses to emphasise a theme or idea.
Asyndetic list	Where there are no conjunctions between each item.
Syndetic list	Where there is always a conjunction between each item.
anaphora	The repetition of a word or phrase at the beginning of successive clauses.
Hypophora	A rhetorical device that involves asking a question and then quickly answering it.

2b. Forms of Non-Fiction Writing

Article	Letter	Essay	Speech	Leaflet
Clear/apt original title Strapline/ subheading Subheadings Introductory paragraph	Dear Sir/Madam or name Addresses Date Paragraphs Yours sincerely/ faithfully	An effective introduction and conclusion	Clear address to audience Rhetorical indicators that an audience is being addressed throughout A clear sign off	Clear/apt/original title Organisational devices such as inventive subheadings or boxes Bullet points

2c. Ideas to structure a piece of Non-Fiction Writing

Plan 1	Plan 2
Introduction outlining your point of view/argument Point 1 (your 1st reason for or against) Point 2 (your 2nd reason for or against) Point 3 (your 3rd reason for or against) Conclusion – briefly concluding your argument with a strong statement.	Introduction outlining your point of view/argument. Point 1 (how the issue affects you locally) Point 2 (how the issue affects the country) Point 3 (how the issue affects the world) Conclusion – briefly concluding your argument with a strong statement.

ENGLISH (Shakespeare's Tragedies)

1. Context and Plots

Playwright: Shakespeare (April 23rd 1564–April 23rd 1616)

Biography of Shakespeare

- Born in Stratford-upon-Avon on April 23rd 1564.
- Married Anne Hathaway in 1582.
- Left his family around 1590 to move to London to become an actor and playwright.
- Highly successful, he established himself as the most popular playwright of his day.
- Part-owner of The Globe Theatre in London.
- His first theatre group was called Lord Chamberlain's Men, later changed to the King's Men (1603) under the patronage of King James I.
- A prolific writer who is said to have written at least thirty-seven plays, as well as narrative poems and a collection of sonnets.
- Died on his birthday in Stratford-upon-Avon in 1616.

King Lear:
Derived from the myth *Leir of Britain*, *King Lear* is a Shakespearean tragedy first performed on St Stephen's Day 1606. It tells the parallel stories of Lear's betrayal by two of his daughters and subsequent descent into madness and of his kinsman's the Earl of Gloucester's betrayal by his illegitimate son and subsequent rescue by his legitimate son.

Romeo and Juliet:
An age-old vendetta between two powerful families erupts into bloodshed. A group of masked Montagues risk further conflict by gate-crashing a Capulet party. A young lovesick Romeo Montague falls instantly in love with Juliet Capulet, who is due to marry her father's choice, the County Paris. With the help of Juliet's nurse, the women arrange for the couple to marry the next day, but Romeo's attempt to halt a street fight leads to the death of Juliet's own cousin, Tybalt, for which Romeo is banished. In a desperate attempt to be reunited with Romeo, Juliet follows the Friar's plot and fakes her own death. The message fails to reach Romeo, and believing Juliet dead, he takes his life in her tomb. Juliet wakes to find Romeo's corpse beside her and kills herself. The grieving family agree to end their feud.

Hamlet:
The ghost of the King of Denmark tells his son Hamlet to avenge his murder by killing the new king, Hamlet's uncle. Hamlet feigns madness, contemplates life and death, and seeks revenge. The play ends with a duel, during which the King, Queen, Hamlet's opponent and Hamlet himself are all killed.

Macbeth:
Three witches tell the Scottish general Macbeth that he will be King of Scotland. Encouraged by his wife, Macbeth kills the king, becomes the new king, and kills more people out of paranoia. Civil war erupts to overthrow Macbeth, resulting in more death.

Julius Caesar:
Jealous conspirators convince Caesar's friend Brutus to join their assassination plot against Caesar. To stop Caesar from gaining too much power, Brutus and the conspirators kill him on the Ides of March. Mark Antony drives the conspirators out of Rome and fights them in a battle. Brutus and his friend Cassius lose and kill themselves, leaving Antony to rule in Rome.

ENGLISH (Shakespeare's Tragedies)

2. Key Characters

King Lear: Lear – The elderly King of Britain. Lear had planned to divide his kingdom between his three daughters but ends up giving it to just two after they profess their great love of him.

Cordelia – Lear's favourite daughter. Unable to put her love for her father into words, Cordelia is disinherited then married to the King of France.

Regan and Goneril: Lear's other daughters. They earn his favour by exaggeratedly professing their love for him.

Romeo: well-respected Montague. Falls in love with Juliet the daughter of his enemy Capulet.

Juliet: daughter of Capulet. Defies family and gender expectations to marry the son of Montague.

Hamlet: Prince of Denmark, son of the recently deceased King Hamlet and nephew of King Claudius, his father's brother and successor.

Macbeth: is a Scottish general who has been fighting for King Duncan. Three witches tell Macbeth that he will become King of Scotland.

Lady Macbeth: wife of Macbeth, convinces him to kill King Duncan, is overcome with guilt and commits suicide.

Three Witches: also known as the Weird Sisters or Wayward Sisters. They hold a striking resemblance to the three Fates of classical mythology, and are, perhaps, intended as a twisted version of the white-robed incarnations of destiny.

Julius Ceasar: was a Roman general and statesman who played a critical role in the events that led to the demise of the Roman Republic.

3. Key Terminology

Tragedy Play	Tragedy – the classification of drama in which a noble protagonist, who is flawed in some way, is placed in a stressful heightened situation. The plots of Shakespearean tragedy focus on the reversal of fortune of the central character(s) that leads to their ruin and ultimately, death.
Literary Conventions	Defining features of particular literary genres, such as novel, short story, ballad, sonnet and play.
soliloquy	A speech or passage in a drama when a character on stage speaks to himself/herself or the audience, expressing their inner thoughts and feelings.
aside	A remark or passage in a play that is intended to be heard by the audience but is supposed to be unheard by the other characters on the stage.
blank verse	Unrhymed lines written in a poetic meter and usually written in iambic pentameter (see below).
rhyming couplets	Two successive lines of verse of which the final words rhyme with another.
iambic pentameter	A line of verse with five metrical feet, each consisting of one short (or unstressed) syllable followed by one long (or stressed) syllable, with the accent (or emphasis) placed on the second syllable.
Tragic Hero	A **tragic hero** is a character in a dramatic **tragedy** who has virtuous and sympathetic traits but ultimately meets with suffering or defeat.
Divine Right of Kings	In European history, a political doctrine in defence of monarchical absolutism, which asserted that **kings** derived their authority from God and could not therefore be held accountable for their actions by any earthly authority such as a parliament.

4. Key Vocabulary

	Definition
Usurp	To take and keep (power) in a forceful way
Wield	To have and use
Betray	To hurt someone who trusts you
Conspirator	A person involved in a secret plan to do something harmful or illegal
Protagonist	Main character
Antagonist	Villain
Fate	The power that is believed to control everything that happens and that cannot be stopped or changed
Patriarchy	A society, system or country that is ruled or controlled by men
Archetypal	A perfect example of…
Tragedy	A serious play with a sad ending, especially one in which the main character dies; plays of this type
Grudge	A feeling of anger or dislike towards somebody because of something bad they have done to you in the past
Primogeniture	The law that decreed that estates be passed directly from a father to his first-born (legitimate) son
ambition	Something that you want to do or achieve very much
superstition	The belief that particular events happen in a way that cannot be explained by reason or science; the belief that particular events bring good or bad luck

ENGLISH (*The Crucible*, A 20th Century Play)

1. Context

Playwright: Arthur Miller (1915–2005)
Nationality: American
Other notable works: *'All My Sons', 'Death of a Salesman', 'A View from a Bridge'*
Dates: written in 1950–1952, performed 1952, published 1953
Era: 1950s at the time of The Cold War
Genre: Tragedy, tragic drama, American drama, realist drama.
Set: Salem, Massachusetts, USA 1692 (17th Century)
Structure: each of the four acts ends with a climax (unusual structure)

Playwright biography:

- Born in 1915 in New York City.
- Studied journalism before becoming a very successful writer.
- Famously married to the Hollywood actress Marilyn Monroe.
- Winner of many accolades including: Pulitzer Prize, seven Tony Awards, an Olivier and the John F Kennedy Lifetime Achievement Award.

Social, Historical and Literary context:

The Crucible

- The play was first performed in 1953 at the height of the McCarthy trials.
- Considered an attack on the anti-Communist McCarthyism.

The Salem Witch Trials (1692)

- The play is a fictionalised account of the famous 17th Century witch trials.
- Hysteria began when a group of girls fell ill and it could not be explained why.
- In a Puritan society, anything that could not be explained was said to be the work of the devil.
- Villagers then began to accuse each other of witchcraft, which then extended to people with grudges and jealousies.
- Many made accusations as revenge for petty things.
- Within a few weeks, dozens of people were in jail.
- By the end of the trials, twenty innocent men and women were hanged and hundreds were convicted.

McCarthyism (1947–1956)

- An American Senator called Joseph McCarthy rose to power by stirring up the nation into becoming terrified of Communists.
- Stemmed from the fear and tension between the U.S. and the Soviet Union during The Cold War.
- In 1947 he ordered all employees of the civil service to be screened for 'loyalty' to check they did not have Communist sympathies.
- Anyone named as a Communist was placed on "Blacklists" that prevented them from getting work.
- The McCarthy hearings (also known as McCarthy trials) ran from April to June 1954.
- Many non-Communists confessed to being Communists and falsely named others as Communists in order to escape punishment.
- Miller was brought before Congress in 1956 and convicted of contempt of Congress for refusing to cooperate (his conviction was later overturned).
- Eventually McCarthy was condemned and the hysteria died down, but the damage caused to the lives of hundreds of people was already done.

2. Key Characters

Abigail Williams: the 17-year-old niece of Reverend Parris. She is an orphan and a former servant to the Proctors.
Reverend Parris: the minister of Salem, Betty's father and Abigail's uncle. Tituba is his slave.
Betty Parris: Reverend Parris's ten year old daughter. Cousin to Abigail Williams.
John Proctor: a farmer, and the husband of Elizabeth. He is well respected in the local community and values his reputation.
Elizabeth Proctor: loyal wife to John Proctor. She fires Abigail Williams as her servant before the play begins. Mary Warren is her servant during the events of the play.
Rev John Hale: minister in the nearby Massachusetts town of Beverly, and an expert in identifying witchcraft.
Thomas Putnam: an influential citizen but not well liked in the community.
Ann Putman: the wife of Thomas Putnam.
Rebecca Nurse: the wife of Francis Nurse and is well respected in the community.
Francis Nurse: an influential citizen. He is well liked in the community but is enemies with Thomas and Ann Putnam.
Giles Corey: an elderly member of the community. He is a farmer and is well known for filing lawsuits.
Tituba: Rev. Parris' slave from Barbados.
Mary Warren: naïve and lonely servant of the Proctors.
Mercy Lewis: eighteen year-old servant of Thomas and Ann Putnam.
Susanna Walcott: Abigail William's friend.
Deputy Governor Danforth: a Deputy governor of Massachusetts who comes to Salem to preside over the witch trials.
Judge Hathorne: a bitter, remorseless Salem judge.
Ezekiel Cheever: a court appointed official.
Marshall Herrick: a court appointed official.

ENGLISH (*The Crucible*, A 20th Century Play)

3. Key Terminology

Tragedy	A play ending with the suffering and death of the main character.
Literary conventions	Defining features of particular genres such as novel, short story, ballad, sonnet and play.
Tragic hero	A literary character who makes a judgment error that inevitably leads to his/her own destruction.
Hubris	A personality trait where someone has excessive pride or self-confidence.
Hamartia	The fatal flaw of a tragic hero.
Peripeteia	A sudden or unexpected reversal of circumstances, especially in a literary work like a tragedy.
Anagnorisis	The moment in a tragedy where the protagonist makes a critical discovery about themselves, another or a situation, leading to the resolution of the narrative.
Catharsis	The purging of the emotions of pity and fear that are aroused in the viewer of tragedy.
Protagonist	The central character or leading figure in a poem, narrative, novel or any other story. Sometimes can also be referred to as a "hero" by the audience or readers.
Antagonist	A character who actively opposes or is hostile to someone or something. Also known as an adversary.
Plot device	An object or character in the story whose purpose is purely to drive the plot, maintain its flow or resolve situations within it.
Minor character	A character in a narrative that is not the focus of the primary storyline.
Foil Character	A character who contrasts with another character to highlight qualities of the other character.
Motif	A dominant or recurring idea in an artistic work that is used to reinforce the theme.
Theme:	An idea that is dominant or recurs in a piece of literature.
Characterisation	A narrative device in which in an author builds up a character in a narrative.
Allegory	An allegory in literature is an extended metaphor whereby characters, place or events are used to put forward a message about real life events or issues. (The Salem witch trials in the play are an allegory for the McCarthy witch hunt which took place in America in the 20th Century.)
Symbolism	The use of symbols to express ideas or qualities.
Stage directions	Instructions written into the script of a play, indicating stage actions, movements of performers, or production requirements, e.g. set design or staging.
Exposition	Refers to part of the story used to introduce background information about events, settings, characters etc. to the reader.
Climax	The point of highest tension in a narrative or scene.

