



# MARSHLAND HIGH SCHOOL

**Year 8**

**Knowledge**

**Organiser**

**Autumn Term**

**2020 – 2021**

**Name:**

**Form:**

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## **Instructions for using your Knowledge Organiser**

Every school day, you should study 1 to 2 subjects from your knowledge organiser for homework lasting at least 1 hour in total.

On pages 6 and 7 there is space for you to record the subjects you have studied to make sure you are giving equal time to all of them. Your parent should sign off your homework each evening on these pages.

Your parent should also sign your reading log on pages 8 and 9.

You can use the note pages in this booklet to help with your studies.

You need to bring your Knowledge Organiser to school every day. It will be checked regularly during form time.

You will be regularly tested on knowledge contained in this booklet in your lessons and through quizzes on Show My Homework.

### **Self- testing**

You can use your Knowledge Organiser in a number of different ways but you should not just copy from the organiser. Use the following tips and guidance to help you get the most out of learning and revising your subject knowledge.

These are some possible tasks you could try:

- Ask someone to write questions for you
- Write your own challenging questions, leave them overnight and try answering them the next day
- Create mind maps
- Create flash cards
- Put the key words into new sentences
- Look, write, cover and check
- Write a mnemonic
- Use the 'clock' template to divide the information into smaller sections
- Give yourself a spelling test
- Give yourself a definition test
- Draw images and annotate/label them with extra information
- Do further research on the topic
- Create fact files
- Create flowcharts
- Draw diagrams

## How to self- test with the knowledge organiser

The Knowledge Organisers are designed to help you learn a wide range of knowledge which will, in turn, mean you are more prepared for your lessons and make even better progress.

To get the most out of your Knowledge Organiser you should be learning sections and then self-testing.

### Look, Cover, Write, Check, Correct

This should be familiar to you from primary school.

First Look, then cover this column	Next try to answer/give definition/spell	Now Check to see if you were right	Finally Correct those you got wrong
<b>Look</b>	<b>Write</b>	<b>Check</b>	<b>Correct</b>
Noun	Person place or thing		
Belief	Something you believe	X	Accept true without proof

### Questions/Answers, Answers/Questions

Ask a parent, carer, study partner to write you questions (or answers) and then you write the answer (or possible question that would respond to that answer).

You can also write your own questions but if you do this leave it until the next day before you answer them to see what you can remember after a break.

**Always remember to check and correct**

### Flashcards

These are a very good and simple self-testing tool.

To make your own, take some card and cut into rectangles roughly 10cm x 6cm.

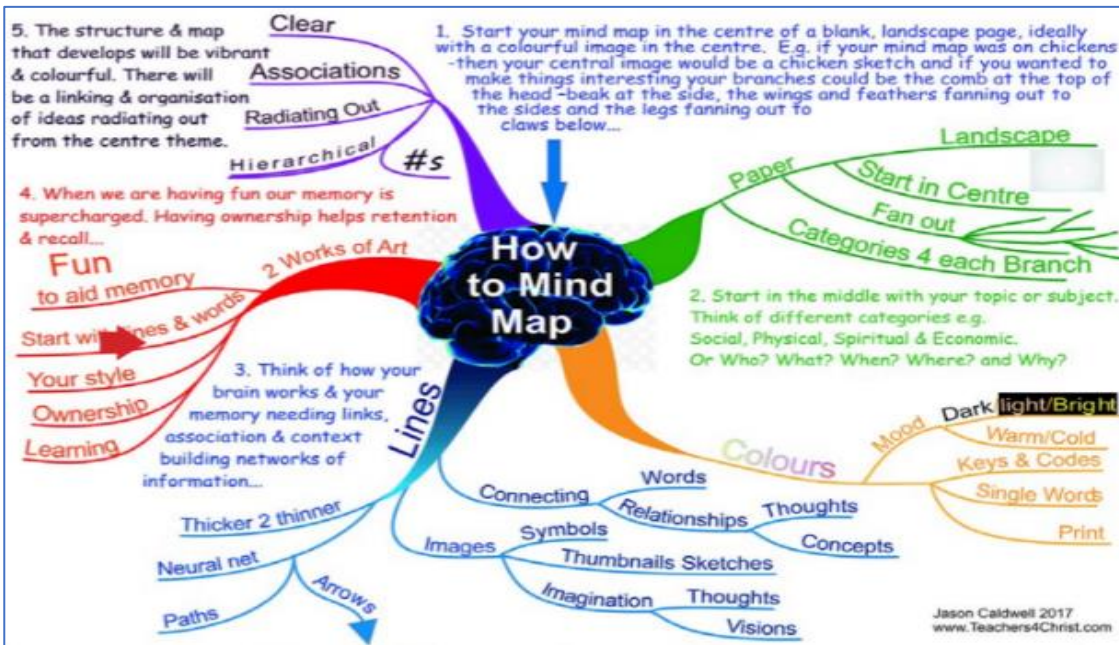
Write the key word on one side and the definition on the other.

Then go through your cards looking at one side and seeing if you can remember the keyword/definition on the other side.



## Mind Maps

Mind mapping is a process that involves a distinct combination of imagery, colour and visual-spatial arrangement. The technique maps out your thoughts using keywords that trigger associations in the brain to spark further ideas.



Once you have made your map, cover it and test yourself on different strands, eg. How much of the Lines strand can you recall.

## Clock Learning

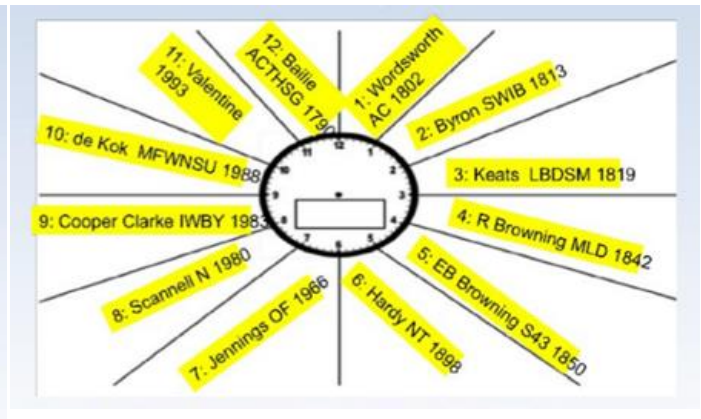
For this technique, draw a basic clock.

Take a subject or topic and break it down into 12 sub-categories.

Make notes in each segment of the clock. Revise each part for 5 minutes.

Now the clock over and try and write out as much information as you can from one of the segments.

Clocks can also be used to help to visualise a timeline



## Homework log and parental check

Week 1	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 2	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 3	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 4	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 5	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 6	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 7	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

## Homework log and parental check

Week 8	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 9	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 10	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 11	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 12	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 13	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 14	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

## Reading log

Use this reading log to record the books you read along with how long you have spent reading and the Accelerated Reader quizzes you have completed.

Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Book(s) read (title and author)	Total time spent reading	Parent/Guardian /Staff signature
1										
2										
3										
4										
5										
6										
7										

## Reading log

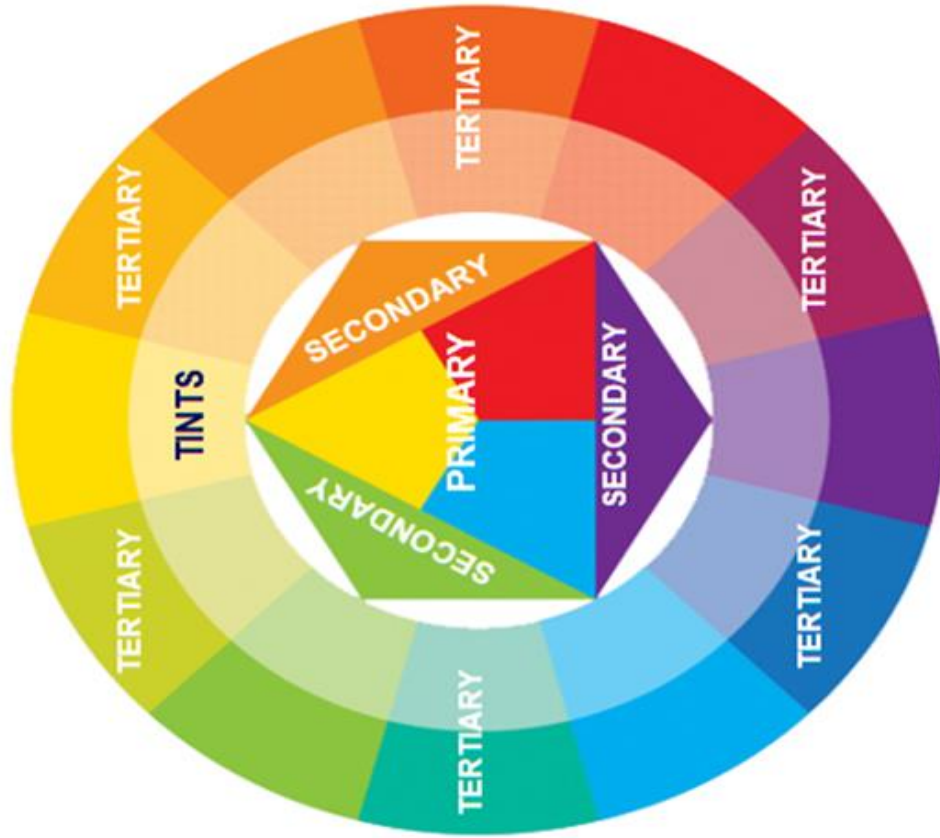
Use this reading log to record the books you read along with how long you have spent reading and the Accelerated Reader quizzes you have completed.

Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Book(s) read (title and author)	Total time spent reading	Parent/Guardian /Staff signature
8										
9										
10										
11										
12										
13										
14										

# Art – Colour Theory:

In the visual arts, **colour theory** is a practical guide to colour mixing and the visual effects of specific colour combinations. There are also categories of colours based on the colour wheel for example: primary colour, secondary colour and tertiary colour.

## THE COLOUR WHEEL:



**HARMONIOUS:**  
Colours that are next to each other on the colour wheel.



**COMPLEMENTARY:**  
Colours that are opposite each other on the colour wheel.



**TRIADIC:**  
Three colours spaced equally apart on the colour wheel.



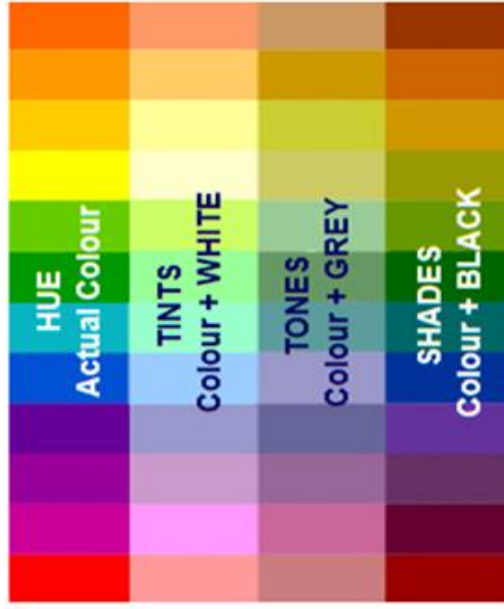
**WARM COLOURS:**



**COOL COLOURS:**



## HOW BLACK AND WHITE CHANGES COLOUR:



## Art Specific Language and Terms

### Tonal Gradation

A visual technique of gradually transitioning from one colour/hue to another, or from one shade to another, or one texture to another.

### Colour Blending

The change from one colour to another gradually. The colour change should appear smooth and is achieved when colours are mixed and layered without an obvious line or step between each colour.



# Art – Observational Drawing – Colour Pencil:

Art Specific Language and Terms		
<b>Tone</b>	The lightness or darkness of something.	<b>Colour Blending</b>
<b>Tonal Gradation</b>	A visual technique of gradually transitioning from one colour/hue to another, or from one shade to another, or one texture to another.	The change from one colour to another gradually. The colour change should appear smooth and is achieved when colours are mixed and overlapped without an obvious line or step between each colour.
<b>Depth</b>	Refers to making objects appear closer or further away and making a two-dimensional image seem three-dimensional.	<b>Secondary Source imagery</b>
<b>Proportion</b>	The size relationship between different elements e.g height compared to width.	<b>Scaling up</b>
<b>Burnishing</b>	Layering and blending until no paper grain shows through the coloured pencil layers.	<b>Accuracy</b>
		A precise way to transfer and enlarge a small image.
		The extent to which one piece of work looks like another.

A **tortillon** is a cylindrical drawing tool, tapered at the end and usually made of rolled paper, used by artists to smudge or blend.



## Essential tips for colour pencil work:

- Layering complementary colours darkens both colours and reduces their intensity.
- Pressing harder intensifies a hue but does not darken it.
- You can darken a colour by layering its next darkest neighbour over it, for example, purple over red. Use dark brown or dark blue before black, and avoid leaving black as the top layer of any colour.
- To lighten a colour, layer over it with a lighter hue of the same colour before resorting to white.
- To intensify a colour, blend it using a tortillon or stump.
- Burnishing any colour with white will make it lighter, shinier, cooler and hazier.



# Computing – 8.1 HTML Knowledge Organiser

<b>World Wide Web</b>	Collection of webpages connected together by hyperlinks, using the Internet (usually shortened to <b>WWW</b> ).
<b>Internet</b>	A global network of computers all connected together.
<b>Webpage</b>	A hypertext document connected to the World Wide Web.
<b>Website</b>	A collection of webpages with information on a particular subject.
<b>Web browser</b>	The software which displays a webpage or website on a computer. <b>Common browsers</b> include: Internet Explorer, Firefox, Safari, Opera and Chrome.
<b>Uniform Resource Locator (URL)</b>	An address that identifies a particular file or webpage on the Internet
<b>HTML</b>	Hyper Text Markup Language - describes and defines the content of a webpage.
<b>Multimedia</b>	Content that uses a combination of different types of media - eg, text, audio, images.
<b>Hyperlink</b>	A link from a hypertext document to another location, activated by clicking on a highlighted word or image.
<b>Hotspot</b>	An area on a computer screen which can be clicked to activate a function, usually an image or piece of text acting as a hyperlink.
<b>Navigation</b>	The elements of a website that allows the user to move around the website. This is usually in the form of a menu or hyperlinked text or buttons.
<b>JPG</b>	The main file type used for images on the World Wide Web - uses lossy compression.

## HTML Tag Definition – what does it do?

<code>&lt;html&gt;</code> Root of a HTML document	<code>&lt;img&gt;</code> Image
<code>&lt;body&gt;</code> Contents of the page	<code>&lt;a&gt;</code> Anchor (used in hyperlinks with <b>href</b> )
<code>&lt;head&gt;</code> Information about a page <code>&lt;p&gt;</code> Paragraph	<code>&lt;ol&gt;</code> , <code>&lt;ul&gt;</code> Ordered/unordered list <code>&lt;li&gt;</code> List item
<code>&lt;title&gt;</code> Tab title / defines title	<code>&lt;table&gt;</code> Creates and defines table
<code>&lt;h1&gt;</code> , <code>&lt;h2&gt;</code> , <code>&lt;h3&gt;</code> Headings	<code>&lt;b&gt;</code> , <code>&lt;i&gt;</code> , <code>&lt;u&gt;</code> Bold. Italic and Underline



# Computer Science – 8.2 Web Authoring Keywords

<b>Web Authoring</b>	Web Authoring is the process of using a graphical interface to create a web page or website. The advantage of using this method as opposed to straight HTML is that you can create the look of the finished product in an easier 'point and click' way. A disadvantage may be that the Web Authoring software generates more, unnecessary code that results in a bigger file size.
<b>Template</b>	A template is a pre-set layout that can be used instead of starting from scratch. This may take less time and look professional, however it may not meet your needs fully.
<b>Response Forms</b>	Interactive element. A way of allowing the user to input information through you website and have that information stored exactly as the user input it.
<b>Interactive menu</b>	Interactive element. Interactive menus can be used as an easy way to navigate a website without the need to remember command line instructions.
<b>Image roll over</b>	Interactive element. An image that allows the user to interact with the page. Usually this occurs when the user hovers the mouse over the image and the image changes in some way.
<b>Web links</b>	Interactive element. Shortcuts to places either within the website or sometimes external links that take the user to a linked website elsewhere.
<b>Site search</b>	Interactive element. A field that searches the site, usually, for keywords or phrases. The benefit of this is that the user is less likely to get 'lost' or frustrated and leave the site to access an alternative.
<b>Audience</b>	Which group of people is the Website being created for? The intended user of the website. This could be an age, gender, situation, religious group, occupation, ability or a mixture of them all.
<b>Purpose</b>	The purpose of a website relates to the reason that the site is in existence. This may be to sell, inform, teach, socially connect, promote, display information etc.
<b>Root Folder</b>	The folder that will contain all of the documents, files and folders that relate to the website.
<b>E-Safety</b>	E-safety is safe and responsible use of technology on the computer and the internet.
<b>Reliability</b>	Reliability of information often comes down to the source, where you have got the information from. Did you get your information about today's weather from the Met office or Bob down the road? Which is likely to be more reliable? Who/where gave me the information, do I trust it? Why do I trust it?
<b>Sitemap</b>	The underpinning structure and navigation of a website.
<b>Target Audience</b>	When creating a product we often have a target audience in mind. That is, WHO are we making this product for? A website aimed at children may look remarkably different for a website aimed at adults who are sight impaired.
<b>Target Audience needs</b>	Difference audiences will have different needs. For example, certain groups may need more or less colour, can handle different types and complexity of language, use bigger smaller text, need more or less interactive features etc.
<b>Accessibility features</b>	Can everybody access your website? For those who struggle with small text is there a magnifier or narration option? High or low contrast version for those with certain conditions, etc.



# Devising and Characterisation

## Key to Devising

Brainstorm	Brainstorm your ideas with your group, mind maps are a good place to start if you are struggling.
Try Everything	Do not throw out ideas until they have been tried.
Listen	You must listen to everyone and their ideas, work as a group not individuals
Structure	The structure of your play can be changed. Just because you create a scene in a certain way, does not mean the structure has to be set in stone.
Experiment	Experimenting with ideas, techniques, structure and characters will create a better performance
Pick your stage	Pick the style of stage you are going to perform on and keep the position of the audience in mind all the time
Reflect	After every session/ scene reflect on what you have done and where you need to go.

## 7 States of Tension

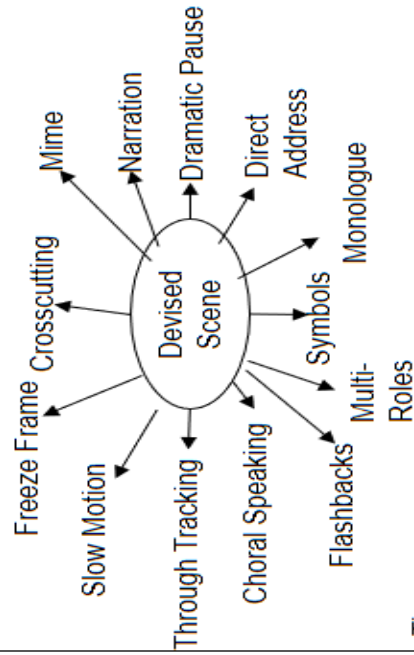
1. Exhaustion
2. Laid back/ Zombie
3. Neutral
4. Alert
5. Suspense/curious
6. Passionate/melodramatic
7. Tragic

How can you link Lecoq's ideas of tension into your character?

What state of tension is the character? Does this change? When does this change?

How do I use dramatic devises...

You can use a dramatic devise to add interest in your work, create a particular impression or effect on the audience.



Tip...

You don't have to use all of these in one scene.... Mix them up to create more effect and make it more interesting.

## There are two types of Characterisation

- **Direct characterisation**– this tells the audience the personality of the character
- **Indirect characterisation**- shows the audience things that can reveal the personality of a character through the following 5 aspects...
  1. Speech- what they say. How they say it.
  2. Thoughts- these can be revealed to the audience
  3. Effects on others- how characters react to one another, what they do, how they use proxemics
  4. Action- why they do what they do and how they do it.
  5. Looks- How they look- their costume, makeup and hair style.

## Key to Characterisation

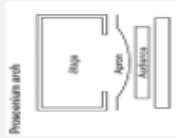
Voice	You need make sure that you not only speak clearly but you emphasis in the right place, use pauses, think about the pace you are speaking at- can you be heard? Are you clear
Movement	How you move can define a character. Think about why and how you move on the stage
Body Language and Facial expressions	These need to be clear and strong- is your body language and facial expressions telling the correct story? Do they match?
Proxemics	Are you standing the right distance away from another character?