4. Key Vocabulary

	Definition
hysteria	Exaggerated or uncontrollable emotion or excitement.
hypocrisy	The practise of engaging in the same behaviour or activity for which one criticise or condemns another.
ideology	A set of beliefs and ideas on which people, parties, groups, or countries base their actions and decisions.
integrity	The quality of being honest and having strong moral principles.
patriarchy	A system of society or government in which men hold the power and women are largely excluded from it.
theocracy	A type of government where the rulers believe they are guided by God.
witch-hunt	A search for people labelled "witches" or evidence of witchcraft, often involving moral panic or mass hysteria.
witch-hunt *(modern meaning)*	In modern times, a 'witch-hunt' describes the attempt to find and punish a particular group of people who are being blamed for something, often because of their opinions or beliefs, not because they have actually done anything wrong.
persecution	Hostility and ill-treatment, especially because of race or political or religious beliefs; oppression.
justice	The legal or philosophical theory that fairness is administered.
subjugate	To bring under domination or control.
Puritan	A member of a group of English Protestants of the late 16th and 17th Centuries. They thought the Reformation of the Church under Elizabeth I as incomplete and wanted to simplify and regulate forms of worship.
Puritanical	Having or displaying a very strict moral attitude.
communism	A political system where all property is owned by the community and each person contributes and receives according to their ability and needs.
Social commentary	The expression of one's point of view or feelings towards society, usually through literature.
The Other	An individual or a group seen by a dominant group as not belonging.

FOOD PREPARATION and NUTRITION

Introduction

The importance of preparing, storing and cooking food safely to prevent spoilage and contamination that could cause food poisoning.

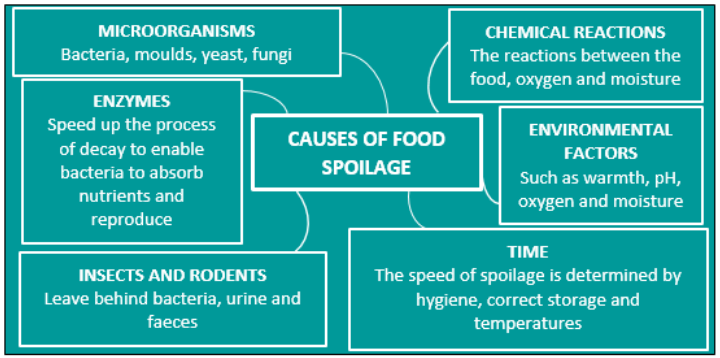
Keywords

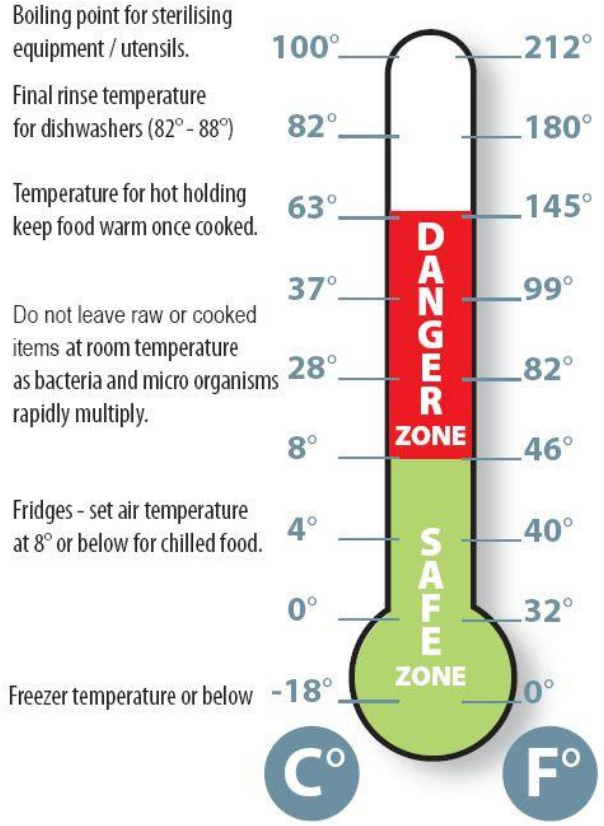
1. Use by date
2. Best before date
3. Frozen food
4. Chilled food

Key Points

1. Bacteria is found everywhere and needs the right temperature, warmth, time, nutrients, pH level and oxygen to grow and multiply.
2. Microorganisms (bacteria) are used to make a wide range of food products.
3. Bacteria are used to make cheese, yogurt and bread.
4. The most important bacteria in food manufacturing are *Lactobacillus* species.
5. Bacterial contamination is the presence of harmful bacteria in our food, which can lead to food poisoning and illness.
6. As a food handler, you must do everything possible to prevent this contamination.

Key Points





Exam Questions

- What are the different sources of bacterial contamination?
- Name three bacteria responsible for food poisoning.
- List the four conditions needed for rapid bacterial growth.
- What are the main symptoms of food poisoning?
- What are the food safety principles when buying and storing food?
- What temperature should a fridge be?
- What temperature should a freezer be?
- What is the danger zone temperature?

Stretch

Why is the ever-increasing reliance on processed foods a concern regarding food safety?

Further Links

www.foodsafety.com

https://youtu.be/flxmB8NKMzE

FOOD PREPARATION AND NUTRITION

Keywords

Enzymic Browning	Aeration
Creaming	Foam
Denaturation	pH level

Key Points

Proteins: Determine the texture of food. Proteins are shaped like coils that react to certain items.

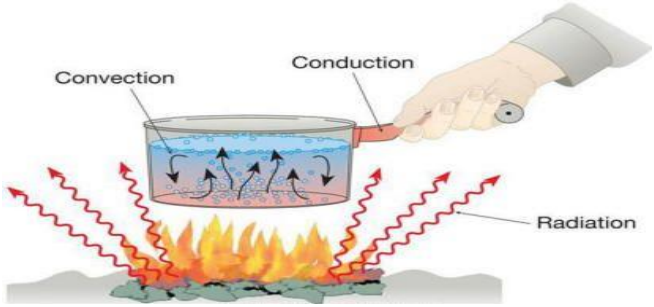
- Heat, salt and acids make coils unwind, producing a soft texture and loose bonds.
- Tight bonds result in coagulation, forming a denser texture (like custard).
- Kneading proteins produces tight bonds (bread dough).
- Coagulation causes proteins to lose water.

Carbohydrates – Starch: Breads, pasta, grains, starchy vegetables, fruits. Starch molecules soften in moisture. Absorbing moisture makes them swell, causing liquids to thicken. Starch cells stick to one another and trap moisture.

Carbohydrates – Sugar: Water molecules are attracted to sugar so the presence of significant sugar in a cake will help capture and hold on to liquid. This results in a more moist cake.

Leavening: When sugar is creamed with butter, the sugar crystals help drive air into the mixture.

Key Points



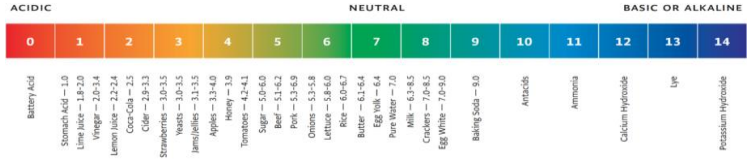
How convection works:

- Water coming to a boil and circulating in the pot.
- Running cold water over frozen food, which transfers heat into the food to thaw it more quickly.
- Room temperature air moving around frozen food to thaw it.

How conduction works:

- The transfer of heat from one object to another by direct contact.
- Touching a burner on a stove and being burned.
- Pancakes; grilling steak, chicken breasts or pork chops.
- Using iced water to blanch vegetables after steaming to keep them from losing their colour.

Radiation: Radiation is the process where heat and light waves strike and penetrate your food through electromagnetic energy. There is no direct contact between the heat source and the cooking food.



Acids and alkalis: pH range measures level of acid / alkali in food. pH scale is 1–14: 1 being the most acidic, 7 is neutral (water). 1–6 acid; 8–14 alkaline.

Exam Questions

- Give three ways in which proteins can be denatured.
- Explain how starch can be used to thicken sauces.
- What does the term aeration mean?
- Name the process that makes biscuits browner and crispier when they are baked.
- What is the name of the protein that gives bread dough its elasticity?
- Explain how to prevent gluten molecules from forming long strands.
- Explain why margarine has more plasticity than lard.

Stretch

Explain how foam formation happens in whisked egg whites.

Explain how emulsifiers can be used to keep oil and water in a stable emulsion.

Further Links

https://www.stem.org.uk/gcse-food-preparation
https://www.ifst.org/lovefoodlovescience

Vocab Set 1 – problems in town

1) On ne peut pas	You can not
2) Se bronzer	get a tan
3) nager	swim
4) Trouver un parking	find a car park
5) Il n'y a pas de	there is/are not any
6) Espaces verts	green spaces
7) plage	beach
8) piscine	swimming pool
9) Bruyant	noisy
10) sale	dirty

Vocab Set 2 – travelling

1) Partir à l'etranger	to travel abroad
2) Faire un tour du monde	to travel around the world
3) Aller aux Etats-unis	to go to the US
4) déménager	to move house
5) voyager	travelling
6) Travailler à l'etranger	working abroad
7) Habiter à l'etranger	living abroad
8) Partir en Asie	to travel to Asia
9) Partir à la campagne	to travel to the countryside
10) Partir à la montagne	to travel to the mountains

Vocab Set 3 – (revision) languages

1) l'anglais	English
2) Le français	French
3) l'espagnol	Spanish
4) l'allemand	German
5) Le turc	Turkish
6) Le polonais	Polish
7) Le gallois	Welsh
8) À la plage	to/at the beach
9) À la piscine	to/at the pool
10) Aux magasins	to/at the shops

Model Answer – describe the problems in your town and compare with a town abroad.

Là, oú j'habite, il y a pas mal de problèmes!	Where I live, there are quite a few problems!
Par exemple on ne peut pas se bronzer car il n'y a pas de plage.	For example, you can't get a tan because there is no beach.
Et il y a les déchets partout!	And there is litter everywhere!
Donc je rêve de partir à l'etranger.	So I dream of going abroad.
En outre, il serait facile pour moi car je parle le français!	Furthermore, it would be easy for me because I speak French!
J'ai entendu parler d'une ville au Canada qui s'appelle Montréal	I've heard about a town in Canada that is called Montréal
Où les habitants parlent l'anglais et le français.	Where the inhabitants speak English and French.
Ce que me plait, c'est qu'en été, il y a plusieurs festivals de musique.	What I like, is that in summer, there are lots of music festivals
En hiver, quand il neige, beaucoup de gens se rendent à la campagne	In winter, when it snows, lots of people head to the countryside
Pour qu'on puisse faire de la luge.	So that they can do some tobogganing
Ceux qui préfèrent regarder, peuvent aller voir un match de hockey sur glace.	Those who prefer to watch, can go to see an ice hockey match.
Le seul problème? Il y a trop de circulation.	The only problem? There is too much traffic.
De plus, il y a souvent beaucoup de vent.	Plus, there is often lots of wind.

Vocab Set 4 – weather

1) Il fait chaud	It's hot
2) Il fait froid	It's cold
3) Il fait du soleil	It's sunny
4) Il pleut	It's rainy
5) Il neige	It's snowy
6) Il y a du vent	It's windy
7) En automne	In autumn
8) En hiver	In winter
9) en été	In summer
10) Au printemps	In spring

Vocab Set 5 – activities

1) Faire de la luge	do some tobogganing
2) Faire du ski alpin	do some downhill ski-ing
3) Faire de la voile	do some sailing
4) Faire de la planche à voile	do some windsurfing
5) Faire de l'equitation	do some horseriding
6) Faire de la natation	do some swimming
7) Participer à un défilé	take part in a parade
8) Regarder les feux d'artifice	watch the fireworks
9) Voir un match	watch a match
10) Assister à un festival	take part in a festival

AIM HIGH PHRASES

1) Qui s'appelle…	Who is called…
2) Il faut que je sois honnête,	I have to be honest,
3) Pour qu'on puisse	So that we can…
4) Il serait mieux si j'étais	It would be better if I was…
5) Après avoir regardé	After having watched…
6) Ce que me plait, c'est…	What I like is …

Vocab Set 1 – (revision) travelling

1) Partir à l'etranger	to travel abroad
2) Faire un tour du monde	to travel around the world
3) Aller aux Etats-unis	to go to the US
4) déménager	to move house
5) voyager	travelling
6) Travailler à l'etranger	working abroad
7) Habiter à l'etranger	living abroad
8) Partir en Asie	to travel to Asia
9) Partir à la campagne	to travel to the countryside
10) Partir à la montagne	to travel to the mountains

Vocab Set 2 – (revision) languages

1) l'anglais	English
2) Le français	French
3) l'espagnol	Spanish
4) l'allemand	German
5) Le turc	Turkish
6) Le polonais	Polish
7) Le gallois	Welsh
8) À la plage	to/at the beach
9) À la piscine	to/at the pool
10) Aux magasins	to/at the shops

Vocab Set 3 – problems in town

1) chômage	unemployment
2) déchets	litter
3) crime	crime
4) circulation	traffic
5) bruit	noise
6) Poids lourds	HGVs (big vans)
7) sans-abris	homeless people
8) SDF (un sans domicile fixe)	homeless person
9) Mouettes	seagulls
10) drogues	drugs

Model Answer – would you rather live at home or abroad? What is unemployment like where you live? What are the issues for homeless people?

Il faut que je sois honnête, même si j'aime ma ville,	I have to be honest, even though I like my town,
J'aimerais déménager à l'etranger	I would like to move house to abroad
Pour que je puisse améliorer mon français!	So that I can improve my French!
Il y a beaucoup de chômage dans ma ville	There's a lot of unemployment in my town
Donc il serait mieux si je pouvais chercher un emploi à l'etranger	So it would be better if I could look for a job abroad
Ce que me rend triste, c'est que	What makes me sad is that
Dans ma rue, il y a beaucoup de sans-abris	In my street, there are lots of homeless people
Et en hiver il fait très froid donc c'est dangereux	And in winter it's very cold so it's dangerous
J'ai lancé une pétition en ligne pour ouvrir une soupe populaire	I started a petition online to open a soup kitchen
J'ai vendu mes vieux jeux en ligne	I sold my old toys online
Et j'ai écrit un article dans notre journal local	And I wrote an article in our local paper
Pour sensibiliser le public.	In order to raise awareness.
Je pense que la participation aux projets locaux est importante pour les jeunes.	I think that participating in local projects is important for young people.

Vocab Set 4 – (revision) weather

1) Il fait chaud	It's hot
2) Il fait froid	It's cold
3) Il fait du soleil	It's sunny
4) Il pleut	It's rainy
5) Il neige	It's snowy
6) Il y a du vent	It's windy
7) En automne	In autumn
8) En hiver	In winter
9) en été	In summer
10) Au printemps	In spring

Vocab Set 5 – past tense

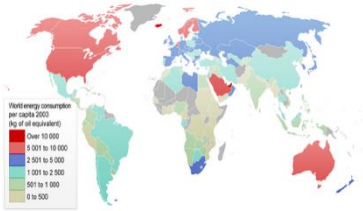
1) J'ai lancé	I started/launched
2) j'ai vendu	I sold
3) J'ai écrit	I wrote
4) j'ai participé	I participated
5) j'ai fait	I did / made
6) Je suis allé	I went
7) j'avais	I had
8) j'étais	I was
9) c'était	It was
10) utile	useful

AIM HIGH PHRASES

1) Qui s'appelle…	Who is called…
2) Il faut que je sois honnête,	I have to be honest,
3) Pour qu'on puisse	So that we can…
4) Il serait mieux si j'étais	It would be better if I was…
5) Après avoir regardé	After having watched…
6) Ce que me plait, c'est…	What I like is …

GEOGRAPHY

Which countries consume the most energy and what are the impacts of this?



1. The map shows that energy consumption is **unevenly** distributed, with the **highest rates** of consumption taking place in the **developed countries.** The **lowest rates** of consumption are in **developing countries**, for example the countries of **central Africa**.
2. Energy is important for **industry, transport and homes**.
3. **Social well-being** will be **negatively impacted without** energy as people will not be able to heat homes or turn lights on during the night.
4. If you do not have enough energy, **economic well-being** in the country can be **negatively impacted**. This is because industries cannot operate, meaning there are fewer jobs which could stop the country from developing. Furthermore, people cannot travel to jobs in other places, as the lack of energy makes travelling difficult.

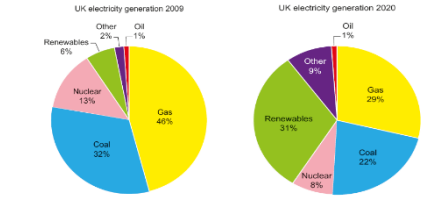
Why is energy consumption uneven?

Some countries do not have energy reserves; whilst others do not have the technology to exploit their resources.
For some countries the only way to access energy resources is to **import** them, which is **expensive**.
Consumption of resources therefore **depends on wealth** and their **availability**.
Developed countries and **emerging countries** either have their **own supply** of energy resources or can afford to **import**, therefore, consumption is high, and quality of life is high.
However, in **developing countries** they **cannot afford** to **exploit** their resources or **import** from other countries, so consumption is still relatively low, resulting in a poorer quality of life.

Consumption of energy is growing world-wide:

1. Generally, the **consumption** of energy is **growing world-wide**.
2. Most countries are developing and becoming richer.
3. As the countries become more developed consumption increases.
4. Non-renewable energy consumption is still increasing rapidly world-wide. The impact of this can be seen on the next page.

How is the UK's energy mix changing?



Interpretation of the pie charts:
As can be seen from the pie charts, the UK's energy mix is **changing**.
From 2009-2020 there is a **decrease** in the use of **coal and gas** and a significant **increase in renewable energies** and nuclear energy.

Why is the UK's energy mix changing?
Coal and gas are beginning to **run out**, which means the government has had to look for alternative methods of getting energy.
Due to the reduced amount of coal and gas, **extracting** these non-renewable resources is much more **difficult**. This means the cost of these have gone up, meaning they are becoming too **expensive** for people.

Non-renewable energy:

Non-renewable energy sources are **finite**, which means they will **run out** one day. This energy has normally been produced by the decomposition (breaking down) of fossilised plants and animals. This process takes millions of years. Most non-renewables are referred to as fossil fuels and burning them produces **greenhouse gases** (CO_2).

Types:
The three main non-renewable energy sources are **oil, gas and coal**. However, **nuclear energy** is also included as a non-renewable. Fracking is a new method of extracting gas from the ground.

Opportunities:

1. These energies have been used for a long time, so they are **efficient** as technology has been made to maximise their energy output. This means they produce a **large amount of energy**, using a small amount of fuel.
2. **Oil** can be turned into petrol and diesel. These are the most **effective** way to power **transport** efficiently.
3. **It is easy to transport** this type of energy. For example, gas pipes from Russia and Scandinavia deliver gas to the UK. Fuel tankers can transport non-renewable energy sources, meaning they are easy to import.
4. A significant amount of **jobs** created in the extraction of these resources. This produces huge amounts of taxes for the local area e.g. offshore oil and gas, off the coast of Aberdeen in Scotland.

Challenges:

1. The cost of **extracting** fossil fuels can be **expensive**. As the reserves run out, extraction becomes more difficult, which means costs increase.
2. The burning of **fossil fuels** produces **CO_2** and greenhouse gases that cause **climate change**.
3. Accidents such as **oil spills** or **nuclear disasters** can leak toxic chemicals into water sources, soils and the atmosphere, **killing animals** and posing a significant **risk to human health**.
4. **Nuclear waste** is **expensive** to **dispose** of as it is highly dangerous. This pushes up the cost of producing electricity.
5. The UK is **reliant** on **importing** much of its gas and oil from places like Russia. This can be an issue when the countries have disagreements, leading to some believing that **Russia could 'turn off our lights'**.
6. **Reducing coal mining and oil/ gas** extraction will lead to the **loss of jobs**, and an increase in unemployment in certain areas.

Renewable energy:

1. These are **infinite** resources, which means they will **not run out.**
2. The energy is **sustainable and is replenished**.
3. This type of energy production does not require fossil fuels, so therefore **greenhouse gases are not produced**.

Types:
The most commonly used renewables are **wind, solar,** biomass (burning certain plants e.g. oil rape seed) and **hydroelectric power** (produced by water turning turbines in a dam). Tidal energy is also used at some coastal locations, where there is large tidal movement.

Opportunities:

1. They will not run-out, meaning countries such as the UK can be **self-sufficient** and will not need to rely on imports from other countries.
2. **No greenhouse gases** are produced during operation, meaning a reduced impact on climate change.
3. Once they have been built set up **energy bills will come down** in the long term because they require little upkeep.
4. **New jobs** can be created in industries producing these renewable technologies, reducing unemployment in the UK.

Challenges:
Both wind and solar energy are **unreliable**, meaning that little energy is produced during certain times, e.g. on a calm day or at night. This means that countries will still need to use some fossil fuels (non-renewables).
Wind turbines are said to be **ugly** and this can create **NIMBYism**, as people are worried that the value of their property will decrease. If they are placed offshore at the coasts, people worry that tourist numbers will reduce meaning lost income for hotels etc.
The **initial cost** of installing some renewables can be **expensive**, meaning a short-term increase in energy bills.
Wind turbines can be **dangerous for animals**, for example they can impact migrating birds. Birds and bats have been killed by the rotating blades.
Hydro-electric power requires the damming of a river and the creation of a reservoir. The reservoir can displace communities.

GEOGRAPHY (Energy)

Background:
1. The consumption and production of energy is not evenly distributed. ***(A)***
2. Many factors can influence energy use, including the wealth of the country and availability. ***(A)***
3. Energy consumption impacts quality of life. ***(B)***
4. There are two main sources of energy, these can be classified as non-renewable and renewable. ***(C, E)***
5. The energy mix world-wide has shifted in recent years, with a decline in coal and oil, and a growth in renewables and nuclear. ***(D, E)***
6. Fracking for gas is also growing world-wide. ***(H)***

A	**Factors affecting the energy mix *(6)***
Population	More people means more energy needed.
Wealth	Greater wealth leads to a greater energy demand.
Availability	If a country has it's own natural resources, e.g. coal, oil, wind etc.
Consumption	The amount of energy or power used.
Emissions	The by-product given off by burning an energy source, e.g. CO_2.
NIMBYism	Abbreviation for 'not in my backyard.'

B.	**Importance of energy *(4)***
Social well being	Normally refers to quality of life, e.g. happiness.
Economic well being	Having present and future financial security.
Energy dependence	To rely on other countries for your energy supply, e.g. to import oil.
Energy security	To be relatively self-sufficient in regards to your energy supply.

C.	**Types of energy *(3)***
Renewable	Energy, which is infinite, sustainable and is easily replenished.
Non-renewable	Energy, which is finite, is not sustainable and takes a long time to replenish.
Finite	Something that will run out and come to an end.

D.	**Nuclear energy *(3)***
What it is:	This is non-renewable and comes from uranium.
Positive	1. Small amounts of uranium produces lots of energy.
Negative *(2)*	1. Nuclear waste is toxic and must be stored for hundreds of years. 2. Nuclear accidents can occur, which is a risk to human health.

E.		**The impacts of energy sources**	
		Advantages	**Disadvantages**
Non-renewables *(3)*	Coal	1. Efficient, cheap and reliable.	1. Creates carbon dioxide. 2. Finite.
	Oil	1. Easy to transport. 2. Efficient.	1. Oil spills. 2. We must import this from other countries.
	Gas	1. Supplies available in the North Sea and from fracking. 2. Jobs in extraction created.	1. Finite. 2. Carbon dioxide produced.
Renewables *(3)*	Wind	1. Sustainable and will not run out. 2. Jobs created in the manufacture and installation of these.	1. Noise and visual pollution. 2. Bird strikes.
	Solar	1. Easy to install on houses. 2. Jobs created in the manufacture and installation of these.	1. Unreliable, e.g. if it is not sunny. 2. The panels are constructed from toxic materials.
	Hydro-electric	1. One of the most reliable non-renewables. 2. Reservoirs create tourism and also provide clean water.	1. Vegetation / forests cleared for reservoir creation. 2. Farmland and settlements flooded to create reservoirs.

F.	**Fracking**
Fracking	Gas trapped in shale rock is released by pumping water and sand into the ground, which widens cracks in the ground, allowing the gas to escape.

Positive *(3)*:	**Negative *(4)*:**
1. Blackpool council could make £1.7m per year. 2. Many jobs would be created in the north west. 3. The UK would become less dependent on importing energy from other countries.	1. Small earthquakes could damage homes. 2. Huge areas of countryside destroyed. 3. Noise and air pollution would be created from the heavy machinery. 4. Underground water could become contaminated.