## 2 Things to Remember

1. Remember rehearsal and develop is key to both devising and characterisation,
2. Remember to make your play age appropriate!!

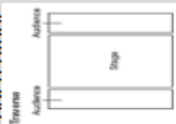


When using a proscenium arch stage, the audience sits on one side only is called a proscenium stage (you might know this as end-on staging). The audience faces one side of the stage directly, and may sit at a lower height or in tiered seating. The frame around the stage is called the proscenium arch.

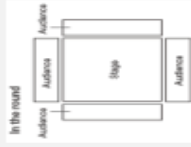


In theatre, a thrust stage (also known as a platform stage or open stage) is one that extends into the audience on three sides and is connected to the backstage area by its upstage end.

A traverse stage is a form of theatrical stage in which the audience is predominantly on two sides of the stage, facing towards each other... In some traverse stages, one end of the stage space may also end in an audience, making it similar to a thrust or three-quarter round stage.

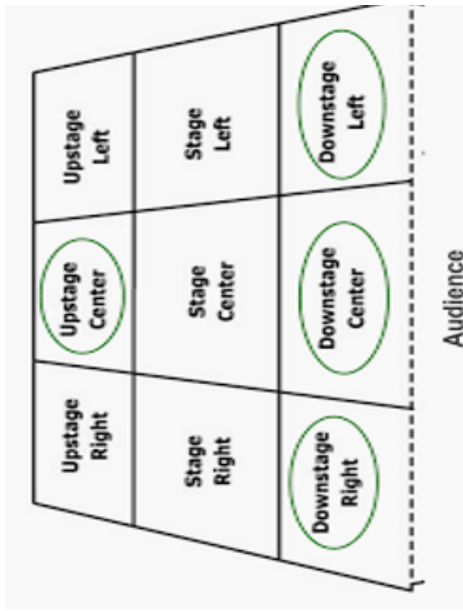


Theatre-in-the-round also called arena stage, central stage, or island stage, form of theatrical staging in which the acting area, which may be raised or at floor level, is completely surrounded by the audience.



# Design

You MUST make sure that the design elements you chose fit your chosen practitioner or genre....



## Key Lighting Vocabulary

	Par Can – light for large areas as it Literally floods the stage
	Profile spotlight definite sharp-edged beam, can also be used for gobos.
	Fresnel Spotlight soft edged beam, good for smaller areas
	Strobe light – quick successive flashing light, making action appear 'jumpy'
	Birdie – a tiny lantern good for up lighting facial features and distorting them creating an eerie atmosphere
	Moving head – light which moves across the stage, changes colour and can project images using gobos.

Gobo

A gobo is a metal stencil which is placed over a to light project an image onto the stage or cyclorama (back wall of the stage) They can project things like words or windows, or the image of sunlight, rain etc.

Gel

To change the colour of light projected on stage a gel is placed in front of the light which creates a coloured filter. They come in a great many colours and shades. Colour is explicitly important and needs real consideration; for example, an evening woodland scene might use blues and greens where as a scene would predominantly use

Intensity -when referring to stage lighting

Intensity of lighting is a direct reference to how bright or dim the light is, which can directly impact on mood / atmosphere on stage.

## Sound And Music In Performance

Enhancing a performance Sound and music can add atmosphere, emphasise action happening on stage, help set the scene, indicate a change of time or location or focus attention onto a character.

What is diegetic sound? Diegetic sound is sound which is heard by the characters on stage and exists within the world of the play. For example, birds singing, children playing, road noise. The characters may not react to these but they are there creating an atmosphere.

What is non diegetic sound? These are sounds which exist outside the world of the play and the characters don't appear to hear these. For example, to help create tension a heart beat or dramatic music.

# Studying English is about *thinking, noticing, exploring, creating...*

Year 8, Unit 1

## Perspective & Point-of-View

Each writer has their own perspective about the world - they see the world in their own unique way. There are things they like and want to celebrate, and there are things that make them angry or sad. There are also things that are really hard to figure out, to make sense of.

This perspective on the world shapes what and how they write. As students of English, we try to understand what the writer's perspective is, and how we see it materialise in their writing.



Writers are influenced by many factors

historical and geographical contexts

family and childhood

income and lifestyle

science and technology

significant events such as war or revolution

other writers and artists

Add your own definitions here:

perspective

influence

historical context

geographical context

significant

heroism



A writer's perspective

influences



all the choices they make in their writing:

What **form** will I choose (a play, a novel, a poem?)

What **characters** will I include?

Where will I **set** the main events?

What minor **themes** might I explore?

What **genre** will it be?

How will I make sure it's **convincing**?

I want to write about the sorts of feelings people have when...

I want to write about how life could be better if everybody just...

I want to write about how life is full of situations where...

I want to write about how we could change society by...

I want to write about how the world is full of people who...

I want to write about a common problem we all face...

## A Worked Example of Thinking in English

Each writer has their own unique perspective on the world.

A story about WWI, written by a man who actually served on the frontline, will reflect a very personal and authentic experience of war.

Students of English explore texts by tracking ideas and examples

Students of English think about how and what we learn about the writer's perspective from the text.

We ask ourselves what each story reveals about the writer and their context.

Students of English notice ideas in texts and annotate to show their thinking.

*Journey's End*



RC Sherriff's perspective of war



*Journey's End*, end of Act II

RALEIGH: excitedly: I say, Stanhope's told me about the raid

OSBORNE: Has he?

RALEIGH: Just you and me and ten men, isn't it?

OSBORNE: Yes, tomorrow, just before dusk. Under a smoke cloud.

RALEIGH: I say, it's most frightfully exciting!

OSBORNE: We shall know more about it after Stanhope sees the Colonel tonight.

RALEIGH: Were you and I picked - specially?

OSBORNE: Yes.

RALEIGH: I say!

The hope of glory gave way to disillusionment and trauma

Young, inexperienced soldiers were naïve to begin with - they dreamed of heroism.

Sherriff could see this in their eagerness to fight.

The story focuses on a group of men serving at the frontline. Each of them faces the truth, struggles and survives the trauma in his own way.

Each of them is characterised to reflect an aspect of life on the frontline - Raleigh represents this naïvety.

Sherriff has Raleigh behaving as someone excited by the idea of heroism when he is chosen to go on a raid. He has Raleigh say to Osborne 'I say, it's most frightfully exciting!' He thinks he's going to make a name for himself.

He also knew that these young men soon came to realise the brutal truth of war.

And many of them were killed. Sherriff thought this a terrible waste of life.

Sherriff has Osborne die in the raid. His writing suggests that Raleigh is crushed emotionally by this.

He has Raleigh die too, at the end of the play.

ideas + examples

The writer characterises Raleigh as naïve - he's excited to be given the chance to show his bravery and heroism ('I say!' + repetition of excitedly/exciting) He should be feeling terrified, angry, sad, full of the realisation that he and his comrades might die.