Core questions

Was für Probleme gibt es in deiner Stadt?	What kinds of problems are there in your town?
Was für Probleme gibt es in deiner Gegend?	What kinds of problems are there in your region?
Was sind die Vorteile und die Nachteile deiner Gegend?	What are the pros and cons of your town?
Wenn du die Wahl hättest, wo würdest du gern wohnen?	Where would you like to live if you could choose?
Wie findest du Berlin? Ist sie besser oder schlechter als deine Stadt?	How do you find Berlin? Is it better or worse than your town?
Gibt es viele Obdachloser in deiner Stadt?	Are there many homeless people in your town?
Was soll man machen, um Obdachloser in deiner Stadt zu helfen?	What should people do, in order to help homeless people in your town?

AIM HIGH PHRASES

Um nach Hayling Insel **zu** gehen, muss man mit dem Boot fahren.	In order to get to Hayling Island, you must take a boat.
Es wäre besser, wenn Touristen umweltfreundlicher **wären.**	It would be better if tourists were more environmentally friendly.
Eine Stadt, **die** ich gut **kenne**, ist Leipzig.	A town that I know well is Leipzig.
Es gibt einen großen Park, **wo** man verschiedene Aktivitäten **tun kann**.	There is a big park, where you can do a variety of activities.
Wenn man mich fragt, finde ich mein Wohnort zu ruhig.	To be honest, I find my hometown too quiet.

Model Answer – describe the problems in your town and compare with a town abroad.

Heutzutage gibt es viele Probleme in meiner Stadt, die wir lösen müssen. Es gibt Luft- und Wasserverschmutzung, die sehr gefährlich sind.	Nowadays, there are many problems in my town that need to be solved. There is both air and water pollution, which is very dangerous.
Zum Beispiel gibt es zu vielen Müll, weil die Einwohner meiner Stadt nie recyceln – das ist schade!	For example, there is too much rubbish, because people who live there never recycle – it's a shame!
An der anderen Seite gibt es auch Aspekte, die positiv sind. Zum Beispiel sagt meine Mutter, dass es viel für Touristen gibt.	On the other hand there are also aspects that are positive. For example, my mum says that there is a lot for tourists.
Als ich jünger war, gab es keine Verschmutzung in meiner Gegend, weil die Luft sauberer war und keine Autos fahren dürften.	When I was younger there was no pollution in my region, because the air was cleaner and cars weren't allowed.
In der Zukunft würde ich gern nach Berlin gehen, weil es viele Geschäfte, wo man viele Klamotten kaufen kann, gibt – Einkaufen macht mich süchtig!	In the future would like to go to Berlin because there are many shops, where I can buy clothes and I'm addicted to shopping!
Leider gibt es auch viele Obdachloser in meiner Stadt, die kein Geld und Klamotten haben und ich mache mir Sorge darüber!	Unfortunately, there are also many homeless people in my town, who don't have any money nor clothes and I'm concerned about it!
Ich hoffe, dass es in der Zukunft weniger Leute geben wird, die auf der Straße schalfen.	I hope that in the future there will be less people who sleep on the streets.
Mein Onkel sagt, dass jemand ein bisschen machen soll, um die Armut zu reduzieren. Zum Beispiel soll man Geld spenden und freiwillige in Hilfsorganisationen arbeiten.	My uncle says that everyone should do a little bit in order to reduce poverty. For example, you should donate money and volunteering for charities.
Wenn ich Präsident wäre, würde ich das Geld benutzen, um die Leute, die kämpfen, zu helfen.	If I were the president, I would use money to help people who are struggling.

Vocabulary

Ich wohne in einem Vorort,	I live in a Suburb
wo es eine Beckerei gibt	there's a bakery.
wo ich überall zu Fuß hinkomme	I can get everywhere on foot
wo ich mich nicht langweile	I don't get bored
wo es zu viel Verkehr gibt	there's too much traffic
in der Umgebung	in the neighbourhood
vielseitiges Kulturangebot	a varied cultural offer
außerhalb der Stadt gibt es…	outside the city, there is…
Fußgängerzone	pedestrian areas
Man muss Autos in der Innerstadt verbieten	They should ban cars from the city centre
Gebäude	buildings
Wohnungen	apartments
das Land	the countryside
Fahrradwege	cycle paths
Armut	poverty
betteln	to beg
spenden	to donate

Revision of last term's paragraph

Wenn man mich fragt, bin ich sehr stolz darauf, dass ich eine andere Sprache kenne.	Honestly, I'm so proud that I know another language.
Mein Vater sagt, dass Deutsch wird mich helfen, eine gute Arbeit Ausland zu finden.	My Dad says that German is going to help me find a good job abroad.
Jedoch muss man eine Fremdsprache auch wissen, um einen guten Beruf in England zu finden.	However, you must know a foreign language to find a good job in England as well.
Zum Beispiel habe ich einen Freund, dessen Vater vier Sprachen spricht und in der Botschaft arbeitet.	For example, I have a friend, whose father can speak four languages and he works at the Embassy.

HISTORY (The Second World War and the Holocaust)

Timeline

1928	All women over the age of 18 gain the right to vote.
1933	Adolf Hitler and the NSDAP are elected into power.
1935	The Nazi passed their Nuremburg Laws which made it legal to openly discriminate against the Jews.
1938	Kristallnacht or 'The Night of Broken Glass' was a pogrom carried out by Nazi supporters.
1939	Germany invades Poland and war is declared by Britain and France on September 3rd.
1940	Germany are successfully at conquering France. Britain manage to rescue 338,000 troops at Dunkirk.
1941	Japan attack the American naval base of Pearl Harbour on December 7th. This marks America's entry into the Second World War.
1942	The Soviet Union are successful in repelling Germany from advancing into Russia at the Battle of Stalingrad. Additionally, at the Wannsee Conference the Nazi's put in place plans to deal with the Jewish problem (Final Solution)
1944	D-Day the biggest seaborne invasion in history sees the allies land armies in northern France and begin the pushing the Nazi's back to Germany.

Key People

Winston Churchill	British leader who led the allies to victory in the Second World War. He served as Conservative Prime Minister twice - from 1940 to 1945 and from 1951 to 1955.
Franklin D Roosevelt	Was an American politician who served as the 32nd president of the United States from 1933 until his death in 1945.
Adolf Hitler	was a German politician and leader of the Nazi Party. He rose to power as Chancellor or Germany in 1933.During his dictatorship from 1933 to 1945, he initiated World War Two and the Holocaust.
Heydrich Himmler	Was the second highest ranking Nazi official. He was in charge of the SS.
Reinhard Heydrich	Was a high-ranking German SS officer who was the main architect of the Holocaust.

The Big Picture World War Two

Invasion of Poland	The invasion of Poland on the 1st September marked the start of World War II. The Germans with their 62 divisions and 1300 aircraft used blitzkrieg tactics to quickly overwhelm and subdue the Polish. By September 8th Germany had complete control over Poland.
Dunkirk	Operation Dynamo was the rescue operation implemented by the Royal Navy. It was co-ordinated by Vice Admiral Bertram Ramsay and his small team in Dover Castle. From the 26th May to the 4th June 1940 the Royal Navy as well as a flotilla of small boats crossed the channel to evacuate the soldiers trapped on the beaches. In all 800 boats helped rescue 338,226 men off the French Beaches
Pearl Harbour	The surprise attack by the Japanese on Pearl Harbour, the American naval base in Hawaii, on December on 7th 1941 marked the formal entry of America into World War Two. The attack crippled 20 American ships and more the 300 airplanes as well as killing 2403 sailors, soldier and civilians.
Stalingrad	The Battle of Stalingrad was the successful Soviet defence of Stalingrad which took place from July 17 1942 to February 2 1943. It was significant as it was the first major defeat for the Nazis . The victory also stopped Hitler from getting to the rich oil fields of the Caucasus and so prevented the Germans from getting vital wartime resources . The casualties on the German side exceeded 800,000 with the Soviets losing over 1 million men.
D-Day	Codenamed Operation Overlord, the battle began on June 6 1944, when some 156,000 American, British and Canadian forces landed on five beaches of the heavily fortified coast of northern France. It was a significant battle because it gave the allies a foothold in northern Europe in which they could start pushing the Nazis back. It led to over 400,000 German troops being killed, injured or captured and it opened the much needed second front to help the soviets in the East.

The dropping of the Atomic Bomb on Hiroshima in 1945.
Which signalled the end of the Second World War.

Persecution of the Jews

Nuremberg Laws 1935– Laws that made it legal to discriminate against Jews

- Hitler and the Nazis first major step in the persecution of the Jews was the introduction of the Nuremburg Laws in September 1935. With the passing of this law it made discrimination of Jews legal.
- These laws denied Jews the right to German citizenship; the right to marry or have sexual relationships with German people.
- As Jews were no longer citizens it opened them up to more discriminatory laws. Later laws were passed which forbade them from having certain professions (teachers/doctors/judges) . A result of the Nuremburg laws was that it forced Jews to have a 'J' stamped in their passports and forced them to wear the 'Star of David'.

Kristallnacht 1938– An act of state sponsored terrorism on the Jewish community

- Kristallnacht or 'The Night of Broken Glass' was a series of attacks on Jewish shop, businesses, homes and synagogues (Jewish place of worship)
- On the 9-10 November the Nazi' encouraged the German population to physical attack Jewish communities across Germany. Approximately 100 Jews were murdered, 20 thousand German Jews were arrested and sent to camps and hundreds of synagogues burned.. The Jews had to take responsibility for the attack and were fined $400 million.
- Kristallnacht was a sign to Hitler that the German people were ready to accept a more radical policy towards the Jews.

Ghettoization 1939– The confiscating of Jewish property and forced relocation.

- Jews were forced to give up the majority of their possession and to relocate to ghettos. They were put there to restrict their movements and segregate them from the rest of society
- Life in the ghettos was usually unbearable. Overcrowding was common. One apartment might have several families living in it. Plumbing broke down, and human waste was thrown in the streets along with the garbage. Contagious diseases spread rapidly in such cramped, unsanitary housing. People were always hungry. Germans deliberately tried to starve residents by allowing them to purchase only a small amount of bread, potatoes, and fat.

The Final Solution 1942-45– The policy of mass extermination using camps.

- At the Wannsee Conference 1942 high ranking Nazi officials came together to discuss the 'Jewish Problem' in Europe. Laid out by Rudyard Heydrich the plan outlined how European Jews would be rounded up and sent to extermination camps in Eastern Europe where they would be gassed. In all 6 million Jews were systematically murdered under Nazi rule.

HISTORY (The Second World War and the Holocaust)

Key Terms :

Allies	Countries who were fighting against Nazi Germany and imperial Japan.
Anti Semitism	Discrimination against or prejudice or hostility towards Jews.
Auschwitz	Opened in 1940, one of the largest of the Nazi extermination camps. Over 1 million Jews were murdered here.
Axis	The alliance between Nazi Germany, fascist Italy and Imperial Japan .
Blitzkrieg (Lightening War)	Is a term used to describe a method of offensive warfare designed to strike a swift, focused blow at an enemy using mobile, forces.
Concentration Camp/ Extermination Camp	Camps established by the Nazis to hold opponents of the regime (political opponents, gypsies, homosexuals). Extermination camps were mainly located in the East and were camps made for murder.
Discrimination	The unjust or prejudicial treatment of different categories of people, especially on the grounds of race
Einsatzgruppen	Special SS and police units, these squads were mobile killing units which would murder enemies of the Nazis in Eastern Europe.
Genocide	The deliberate killing of a large group of people, especially those of a particular nation of ethnic group
Gestapo	The German Secret Police during the Nazi regime. Created in 1933. They were notorious for their sneaky and brutal methods of operation
Ghetto	A section of a city (sometimes walled), where all Jews were forcible moved to.
Holocaust	The Holocaust was the attempt by the Nazis and their collaborators to murder all the Jews in Europe. In all 6 million Jews were systematically murdered .
Jews	A person whose follows the religion of Judaism
Kristallnacht (The Night of Broken Glass)	Kristallnacht or the Night of Broken Glass, also called the November Pogrom, was a pogrom against Jews carried out by SA paramilitary forces and civilians throughout Nazi Germany on 9–10 November 1938
Nuremburg Laws	The Nuremberg Laws were antisemitic and racist laws that were enacted in Nazi Germany on 15 September 1935 These laws made it legal for Germans to actively discriminate against the Jews.
The Final Solution	was the Nazi plan for the genocide of Jews during World War Two. The Final Solution to the Jewish question was the codename for the mass transportation of Jews to concentration camps in which 2/3 of Europe's Jewry were murdered.
Untermensch	A German word for people believed to be subhuman. Jews were the lowest category of the untermenchen. But Slavs/ homosexuals and gypsies were also seen this way

Knowledge Outcomes:

1.	What event changed how women were seen in the interwar years?	Their role in the First World War
2.	Where was a woman's place in society pre-1900?	In the home looking after the family.
3.	Which group of women campaigned peacefully to win the right to vote?	Suffragists
4.	What group of women campaigned violently to win the vote?	The Suffragettes
5.	Who killed herself at the Epsom Derby?	Emily Davison
6.	What are the two interpretations about her death?	It was an accident/ she died a martyr
7.	When did Hitler become leader of Germany?	1933
8.	What were the first signs of prejudice against the Jews	Book Burnings and shop boycotts (1933)
9.	What did the Nuremberg Laws state?	That no Jew could be a German citizen and they could not marry Germans.
10.	What does Kristallnacht translate into?	The Night of Broken Glass. So named because of the shards of glass left on the streets because of the attacks.
11.	What were the slum areas of cities that Jews were sent to?	Ghettos
12.	What conference did the Nazi's finalise arrangements for the Final solution?	Wannsee conference
13.	What percentage of European Jews were killed under the Nazi's	75%
14..	When did World War Two begin?	1st September 1939
15.	Why did it begin?	German invaded Poland
16.	What was the successful German tactic used at the start of the War?	Blitzkrieg
17.	What two interpretations are there of the Battle of Dunkirk?	Disaster for the English/ Victory for the English
18.	What was a consequence of Pearl Harbour?	America's entry into the war
19.	What key battles signalled the turning points in the war against	Battle of Stalingrad (1942-43) D-Day landings (1944)
20.	What event signalled the end of the Second World War?	The dropping of the Atomic Bomb

MATHS

Indices and Index Notation

If a number is the square, or cube, or some other power of another number, then we can use index notation as an alternative way of writing the number. E.g. $4 = 2 \times 2 = 2^2$

2^2 is the number in index notation or index form.