Osborne says little - shows no emotion. Knows R just doesn't understand. Feels sorry for him. Won't argue with him but also can't indulge his enthusiasm. Osborne is characterised as being much wiser and more experienced - we see contrast between them.

**A bit like scientists, we create responses, writing up our findings to share our discoveries with others:**



Sherriff seems to have been heartbroken by the terrible realisation he watched so many young men go through, where their excitement for glory turned into disillusionment and trauma. He explores this when Raleigh is told he has been chosen to take part in a raid. The writer characterises Raleigh as naïve here - he is excited to be given the chance to show his bravery and heroism, which we see in the frequent use of exclamations, 'I say!' and in the repetition of excitedly and excitement. He should be feeling terrified, angry, sad, full of the realisation that he and his comrades might die, like Osborne, whose reaction is much more measured. He says little because he doesn't want to upset Raleigh, but he can't share his enthusiasm either.

# Topic 1: Getting Ready to Cook

**Personal Hygiene** – before starting to cook, you need to get yourself ready:

1. Taking off outdoor clothing (coats, blazers, jumpers and ties) and putting on a clean apron
2. Tying up long hair
3. Cleaning hands with hot soapy water

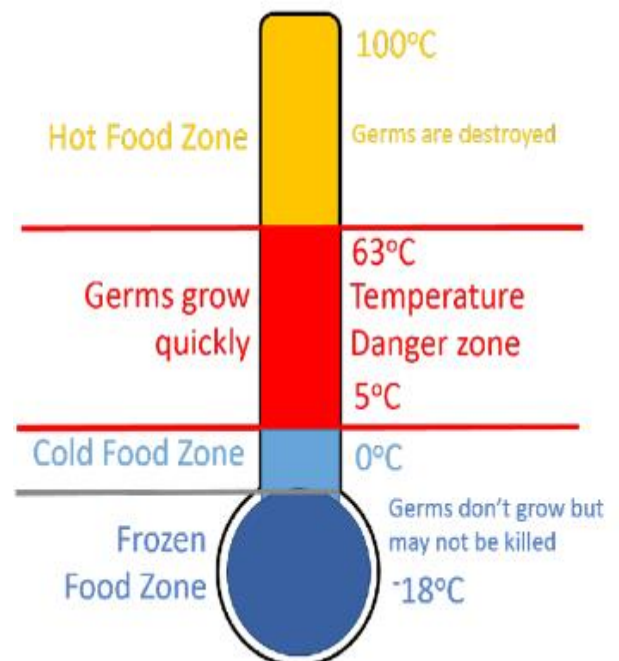


Good personal hygiene will stop you cross-contaminating food with the harmful bacteria that causes food poisoning. When preparing food you should not be eating your ingredients or licking your fingers.

**Food Safety** – some foods are ‘high risk’ because, if they are not stored, prepared and cooked properly, there is a high risk of them causing food poisoning. Food poisoning is caused by harmful bacteria (pathogens) which produce toxins when they reproduce. Common pathogens include salmonella (found in raw eggs), campylobacter (found in raw chicken) and E. Coli (found in uncooked meat).

**Food Poisoning** – when you eat food contaminated by bacteria the consequences can be serious. Symptoms include upset stomachs, headaches and dizziness. Bacteria needs food, moisture, warmth and time to reproduce. To prevent bacterial growth you need to use temperature control - keeping foods out of the ‘danger zone’ (5-63C) and following the 4Cs:

1. **Chilling** – when food is kept cold in the fridge (0-5C) bacterial growth slows down. Freezing food (-18C) stops growth but the bacteria will start to grow again when food is defrosted
2. **Cleaning** – removes bacteria from hands and work surfaces in the kitchen
3. **Cooking** – heating food to 75C+ kills bacteria. Once cooked, food should be kept warm above 63C
4. **Cross-contamination** – stops bacteria from spreading from high risk foods to other foods



Using the correct chopping board is one important way of avoiding cross-contamination. You should also clean your hands after touching raw meat and fish.



## Topic 2: Healthy Eating

We need food for growth and repair of cells, energy, warmth, protection from illnesses and keep our bodies working properly.

Food is made of 5 nutrients. Each nutrient does a different job in the body. Eating a balanced diet means we get all the nutrients we need for a long and healthy life.

The amount of energy we need depends upon our age, gender, activity level and body size. If we eat more food than we need, and don't use it up by exercising, any energy that's left is turned into fat and we put on weight. If we eat less food than we need, the fat stores are used up and we may end up losing weight.



The Eatwell Guide shows how eating different foods can make a healthy and balanced diet. It divides up different food groups and shows how much of each group is needed. Extra information about the amount of water we need and the labels on food packaging is also provided.



There are also eight guidelines for a healthy lifestyle. They are:

1. Eating at least 5 portions of fruit and vegetables every day
2. Eating higher fibre starchy foods like potatoes, bread, rice or pasta
3. Eating less food high in fats and sugar
4. Eating less salt
5. Eating more fish – including one portion of oily fish
6. Drinking plenty of fluids (at least 6 to 8 glasses a day)
7. Being more active
8. Eating breakfast every day

### 8 healthy eating tips



# French Y8 Autumn term Knowledge Organiser Unit 1: Les vacances – Holidays

Tu es allé(e) où?	Where did you go?	Tu es où en vacances ?	Where are you on holiday?	Qu'est-ce que tu as visité?	What did you visit?	C'était comment ?	How was it?
Je suis allé(e)	I went to...	Je suis...	I am...	J'ai visité...	I visited...	C'était...	It was...
Nous sommes allé(e)s...	We went to...	Nous sommes au bord de la mer	We are... by the seaside	Nous avons visité...	We visited...	amusant	fun/funny
en Allemagne	Germany	à la montagne	in the mountains	le château	the castle	génial !	great
en Espagne	Spain	à la campagne	in the countryside	le lac	the lake	ennuyeux	boring
en France	France	en colo (colonie de vacances)	at a holiday camp	le musée	the museum	cool	cool
en Grèce	Greece	chez mes grands-parents	At my grandparents' home	le parc	the park	sympa	nice
en Italie	Italy			le stade	the stadium	intéressant	interesting
au Maroc	Morocco			la cathédrale	the cathedral	nul	rubbish
au Mexique	Mexico			la mosquée	the mosque	<b>Ce n'était pas mal</b>	It wasn't bad
au Portugal	Portugal			la chocolaterie	the chocolate shop		
aux États-Unis	USA						

Qu'est-ce que tu as fait?	What did you do?
<b>Pendant les vacances...</b>	<b>During the holidays...</b>
J'ai joué au tennis/au foot	I played tennis/football
J'ai mangé des glaces	I ate ice creams
J'ai écouté de la musique	I listened to music
J'ai acheté des baskets	I bought trainers
J'ai regardé un film à la télé	I watched a film on TV
J'ai nagé dans la mer	I swam in the sea
J'ai retrouvé mes amis	I met my friends
J'ai entraîné à la maison	I hung around at home