Keywords for Indices

Index	The small number written behind and above the base number, which indicates what power we must raise it by. Also called the exponent.
Indices	The plural of index. When we multiply powers of the same number, we add together the indices.
Power	Powers of a number are made by multiplying the number by itself a set number of times. E.g., the third power of 2 or 2^3 is 8.

Index Laws

<u>Multiplying</u>

When you multiply powers of the same number you add together the indices. E.g. $5^3 \times 5^4 = 5^7$

<u>Dividing</u>

When you divide powers of the same number you subtract the indices. E.g. $7^5 \div 7^3 = 7^2$

<u>Raising a power to a power</u>

When raising a power to another power you multiply the indices. E.g. $(8^3)^4 = 8^{12}$

<u>Special Indices</u>

Anything to the power zero equals 1. E.g. $9^0 = 1$

Anything to the power 1 is itself. E.g. $10^1 = 10$

The power ½ or 0.5 is the square root. E.g. $16^{½} = 4$

Expanding and Factorising

Expanding and factorising are the processes of removing or including brackets. Expanding brackets is essentially multiplication, and factorising is done by dividing.

Keywords for Expanding and Factorising

Brackets	Symbols used to group numbers in arithmetic or letters and numbers in algebra and indicating certain operations as having priority.
Expression	A collection of terms which can contain variables (letters) and numbers. E.g. *4pq-12p*
Expand	To multiply out brackets in an expression.
Factor	A number that divides another number exactly. 4 and 3 are factors of 12.
Factorise	To express a number or expression as a product of its factors.
Coefficient	A factor in an algebraic term. E.g. in the quadratic expression $3x^2 + 4x - 2$ the coefficients of x^2 and x are 3 and 4 respectively.

Expanding a single bracket

Multiply the term on the outside of the bracket by each term on the inside of the bracket.

3(2a + 5) means 3 x (2a + 5), which is the same as 3 x 2a + 3 x 5, that is 6a + 15.

Expanding a double bracket

Multiply each term in the first bracket by each term in the second bracket then simplify.

(a + 3)(a + 4) means axa + ax4 + 3xa + 3x4, that is $a^2 + 4a + 3a + 12$, simplifies to $a^2 + 7a + 12$.

Substitution and Formulae

Substitution is replacing a variable (a letter) in an algebraic expression or formula with a number.

A formula (formulae is the plural of formula) is a piece of algebra designed to help you work out an unknown quantity from some other things which you do know.

E.g. the formula for the area of a triangle is:

$$Area = \frac{base \times height}{2} \text{ or } A = \frac{b \times h}{2}$$

If I know the base and height of a triangle I can **substitute** these values into the **formula** to find the area.

Keywords for Substitution and Formulae

Formula	An algebraic relationship connecting two or more variables e.g. $A = \pi r^2$ A and r are variables
Variable	A number represented by a letter in a piece of algebra. A variable can take different values at different times.
Expression	Contains letters (variables) and/or numbers but no equals sign e.g. *3m + 2n*
Equation	Contains an equals sign, one letter (the unknown), and numbers. Solve to find the value of the unknown. e.g. *7x – 9 = -4*
Identity	True for all values of the unknown e.g. *4d = d + 3d*
Substitute	To replace unknowns with numbers
Subject	The variable (shown by a letter) on its own on one side of the equals sign e.g. *M = 3n – 5* (M is the subject)
Rearrange	To change the subject of a formula.

MATHS

Equations and Inequalities

Equations are algebra with an equals sign and an unknown value represented by a letter, often an "x". These can then be solved to find the value of the unknown.

An inequality is very similar to an equation but replaces the equals sign with an inequality sign.

Important Symbols

=	Equals
<	Is Less than
>	Is Greater than
≤	Less than or equal to
≥	Greater than or equal to

Solving Equations

We solve equations by carefully performing inverse operations until all that remains is the unknown on one side of the equals sign, and a value on the other. We must always do the same thing to both sides of the equation.

A useful order to help solve linear equations is:

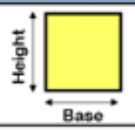
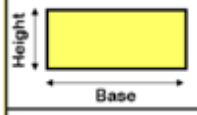
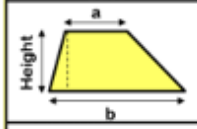
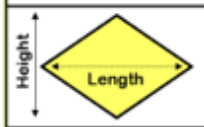
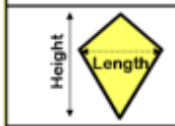
Fractions	Multiply both sides of the equation by the denominator of any fractions.
Brackets	Expand any brackets.
Letters	If the equation has letters (unknowns) on both sides then remove the letters from the side with the least letters. Subtract (or add) the same amount from/to both sides of the equation.
Numbers	Get the unknowns on their own by subtracting (or adding) the same amount from/to both sides of the equation.
Divide	If the unknown has a coefficient, e.g. 3x, then divide both sides of the equation by the coefficient to get the value of just one lot of the unknown.

Perimeter and Area

Perimeter is the outer edge or rim of a flat shape. We normally find the length of a perimeter by adding together the lengths of all the sides of the shape.

An area is the amount of space contained within a flat shape. Areas can sometimes be worked out or estimated by counting squares, but we normally use a formula which is specific to the type of shape whose area we want to find.

Formulae for Areas

Shape	Name	Formula for Area
	Square	Base x Height
	Rectangle	Base x Height
	Triangle	Base x Perpendicular Height ÷ 2
	Trapezium	$\frac{(a+b) \times \text{height}}{2}$
	Parallelogram	Base x Perpendicular Height
	Rhombus	Length x Height ÷ 2
	Kite	Length x Height ÷ 2

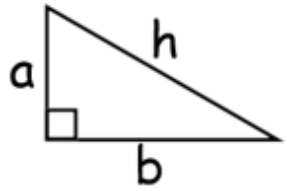
Pythagoras Theorem

Pythagoras theorem is a formula for finding the length of one side of a right-angled triangle, if we know the other two.

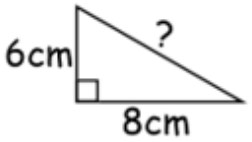
Written in algebra it looks like this:

$$a^2 + b^2 = h^2$$

Sometimes the *h* is written as a *c* but the letter *h* reminds us that this side must be the **hypotenuse**. The **hypotenuse** is the longest side of a right-angle triangle and is the only side which does not touch the right-angle. This diagram might help.



Here is an example to help you understand.



So **a** can be 6cm, **b** can be 8cm and **h**, the hypotenuse is unknown.

$$a^2 + b^2 = h^2$$
$$6^2 + 8^2 = h^2$$
$$36 + 64 = h^2$$
$$100 = h^2$$
$$\sqrt{100} = h$$
$$10 = h$$

MUSIC

Rehearsal Skills

1. Practise Every Day – Help your long-term memory. Improve your learning curve.

2. Have Specific Goals – Create specific, attainable goals before you practise.

3. Begin With The Basics – Go over technique first. Always have a warm-up plan.

4. Focus On The Tough Stuff – Spend your time on what you cannot play. Turn fear into confidence.

5. Write It Down – Get the most from your practise log. See your goals and accomplishments.

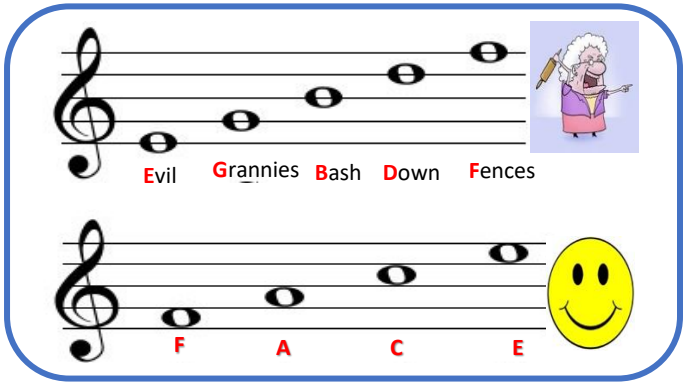
6. Slow It Down – Muscle memory. Never make mistakes. Learn it right the first time.

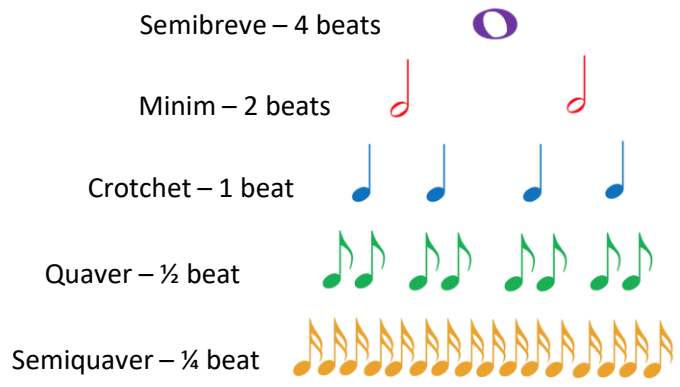
7. Break It Down – Identify musical sections. Don't always start at the beginning. Help memorisation.

8. Use A Metronome – Always work on improving your time. Don't stretch time for the 'tough stuff'.

9. Accentuate The Positive – Use positive language in the practise room. Focus on solutions, not problems.

10. Challenge Yourself – Don't give up, and don't always go for the 'easy' option.

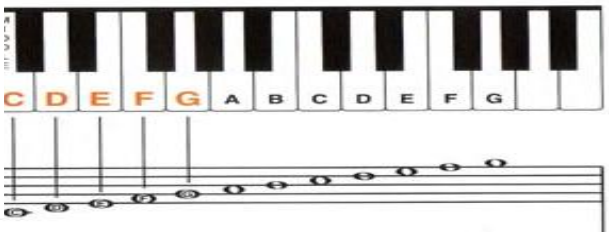




Keywords

Dynamics	Symbol	Definition
Fortissimo	*ff*	Very loud
Forte	*f*	Loud
Mezzoforte	*mf*	Moderately loud
Mezzopiano	*mp*	Moderately quiet
Piano	*p*	Quiet
Pianissimo	*pp*	Very quiet
Crescendo	<	Becoming gradually louder
Decrescendo	>	Becoming gradually quieter

Tempo	Definition
Lento	Slowly
Largo	Slow and stately
Adagio	Leisurely
Andante	At a walking pace
Allegro	Fast
Vivace	Lively
Presto	Very quickly



PHYSICAL EDUCATION

Principles of Training

1	**Frequency** – how often you train **Intensity** – how hard you train **Time** – how long you train for **Type** – what particular training you do

Additional Principles of Training

2	**Specificity** – training should be specific to your sport/activity/fitness goals.
3	**Progressive Overload** – training needs to be demanding enough to cause your body to adapt.
4	**Adaptation** – how your body increases its ability to cope with training loads.
5	**Reversibility** – if you stop training, or if the intensity is not enough to cause adaptation, training effects are reversed.
6	**Variation** – vary your training programme to avoid boredom.
7	**Individual Differences/Needs** – the programme should be designed to meet your training goals, needs, ability, skill level and exercise likes/dislikes.
8	**Rest and Recovery** – these are essential to allow the body to repair and adapt. The rate of progression can be reduced if the body does not recover.