Qualifiers	
un peu	a bit
assez	quite
très	very
trop	too
vraiment	really

Sequencers	
d'abord	first of all
ensuite	next/then
puis	then
après	after
finalement	finally

The perfect tense with ÊTRE		
Some verbs use the verb ÊTRE in the perfect tense. One example is ALLER, the verb to go.		
<b>1. ÊTRE, present tense</b>	<b>2. Past participle (remember to add an extra e for females and s for plurals).</b>	
Je suis	allé(e)	I went
Tu es	allé(e)	You went
Il/Elle/On est	allé(e)	He/She/We went
Nous sommes	allé(e)s	We went
Vous êtes	allé(e)s	You went
Ils/Elles sont	allé(e)s	They went

The perfect tense with AVOIR		
The perfect tense is used to say what you did or have done in the past.		
To form the perfect tense of most verbs, you need:		
1. The present tense of the verb AVOIR (to have)		
2. A past participle (joué/mangé etc.)		
To form the past participle for regular -er verbs, remove the <b>infinitive -er</b> ending and replace with <b>é</b> e.g. <b>regarder – regardé</b>		
<b>1. AVOIR, present tense</b>	<b>2. Past participle</b>	
J'ai	mangé	I ate
Tu as	acheté	You bought
Il/Elle/On a	nagé	He/She/We swam
Nous avons	joué	We played
Vous avez	écouté	You listened
Ils/Elles ont	visité	They visited

Au parc d'attractions	At the theme park
J'ai bu un coca	I drank a coke
J'ai vu un spectacle	I saw a show
J'ai vu mes personnages préférés	I saw my favourite characters
J'ai fait une balade en bateau	I went on a boat ride
J'ai fait tous les manèges	I did all the rides
J'ai pris des photos	I took photos
Je n'ai pas mangé de glaces	I didn't eat ice creams
Je n'ai pas acheté de souvenirs	I didn't buy souvenirs
Look out for irregular past participles :	
boire (to drink) - <b>bu</b> (drank)	prendre (to take) - <b>pris</b> (took)
voir (to see) - <b>vu</b> (saw)	faire (to do) - <b>fait</b> (did)

Avec qui?	Who with?
ma famille	my family
mon collègue	my class/school
mes ami(e)s	my friends
mes parents	my parents
mon frère	my brother
ma sœur	my sister

Tu as voyagé comment?	How did you travel?
J'ai voyagé...	I travelled...
Nous avons voyagé...	We travelled...
en avion	plane
en train	train
en bateau	boat
en voiture	car
en car	coach



# French

## Y8 Autumn term Knowledge Organiser

### Unit 2: Les fêtes –

Quelle est ta fête préférée ?	What's your favourite festival?
<b>Ma fête préférée</b>	<b>My favourite festival is...</b>
c'est...	Christmas
Noël	Easter
Pâques	my birthday
mon anniversaire	All Saint's Day
la Toussaint	Valentine's Day
le Saint-Valentin	New Year
le Nouvel An	Pancake Day
la Chandeleur	Eid
l'Aïd	Carnival
le carnaval	Bastille Day
le 14 juillet	

Pourquoi ?	Why?
<b>Parce que...</b>	<b>Because...</b>
<b>J'aime/J'adore...</b>	<b>I like/I love</b>
<b>Je n'aime pas...</b>	<b>I don't like...</b>
<b>Je déteste...</b>	<b>I hate...</b>
<b>Je préfère...</b>	<b>I prefer...</b>
manger du chocolat	to eat chocolate
acheter des cadeaux	to buy presents
danser et chanter	to sing and dance
faire une soirée	to have a sleepover
pyjama	to visit my cousins
rendre visite à mes cousins	
<b>Parce que c'est...</b>	<b>Because it is...</b>
amusant/ennuyeux/ nul/sympa/ bête trop commercial	fun/boring/ rubbish/nice/ silly too commercialised

Comment fêtes-tu ?	How do you celebrate?
Je retrouve mes copains	I meet my friends
Je mange des crêpes	I eat pancakes
Je danse	I dance
Je porte un masque et un déguisement	I wear a mask and a disguise
Je regarde la parade	I watch the parade
Je partage des photos	I share photos

The present tense
The present tense is used to talk about what usually happens, or what is happening now. <i>Je danse</i> means 'I dance' and 'I am dancing'
To form the present tense of most verbs:
1. Choose the correct subject pronoun (je/tu/il/elle...)
2. Remove the -er/-ir/-re ending from the infinitive verb.
3. Add the appropriate ending from the table below.

Subject pronoun	-er verbs (JOUER)	-ir verbs (FINIR)	-re verbs (VENDRE)
Je/J'	joue	finis	vends
Tu	joues	finis	vends
Il/Elle/On	joue	finit	vend
Nous	jouons	finissons	vendons
Vous	jouez	finissez	vendez
Ils/Elles	jouent	finissent	vendent

Décris la photo	Describe the photo
<b>Sur la photo il y a...</b>	<b>In the photo there is...</b>
un homme/une femme	a man/woman
un garçon/une fille	a boy/girl
Il/Elle danse	He/She is dancing
Il/Elle mange...	He/She is eating
Il/Elle chante	He/She is singing
Il/Elle porte...	He/She is wearing
Il fait beau/mauvais	The weather is good/bad
For multiple people: <b>Ils/Elles dansent.</b> The <b>-s</b> and <b>-ent</b> are silent.	

Au marché	At the market
Vous désirez ?	What would you like?
Je voudrais...s'il vous plaît	I would like...please
Et avec ça ?	Anything else?
C'est tout, merci.	That's everything, thanks.
Ça fait combien ?	How much is it?
Ça fait...euros.	It's...euros.
Voilà.	Here you go.
Bonne journée !	Have a good day!

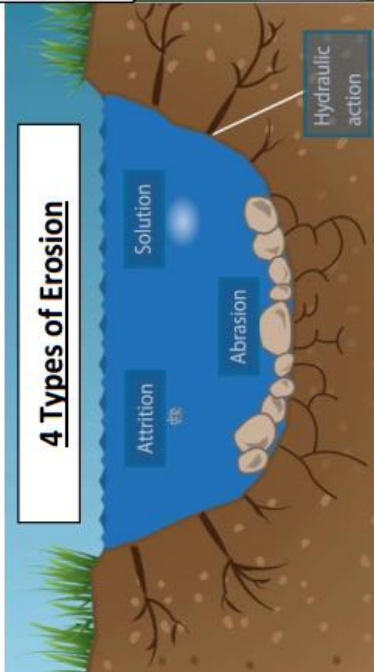
Qu'est-ce que tu vas faire ?	What are you going to do?
<b>Je vais...</b>	<b>I'm going to...</b>
visiter le marché de Noël	visit the Christmas market
acheter des cadeaux	buy presents
admirer les maisons illuminées	admire the illuminations
écouter des chorales	listen to some choirs
manger une tarte flambée	eat a tart
boire un jus de pomme chaud	drink a hot apple juice

The near future tense	
To talk about things that are going to happen, use <b>ALLER</b> in the present tense, followed by an infinitive verb.	
<b>ALLER, present tense</b>	<b>Infinitive verb</b>
Je vais	acheter
Tu vas	manger
Il/Elle/On va	boire
Nous allons	visiter
Vous allez	écouter
Ils/Elles vont	choisir
I am going to buy	
You are going to eat	
He/She/We are going to drink	
We are going to visit	
You (pl.) are going to listen	
They are going to choose.	

Au marché	Au marché
du poisson	some fish
de la salade	some lettuce
de l'eau	some water
des haricots verts	some green beans
un morceau de fromage	a piece of cheese
une tranche de jambon	a slice of ham
un chou-fleur	a cauliflower
une douzaine d'œufs	a dozen eggs
un kilo d'oignons	1kg of onions
un demi-kilo de pommes	½ a kilo of apples
2 kilos de pommes de terre	2kg of potatoes
cent grammes de tomates	100g of tomatoes
six bananes	six bananas
When buying food you can use:	
1. the indefinite article: <b>une pomme</b>	
2. a number: <b>six pommes</b>	
3. a quantity followed by <b>de</b> : <b>un kilo de pommes</b>	



# YEAR 8 Rivers and Coasts



## 4 Types of Erosion

Attrition	Rocks in the river/sea bump into each other, breaking up, becoming rounder/smoothier.
Abrasion	Material being carried scrapes river beds/cliffs wearing them down.
Solution/Corrosion	Certain rocks are dissolved by river/sea water.
Hydraulic Action	The force of water expands crack in river banks and coastal cliffs.

## Coasts Case Study – Happisburgh Norfolk

### Reasons for coastal management

The coastline is eroding at an average of 2 metres a year.

- Rock type – the cliffs are made from less resistant boulder clay (made from sands and clays) which slumps when wet.
- Naturally narrow beaches – these beaches give less protection to the coast as they don't reduce the power of the waves.
- Man-made structures – groynes have been installed to stop longshore drift and build up the beaches in certain places. This narrows unprotected beaches elsewhere even further, as new sand does not come down to replace sand eroded by waves.
- Powerful waves – waves at Happisburgh travel long distances over the North Sea (so have a long fetch) which means they will increase in energy.

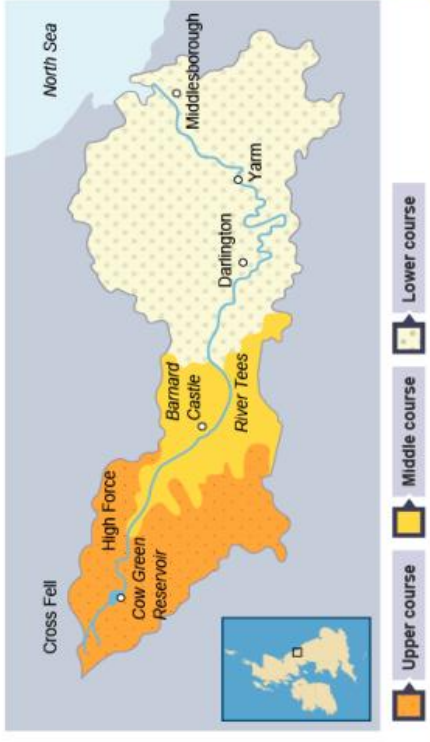
Break it: **Erosion** is the wearing away of rock  
 Move it: **Transportation** is the movement of material  
 Make it: **Deposition** is the dropping off of material

## Weathering Types and Causes

	<b>Physical</b> Heating and cooling, water, wind and ice expansion.
	<b>Chemical</b> Substances in the air and in rain.
	<b>Biological</b> Plants and animals.

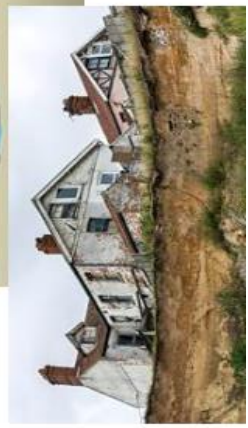
## Case study - river landforms: River Tees

The River Tees is located in the north of England. The source of the River Tees is located in the Pennines and it flows east to its mouth where the river joins the North Sea.



### Types of transportation

<b>Suspension</b> A. Fine material such as clay and sediment is carried by the river.	<b>Solution</b> B. Dissolved minerals are carried by the river.
<b>Traction</b> C. Large boulders and pebbles are rolled along the river bed.	<b>Saltation</b> D. Small stones, pebble and silt bounces along the river bed.



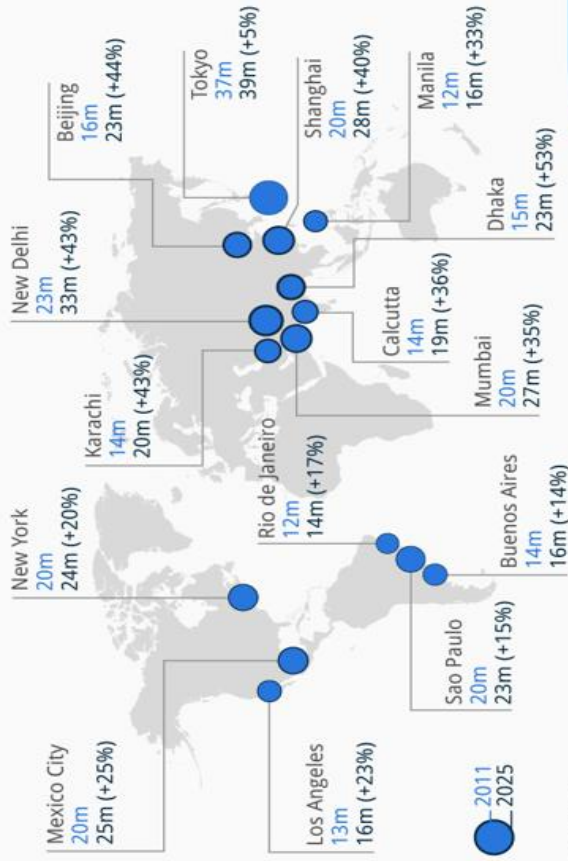


# Year 8 Geography: Population

Key Term	Definition
Population	The number of people living in a geographical area. The population of the world is approximately 7.8 billion people.
Megacity	A large city with a population over 10 million.
Population density	The number of people per unit of area, usually quoted per square kilometre or square mile.
Birth rate	The number of babies born every year per 1000 people in a population.
Death rate	The number of deaths that occur every year per 1000 people in a population.
Population pyramid	A graphical illustration that shows how many males and females of different age groups are in a population.

## The World's Megacities Are Set for Major Growth

Population growth of the world's top 15 megacities (millions, 2011-2025)



\* Including metropolitan areas  
Source: UN Population Division, World Economic Forum

statista

## Key ideas

The world population is expected to reach **8 billion people by 2023**. Currently the highest levels of population growth are in the continents of Asia and Africa. Population growth in most parts of Europe is slowing or declining.