What KPIs will I be assessed in?

1	Advanced Skills	6	Being a Role Model
2	Decision Making	7	Personal Fitness
3	Analysing Performance	8	Principles of Training
4	Leadership	9	Nutrition and Hydration
5	Adaptability		

What sports will I be assessed in?			Fundamental Skills
1	Invasion	Football, Hockey, Handball, Basketball, Rugby, Netball	Throwing, Catching, Passing, Dribbling, Tackling, Shooting
	Net and Wall	Badminton, Tennis, Volleyball	Attacking shots, Defensive shots, Serving
2	Artistic	Gymnastics and Trampolining	Balance, Travel, Vaulting, Landing, Timing, Rotation, Aesthetics
3	Striking and Fielding	Rounders, Stoolball, Softball, Cricket	Striking, Throwing, Catching, Long Barrier, Decision Making
4	Athletics	Long Jump, High Jump, Shotput, Discus, Javelin, Long Distance, Short Distance, Relay	Running, Jumping, Throwing, Pacing
5	Swimming	Front Crawl, Backstroke, Breast Stroke, Butterfly, Personal Survival	Streamlining, Breathing, Technique




PRODUCT DESIGN

Area: The two-dimensional space taken up by something – for example, the area of a sheet of material like card. Measured in a size appropriate to the problem – either cm^2 or m^2 for larger problems.

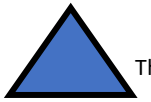
Area of a rectangle = width × length

Area of a circle = πr^2

π=3.142

The radius is half the diameter

The circumference of a circle =πD



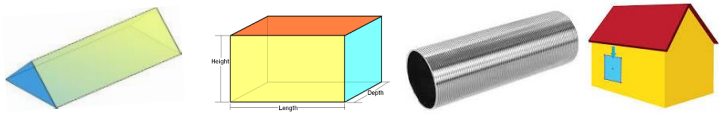
The area of a triangle = $\frac{\text{base} \times \text{height}}{2}$

Volume:

Description: The space taken up by something – for example, the volume of a material like wood or plastic – or even gas. Measured in a size appropriate to the problem – either cm^3 or m^3 for larger problems

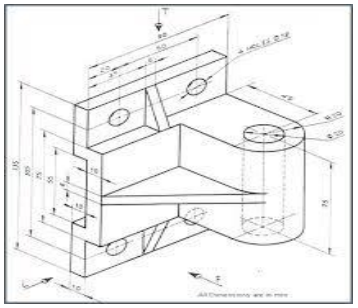
Applications: This could be useful to work out the volume of a material and therefore its cost – or the amount of paint or other liquid used.

For any solid with a linear cross section (the same shape all way along), the volume is just the end area times the length!

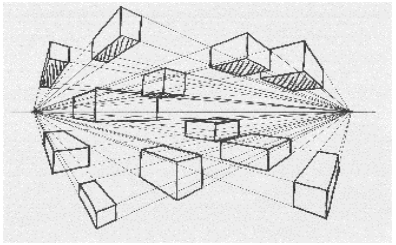


Stretch: What if you have a more complex shape like a house – how would you work out the volume now?

Estimation: You must be able to estimate (accurate guess) ROUGHLY what the answer to a problem may be. For this you could round figures up or down and work the easier answer out in your head so you know if your calculator answer is correct later.



Isometric drawing: Used for practising drawing in 3D for design ideas. Ask for isometric paper to practise on!



Perspective drawing: Often used in architecture. All lines that are not vertical go back to vanishing points.

Literacy – Be able to write an evaluation

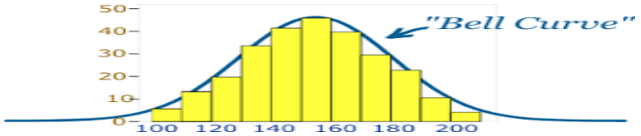
- What skills have you learnt during this project?
- What skills have you developed (improved)?
- What aspects of your project do you think have gone well?
- What aspects have been less successful?
- Compare your finished project to your final design drawing: what changes did you make and why?
- If you were given a chance to revisit the project, what would you do differently?

Distribution curve:

You need to be able to graphically represent data like this.

This is a good way of showing a collection of measurements.

For example, you could have collected the heights of all the students in your year group and represented the data in the yellow graph. From this you could easily see the average and the sizes either side, to help you design products better.



Mean average:

The is adding up all the data you have and dividing by the number of sets of data you have.

Example: You want to know the average head size so you can design a hat that would fit an average person.

Person 1: head size 420 mm Person 2: head size 520 mm

Person 3: head size 480 mm Person 4: head size 360 mm

The Average = $\frac{420+480+520+360}{4}$ = 445

For you to do:

1. What is the average bottle volume size?

140 ml, 210 ml, 183 ml, 189 ml, 112 ml, 439 ml

2. What is the mean shoe size?

10, 6, 9, 8, 15

You need to also understand that abnormal measurement could effect your averages.

From those last examples, can you spot the abnormal measurement that you may like to take out to get a better average?

PRODUCT DESIGN

Key Terms

National Grid	System to balance supply and demand by shifting power around the country and turning some energy plants on / off.
Photovoltaic	Cells used to convert light energy from the sun to electrical energy.
Life cycle analysis	The environmental impact that a product has on the environment during its manufacture and life and death.
Hydroelectric	Production of electricity by passing water though a turbine, or a wave through a paddle machine.
Sustainable	The ability to exist constantly.
Renewable energy	A source of energy or a material that can be replenished – hydroelectric.
Carbon footprint	Amount of carbon used throughout the life of a product from raw materials to final end of life.
Portable power source	Non-National Grid power: solar, batteries, petrol generator.

Example Questions:

1. Explain the life cycle of a named product. Include its carbon footprint.
2. Explain how companies can help to reduce global warming.
3. Explain what a finite resource is.
4. For each of the following give an example that we could adopt in school:
   - Reduce
   - Reuse
   - Recycle
   - Repair
   - Reduce
   - Refuse

Carbon-Based Energy Production

Source	What it is and how it is converted into energy	Advantages	Disadvantages
Biomass	• Organic matter derived from organisms, such as wood, crops, rubbish, landfill gas and alcohol fuels • Can be used directly via combustion (of wood or biodegradable wastes) to produce heat, or converted to electricity	• Waste from plants and farming can be used	• Large areas needed to cultivate crops • Emits fumes that add to global warming
Biodiesel	• Made from natural elements such as plants, vegetables and fermented waste cooking oil • Can be used in diesel-powered vehicles without modifying the engine	• Uses waste from plants and farming • Does not give off harmful chemicals	• Large areas needed to cultivate crops
Tidal	• Turbines generate electricity from the movement of tidal water • Artificial tidal barrages are constructed across tidal rivers, bays and estuaries, for example – the water is trapped and then released through turbines as the water levels change	• No emissions • Powerful • Tides are predictable and stable • Barrages can have a secondary purpose such as a bridge	• Lower energy output than fossil fuels • Large barrages may have an ecological impact • Expensive to build • Only available in coastal areas
Wind	• Wind turbines use propeller blades, which spin a shaft to create electricity through a generator	• Freely available • Can be used in remote areas • No emissions	• Could restrict shipping traffic when placed in the sea • Wind can be unpredictable • Wind farms are often regarded as unsightly • Expensive to set up
Solar	• Solar (photovoltaic) panels convert sunlight into electricity • Solar thermal power plants use the sun's rays to heat a fluid that is circulated through pipes, transferring heat to water and producing steam • Steam is converted into mechanical energy in a turbine, which powers a generator to produce electricity	• Reliable source of power in warmer countries • Homes can have their own electricity supply • More electricity is produced in stronger sunshine	• Could change ecology when large solar farms replace traditional farms • Expensive to set up • Effectiveness of power generation depends on geographical location
Hydroelectric	• A dam traps water that flows through tunnels and turns turbines to make electricity	• Large amount of low-cost power • Can have secondary purpose such as a water reserve	• Expensive to set up • Construction may damage the environment

Renewable Energy Resources

Source	How it is converted into energy	Advantages	Disadvantages
Coal	• Heat energy and hot gases convert water into steam which powers a turbine to create high-voltage electricity • Smaller amounts used as a domestic heat source	• Stable, large-scale and high-power electricity generation • Relatively cheap to extract and convert • Reliable	• Coal power plants emit pollution such as carbon dioxide, sulfur, mercury, selenium and arsenic • Technologies to reduce coal power plant emissions are expensive • Coal mining impacts significantly on the landscape
Oil	• Processed and split into petroleum products such as petrol, paraffin and diesel • In power plants oil is burnt to heat water and produce steam, which propels turbine blades to produce electricity	• Stable, large-scale and high-power electricity generation • Relatively cheap to extract and convert	• Oil power plants are highly polluting • Oil exploration impacts on the landscape • Oil extraction risks environmental disasters
Gas	• Burning gas can power turbines, with the waste heat powering a steam turbine • Natural gas is used in homes for heating or cooking • It has lower emissions than other fossil fuels – its combustion emits carbon	• Stable, large-scale and high-power electricity generation • Relatively cheap to convert and extract as ready-made fuel	• Burning gases are highly polluting

RELIGIOUS STUDIES (Religion and Human rights – Justice, Prejudice and Discrimination)

Keyword	Definition
Social justice	Ensuring that society treats people fairly whether they are poor or wealthy and protects people's human rights
Human rights	The basic rights and freedoms to which all human beings should be entitles
Justice	Fairness
Responsibility	Having a duty to do something
Duty	Having an obligation to do something
Equality	The state of being equal, especially in status, rights and opportunities
Prejudice	Unfairly judging someone before the facts are known; holding biased opinions about an individual or group
Discrimination	Actions or behaviour that result from prejudice
Positive discrimination	Treating people more favourably because they have been discriminated against in the past or have disabilities
Heterosexual	To be sexually attracted to members of the opposite sex
Homosexual	To be sexually attracted to members of the same sex
Disability	A physical or mental impairment that has an adverse effect on a person's ability to carry out normal day-to-day activities
Racism	Prejudice or discrimination directed towards a person or group of people based on race or ethnicity
Stereotype	An oversimplified image of a person or group of people

Problems related to the topic	Explanation
Social justice	Life is not always fair. There are some things which are unfair that are beyond human control; there are other situations that we could call injustices and these occur when people increase or cause the unfairness upon others.
What are human rights?	In 1948 the United Nations General Assembly adopted The Universal Declaration of Human Rights (UDHR), which sets out the basic human rights that everyone should be entitled to, regardless of their nationality,
What do Christians say?	The Bible teaches that God is a God of justice: 'all his ways are just' (Deuteronomy 32:4), and is full of teachings about the importance of social justice, and the duty to care for others. Jesus said that the second most important commandment is to 'love your neighbour as yourself'. Many Christians have campaigned for social justice. In the nineteenth century, the anti-slavery campaigner, William Wilberforce, the prison reformer, Elizabeth Fry, and the politician, Lord Shaftesbury (who worked to improve factory conditions and to educate poor children), were all inspired by their faith.
Equality – Christian view	Christians believe that people are special and precious, because, according to Genesis 1:27, they have been created in God's image. People are born into different circumstances but all are equally valuable and can have a relationship with God
Gender Prejudice and Discrimination – Christian view	Catholic and Orthodox churches do not support women becoming priests. They argue that men and women are equal but have different roles. In Britain in 1993, the Church of England allowed women to be ordained as priests and in 2014, a woman became a Bishop for the first time.
Sexuality – Christian view	In the Bible, heterosexual relationships are portrayed as natural and what God intended. Much more controversial are homosexual relationships. Within Christianity there is a diversity of opinion, from condemning homosexual acts as sinful to seeing homosexuality as morally acceptable.
Disability – Christian view	Christians oppose discrimination against disabled people because it does not show Christian love (agape). Jesus healed the sick and disabled and taught his followers to 'love your neighbour as yourself'.
Racism – Christian view	Most Christians today oppose racism in all its forms, and Desmond Tutu (South Africa) and Martin Luther King Jr (USA) are examples of Christians who have campaigned against racist beliefs and policies.

CHALLENGE

Go to the links below and extend your knowledge on: https://www.youtube.com/watch?v=T87DNKBvYIY, https://www.youtube.com/watch?v=Eh_HXrurrTA&t=504s,

RELIGIOUS STUDIES (Religion and Human rights – Religious Freedom)

Keyword	Definition
Freedom of religion	The right to believe or practise whatever religion one chooses
Freedom of religious expression	The right to worship, preach and practise one's faith in whatever way one chooses
Human Rights	The basic rights and freedoms to which all human beings should be entitles
Evangelism	Spreading the Christian gospel by public preaching or personal witness.
Key pieces of scripture or sacred writings	'Everyone has the right to freedom of… religion' – Article 18, The Universal Declaration of Human Rights 'Be completely humble and gentle; be patient, bearing with one another in love' 'Watch out for those who cause divisions… keep away from them' 'If it is possible as far as it depends on you, live at peace with everyone'
Examples of exam questions	Explain two contrasting beliefs in contemporary British society about freedom of religious expression. (4 marks) Explain two similar beliefs in contemporary British society about the right of freedom of belief. (4 marks) Explain two religious beliefs about freedom of religious belief. Refer to scripture of sacred writings in your answer. (5 marks) 'People should have the freedom to say whatever they want about religion'. Evaluate this statement. (12 marks) 'Freedom of religion and religious expression is not possible in the modern world'. Evaluate the statement. (12 marks) 'Rights are more important than responsibilities'. Evaluate the statement. (12 marks) 'Rights are more important than responsibilities'. Evaluate the statement. (12 marks)

Problems related to the topic	Explanation
Religious Freedom	Article 18 of The Universal Declaration of Human Rights says: 'Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance'. In Britain today, the official state religion is Christianity, and the Anglican Church is the official church in England. No one can be forced to join the Church. The government protects freedom of religious expression, which is the right of individuals to worship in whatever way they choose, or not at all, and laws forbid the persecution of members of other faiths or non-believers. Believers are free to evangelise providing that they do not preach hatred and intolerance. This freedom of religion in the UK has not always been the case; throughout history, people have been fined, imprisoned or killed for worshipping in ways or following particular denominations or religions not supported by the government or monarch. In some places, differing religious views have lead to conflict; for example, conflicts between Catholics and Protestants in Northern Ireland, and Crusades organised by Christian Kings in the Middle Ages to recapture the city of Jerusalem from Muslim control. In the 20th and 21st Centuries, Christians have been persecuted by communist governments and by dictators, for example in North Korea, or in countries where Christians are the minority, for example in the Middle East and Pakistan.
Religious teachings on freedom of religion	Christian teaching encourages tolerance and harmony. When Christian denominations fight each other, they are not following what the Bible says. Ephesians 4:2 says, 'Be completely humble and gentle; be patient, bearing with one another in love'. Romans 12:18 says, 'If it is possible, as far as it depends on you, live at peace with everyone'. Romans 16:17 says 'Watch out for those who cause divisions… keep away from them'. No religion teaches religious intolerance. Religious freedom is encouraged by religions for different reasons. Islam teaches that religious freedom is part of God's design, and freedom of belief is taught in the Qur'an. Christians believe that Jesus taught religious freedom. The freedom to believe and worship, in public or private, to change religion or not follow any religion is regarded by most Christians as a fundamental human right.

CHALLENGE

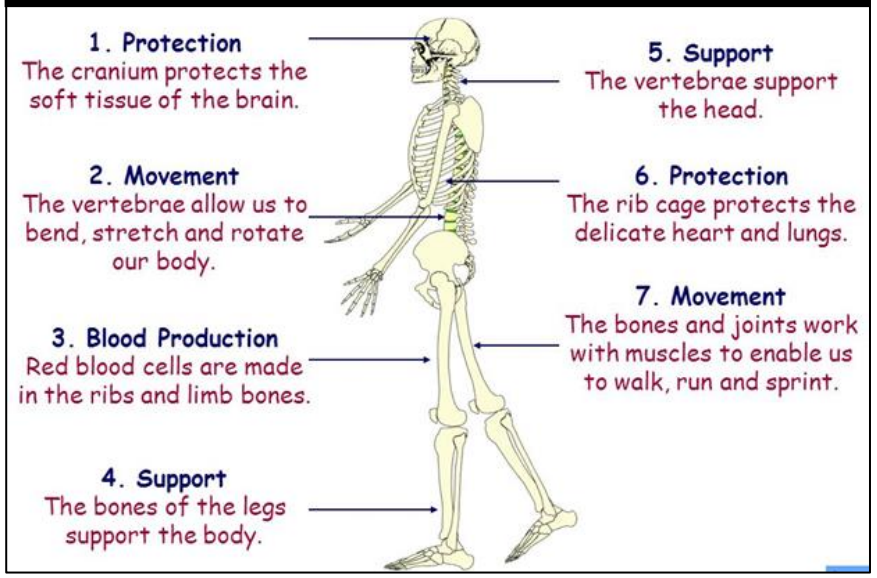
Go to the links below and extend your knowledge on: https://www.bbc.com/bitesize/guides/zcb42hv/revision/1, https://en.wikipedia.org/wiki/Freedom_of_religion,

SCIENCE (9BB – Biological Systems and Processes)

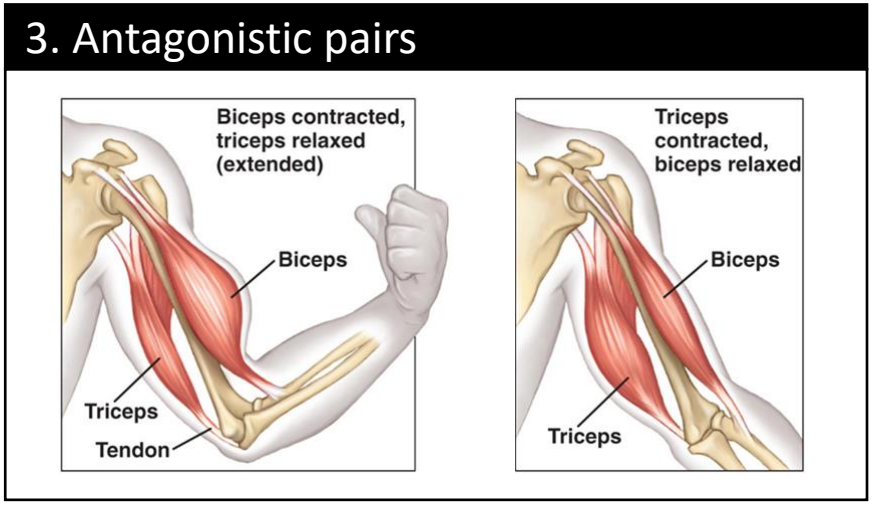
1. Keywords

Respiration	Chemical reaction inside all living cells that releases energy.
Respiratory system	Organs in the body that enable us to get oxygen into the blood and remove carbon dioxide.
Inhalation	Breathe in.
Exhalation	Breathe out.
Cilia	Tiny hair-like structures on the surface of the cell. Helps to sweep dust, mucus, etc. up the back of the throat.
Gas exchange	Moving oxygen from air into our blood and carbon dioxide in our blood into the air.
Alveoli	Tiny air sacs in the lungs that increase the surface area for gaseous exchange.
Diaphragm	Contracts to draw air into the lungs.
Arteries	Blood vessels that carry oxygenated blood away from the heart.
Veins	Blood vessels that carry deoxygenated blood towards the heart.
Diffusion	The spreading out of particles from an area of high concentration to an area of low concentration.
Aerobic respiration	Reaction in which glucose is broken down using oxygen to produce carbon dioxide and water and release energy for the cells.
Anaerobic respiration	Glucose is broken down to produce lactic acid. A small amount of energy is transferred to the cells.
DNA	Complex chemical that carries genetic information.
Nucleus	Found inside many living cells. Contains genetic information.
Chromosomes	Structures found in the nucleus, made up of genes.
Genes	Short sections of DNA that control characteristics.

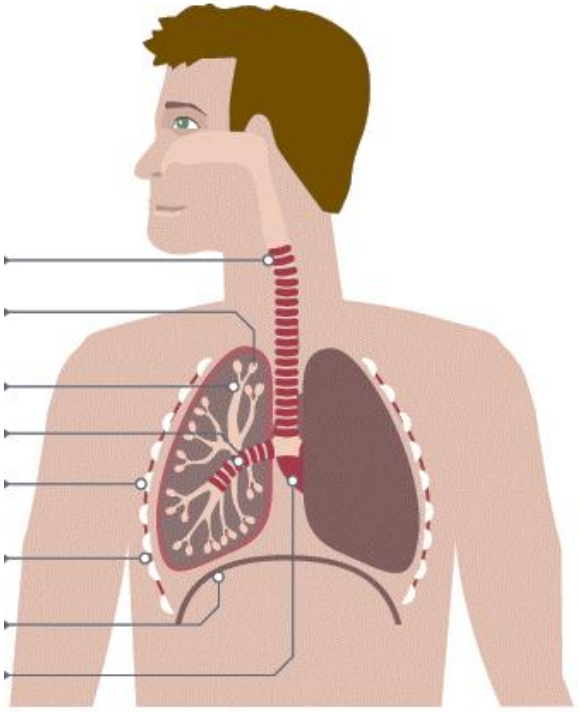
2. Functions of the skeleton



3. Antagonistic pairs

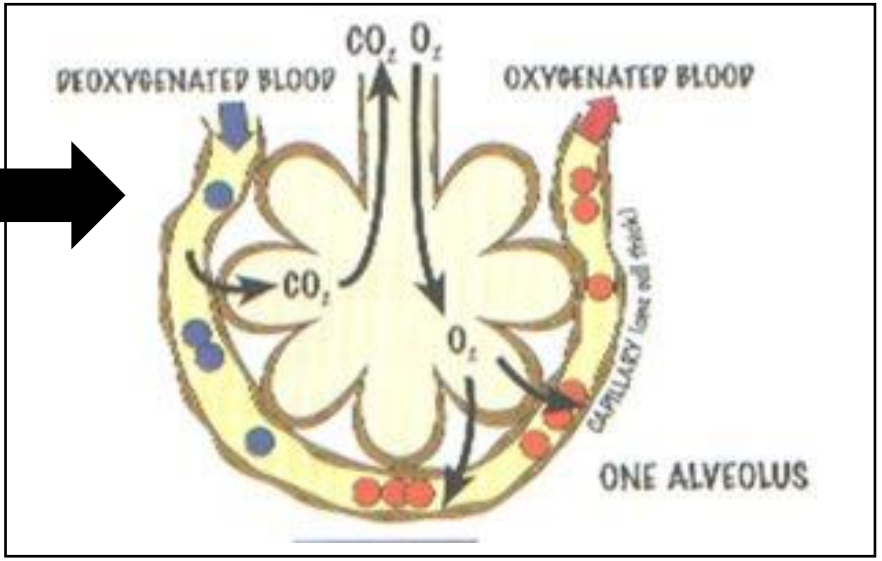


SCIENCE (9BB – Biological Systems and Processes)



4. Respiratory system

A	Trachea
B	Alveoli
C	Bronchiole
D	Right bronchus
E	Ribs
F	Intercostal muscles
G	Diaphragm
H	Heart



5. Aerobic Respiration

glucose + oxygen → carbon dioxide + water + energy

6. Anaerobic Respiration

glucose → lactic acid (+ energy)

7. Smoking and pregnancy

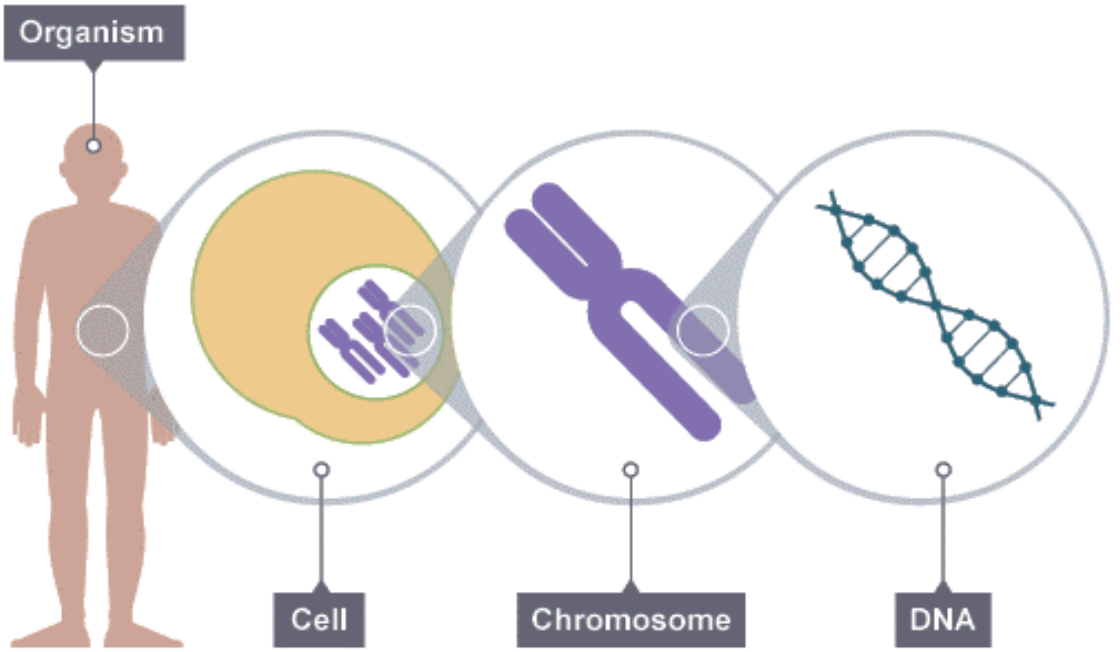
1. Nicotine and carbon monoxide can reduce the baby's oxygen supply.
2. This leads to an underdeveloped baby which increases the risk of:
   - baby being underweight
   - heart defects
   - decrease in lung function
   - brain function affected
   - risk of still birth or SIDS (Sudden Infant Death Syndrome)

SCIENCE (9BB – Biological Systems and Processes)

8. Drug: any chemical that effects the nervous system

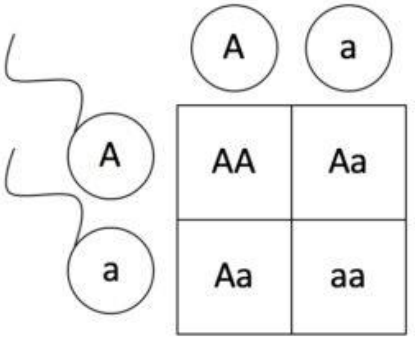
Stimulant	Depressant
Stimulants speed up the activity of the nervous system. **This causes:** - Increased alertness - Raised heart rate and blood pressure - Reduced appetite	Depressants slow down the activity of the nervous system. **This causes:** - Sleepiness - Forgetfulness - Can be addictive

9. The organisation of DNA in humans



10. Genetic inheritance

Allele	Different forms of the same gene, e.g. hair colour
Dominant	When only one copy of the allele is needed to show in the offspring
Recessive	When the allele only shows when there are two copies
Homozygous	Two copies of the same allele
Heterozygous	Two different alleles



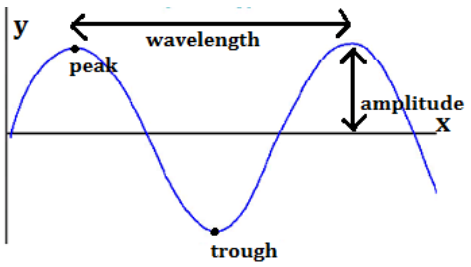
SCIENCE (9PS – Sound Waves)

1. KEYWORD	Definition
Transverse wave	A wave where the vibration is perpendicular to the direction of travel
Longitudinal wave	A wave where the vibrations are parallel to the direction of travel
Mechanical wave	A vibration that travels through a substance (e.g. sound)
Frequency	The number of wave fronts passing a fixed point every second (measured in Hz)
Ultrasound	Sound above 20 KHz
Superposition	When two waves meet and affect each other
Reflection	When waves bounce off a surface
Echo	Reflection of sound that can be heard

2. COMPARING THE WAVES	Light wave	Mechanical wave
Type of wave	Transverse	Longitudinal
Can they travel through a vacuum?	Yes	No. Mechanical waves can only pass through a solid, liquid or gas
Can they be reflected?	Yes. By smooth shiny surfaces	Yes. By smooth surfaces
Can they be absorbed?	Yes. By dark surfaces	Yes. Rough surfaces absorb sound
Can superposition occur?	Yes	Yes

3. USES OF ULTRASOUND	
Use	**How it works**
Cleaning jewellery	The vibrations of the wave shake the dirt lose
Scanning the human body	The waves are partially reflected at different tissue boundaries
Industrial imaging	The waves can detect flaws in metal castings as they are partially reflected by cracks
Physiotherapy	Energy from the wave is absorbed by body tissue and relieves pain

4. LABELLING A WAVE



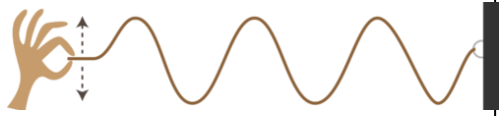
5. SPEED OF SOUND

Sound travels faster through liquids and solids than it does through a gas because the particles in a gas are further apart.

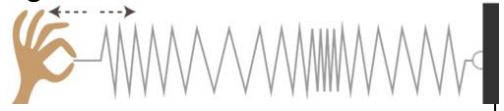
Substance	Speed of sound
Air	343 m/s
Water	1493 m/s
Steel	5130 m/s

6. Humans can hear sound in the 20 Hz – 20 KHz range.
Dogs can hear up to 50 Hz.

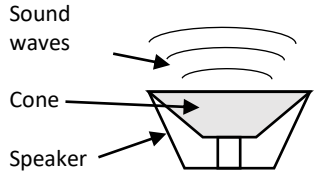
Transverse wave



Longitudinal wave



7. Sound waves are produced by all vibrating objects. Loudspeakers work by converting electrical energy into kinetic energy. This moves the cone, which creates the sound waves.



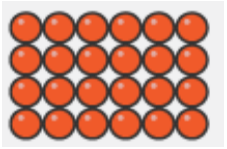
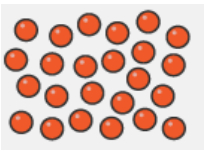
SCIENCE (9PM – Matter)

1.KEYWORD	Definition
Pressure	Force divided by area
Density	The mass per unit of volume of a substance
Concentration	The amount of substance per unit volume of solvent
Melting	Solid changing to liquid
Sublimation	Solid changing to gas without changing to liquid
Freezing	Liquid changing to solid
Evaporation	Liquid changing to gas
Condensation	Gas changing to liquid
Dissolve	When a substance breaks up and mixes completely with a solvent to produce a solution
Diffusion	The movement of molecules from an area of higher concentration to an area of lower concentration
Brownian motion	The random movement of particles of gas due to collisions with other particles of gas
Reversibility	The ability of a substance to go back to its previous state
Upthrust	Upwards force exerted by a liquid on an object floating in it

5. The pressure in liquids increases with depth as the weight of the liquid above is greater.

The jet coming from the lower hole is more sideways as there is more pressure.

6. Liquid pressure is exerted on the surface of on object in a liquid causing upthrust.
As an object starts to sink in liquid the liquid pressure increases and upthrust increases.
The object floats if the upthrust is equal and opposite to the objects weight. The object sinks if the weight is greater than the maximum upthrust.

2. STATE	Solid	Liquid	Gas
Diagram			
Arrangement of particles	Regular arrangement Very close together	Randomly arranged Close together	Randomly arranged Far apart
Movement of particles	Vibrate about fixed position	Move around each other	Brownian motion
Energy of particles	Low energy	Higher energy	Very high energy
Density of substance	High density	Lower density	Very low density

3. The particles in a substance stay the same when it changes state – only their closeness, arrangement or motion change. This means the mass of the substance stays the same.

4.	Melting	Evaporation	Condensing	Freezing
Arrangement of particles	From regular and compact to random	Much further apart	Become much closer together	Stay close together and become regular
Motion of particles	Start to move around each other	Start to move quickly in all directions	Slow down and only move around each other	Stop moving around and only vibrate on the spot
Energy change	Particles gain energy	Particles gain energy	Particles lose energy	Particles lose energy

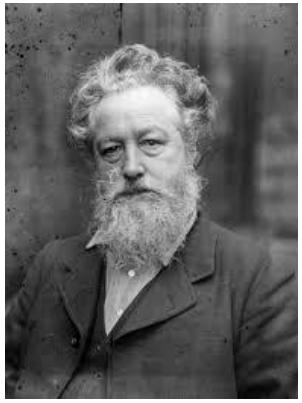
A physical change in a substance does not change what the substance is and it can be reversed, e.g. melting ice then freezing water. In a chemical change, a reaction occurs and a new substance is formed

TEXTILES

William Morris

William Morris (24 March 1834 – 3 October 1896) was a British textile designer, poet, novelist, translator and socialist activist associated with the British Arts and Crafts Movement. He was a major contributor to the revival of traditional British textile arts and methods of production.




https://www.theenglishhome.co.uk/the-genius-of-william-morris/

https://www.vam.ac.uk/articles/introducing-william-morris

Name		Characteristics	Example Uses
Ash		Flexible, tough and shock resistant, laminates well	Sports equipment and tool handles
Beech		Fine finish, tough and durable	Children's toys and models, furniture and veneers
Mahogany		Easily worked, durable and finishes well	High end furniture and joinery, veneers
Oak		Tough, hard and durable, high quality finish possible	Flooring, furniture, railway sleepers and veneers
Balsa		Very soft and spongy, very lightweight but can snap in small sections	Prototyping and modelling –

MDF

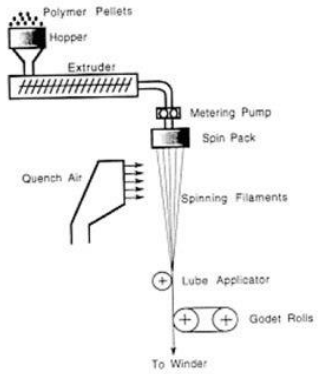
Plywood

Chipboard

TEXTILES

SYNTHETIC FIBRE

SYNTHETIC FIBRES ARE MAN MADE, THEY ARE MADE FROM POLYMERS WHICH ARE LONG CHAINS OF PLASTIC MOLECULES. THESE MOLECULES ARE DERIVED FROM COAL OR OIL. POLYESTER, LYCRA AND ACRYLIC ARE PRODUCED FROM OIL AND NYLON IS PRODUCED FROM COAL. SYNTHETIC FIBRES ARE NON RENEWABLE SOURCES, THEY ARE RESISTANT TO BIOLOGICAL DAMAGE, CAN BE CHANGED BY HEAT TO FORM DIFFERENT SHAPES AND TEXTURES. HOWEVER THEY ARE NOT VERY ABSORBENT AND CAN BE HARD TO DYE.

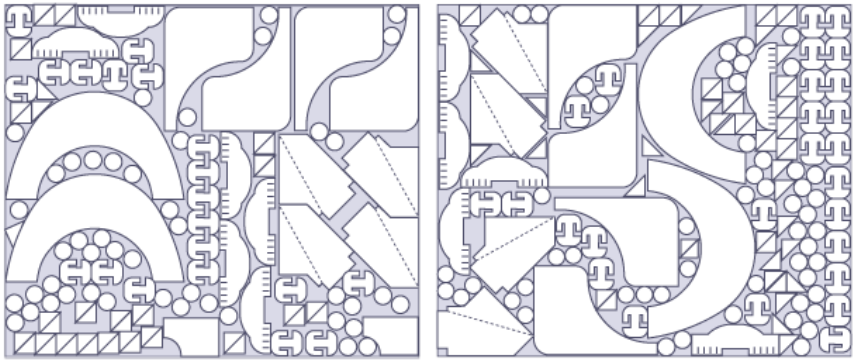


Transferring marks onto fabric

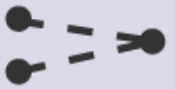
When using patterns or when producing garments as a one-off design, pattern markings need to be transferred onto the fabric. This can be done in a number of ways:

- **Tailor's chalk** – a chalk that leaves a temporary mark on the fabric and comes in a variety of colours so it can stand out on any colour of fabric.
- **Vanishing markers** – these look like felt-tip pens but the mark made can either be removed by water or disappears over time as it is exposed to the air.
- **Tailor's tacks** – these are looped stitches that are removed once the garment has been machine stitched.
- **Hot notcher** – used in industry when a large quantity of garments are made, it produces small holes by burning through the plies of fabric and is used to identify where fastenings or components, such as pockets, need to be sewn.

Lay planning



Lay planning is a process that positions pattern templates onto fabric in the most economical way.
This prevents excess wastage of fabric and ensures the garment is as cheap as it can be to make.
In the garment industry, **computer aided design (CAD)** programs are used to facilitate this process.

Marking symbol	Meaning
	Grain line
	Cut on bias of fabric
	Place on fold
	Dart
	Notch
	Shorten or lengthen pattern
	Button hole
	Pleat

TEXTILES

Block printing

Screen Printing

Roller printing

Sublimation Printing

Critical Evaluation

Key words

Planned obsolescence: is the practise of designing products that will have a limited life and that will become obsolete and require to be replaced, such as disposable razors. Modern mobile phones are a good example as they need continual software upgrades and they are soon replaced by new better-performing models. Planned obsolescence is generally bad for the environment as it creates more waste.

Design for maintenance: is a term used when designing products that are more **durable** and have spare parts available to mend and maintain them. This is only possible with low-tech or **modular** products that don't require a great deal of skill to repair. For example, a push bike can be regularly maintained, with parts such as pedals and chains being replaced when they are damaged.

Some products are designed to have a specific, often short, life span.

Companies may **plan** for their products to become **obsolete** in a certain timeframe.

Companies must balance the demand for new products against the needs of the environment.