An **ageing population** occurs due to rising life expectancy and a declining birth rate within a population. This causes an increase in the average age of the population. In **Japan**, the number of people aged 65 years or older nearly has quadrupled in the last forty years, to 33 million, while at the same time the birth rate has declined. This has created social and economic problems for Japan.

The **One Child Policy** was a policy introduced in **China**, between 1979 and 2015, that limited most families to only having one child. The Chinese government was afraid that its birth rate was too high, and it would not be able to care for its population. The policy was relaxed in 2015 and most families are now permitted to have two children.

# Y8 German - Autumn Term 1

## Regular verbs

With regular verbs, remove the ending -en and add the ending that goes with the pronoun (person).

spielen- to play  
spiel(-en)

ich spiel(e)	I play
du spiel(st)	you play
er spiel(t)	he plays
sie spiel(t)	she plays
man spiel(t)	one plays
wir spiel(en)	we play
ihr spiel(t)	you (plural) play
sie spiel(en)	they play

## fahren – to travel/ ride/ go

ich fahre	I travel
du fährst	you travel
er fährt	he travels
sie fährt	she travels
wir fahren	we travel
ihr fahrt	you travel (plural)
sie fahren	they travel

## schlafen – to sleep

ich schlafe	I sleep
du schläfst	you sleep
er schläft	he sleeps
sie schläft	she sleeps
wir schlafen	we sleep
ihr schlaft	you sleep (plural)
sie schlafen	they sleep

## treffen – to meet

ich treffe	I meet
du triffst	you meet
er trifft	he meets
sie trifft	she meets
wir treffen	we meet
ihr trefft	you meet (plural)
sie treffen	they meet

## haben - to have

ich habe	I have
du hast	you have
er hat	he has
sie hat	she has
man hat	one has
es hat	it has
wir haben	we have
ihr habt	you have (plural)
sie haben	they have

## sehen – to see

ich sehe	I see
du siehst	you see
er sieht	he sees
sie sieht	she sees
wir sehen	we see
ihr seht	you see (plural)
sie sehen	they see

## lesen – to read

ich lese	I read
du liest	you read
er liest	he reads
sie liest	she reads
wir lesen	we read
ihr lest	you read (plural)
sie lesen	they read

## sein – to be

ich bin	I am
du bist	you are
er ist	he is
sie ist	she is
man ist	one is
es ist	it is
wir sind	we are
ihr seid	you are (plural)
sie sind	they are

## essen – to eat

ich esse	I eat
du isst	you eat
er isst	he eats
sie isst	she eats
wir essen	we eat
ihr esst	you eat (plural)
sie essen	they eat

## tragen – to wear

ich trage	I wear
du trägst	you wear
er trägt	he wears
sie trägt	she wears
wir tragen	we wear
ihr tragt	you wear (plural)
sie tragen	they wear

## Jahreszeiten Seasons

Frühling	Spring
Sommer	Summer
Herbst	Autumn
Winter	Winter

## Connectives

und	and
oder	or
aber	but
den	because

## Frequency words

immer	always
oft	often
manchmal	sometimes
selten	rarely
nie	never

## Five key words

Frühling	Spring
faulenzten	to laze around
er isst	he eats
ich treffe	I meet
ich fahre	I travel

## Y8 German - Autumn Term 2

### Kleider/ Klamotten Clothes

der Rock	skirt
der Mantel	coat
der Anzug	suit
der Kapuzenpulli	hoodie
die Jeanshose/ die Jeans	jeans
die Hose	trousers
das Kleid	dress
das Hemd	shirt
das T-Shirt	T-shirt
die Schuhe	shoes
die Stiefel	boots
die Sandalen	sandals

### Was trägst du? What do you wear? What are you wearing?

ich trage...	I wear/ I am wearing
einen kurzen Rock	a short skirt
einen langen Mantel	a long coat
einen lockeren Kapuzenpulli	a casual hoodie
eine weite Hose	a baggy pair of trousers
eine schmale Jeanshose	a pair of skinny jeans
ein kariertes Hemd	a checkered shirt
ein gepunktetes Kleid	a spotty dress
ein gestreiftes T-Shirt	a stripy T-shirt
schicke Stiefel	smart boots

### Five key words

die Schuhe	the shoes
trending	trendy
ich ziehe mich an	I get dressed
einige Leute	some people
viele Kinder	many children

### Wie ist es? What is it like?

kurz	short
lang	long
weit	wide-leg/ baggy
schmal	slim-leg/ skinny
schick	smart
locker	casual
kariert	checkered
gepunktelt	spotty/ polka dot
gestreift	stripy
glänzend	glittery

### ein erstes Date

#### Was wirst du machen?

ich werde...	I will...
die Karten im Voraus kaufen	buy the tickets in advance
einen guten Film auswählen	choose a good film
früh ankommen	arrive early
abholen	pick up
etwas Schickes anziehen	put on something smart
genug Geld mitnehmen	take enough money with me
mit dem Bus in die Stadt fahren	go by bus to town
ins Kino gehen	go to the cinema
essen gehen	go out to eat

### A first date

#### What will you do?

ich werde...	I will...
die Karten im Voraus kaufen	buy the tickets in advance
einen guten Film auswählen	choose a good film
früh ankommen	arrive early
abholen	pick up
etwas Schickes anziehen	put on something smart
genug Geld mitnehmen	take enough money with me
mit dem Bus in die Stadt fahren	go by bus to town
ins Kino gehen	go to the cinema
essen gehen	go out to eat

### Wie ist dein Stil?

#### What is your style?

lässig	informal
trendig	trendy
sportlich	sporty
klassisch	classic

### ich mache mich fertig

ich style mir die Haare	I style my hair
ich mache mir die Haare	I do my hair
ich putze mir die Zähne	I brush my teeth
ich schminke mich	I put on make-up
ich ziehe mich an	I get dressed
ich sehe mich im Spiegel an	I look at myself in the mirror
ich benutze ein Deo	I put on deodorant
ich wähle meine Kleider aus	I choose my clothes

### I get myself ready

ich style mir die Haare	I style my hair
ich mache mir die Haare	I do my hair
ich putze mir die Zähne	I brush my teeth
ich schminke mich	I put on make-up
ich ziehe mich an	I get dressed
ich sehe mich im Spiegel an	I look at myself in the mirror
ich benutze ein Deo	I put on deodorant
ich wähle meine Kleider aus	I choose my clothes

### High frequency words

wenn	when/ if
immer	always
zum Beispiel	for example
zuerst	first of all
seit	since/ for
für	for
möglich	possible
pro Jahr	per year
nächstes Jahr	next year
teuer	expensive
alle	all/ everyone
um... zu	in order to

### Diskussion und Debatte

Viele/ Einige Leute sagen	Many/some people say
Meiner Meinung nach	In my opinion
Erstens	Firstly
Zweitens	Secondly
Schließlich	Finally
Du hast gesagt ... aber ich denke	You said... but I think
Auf der einen Seite	On the one hand

### Discussion and debate

Viele/ Einige Leute sagen	Many/some people say
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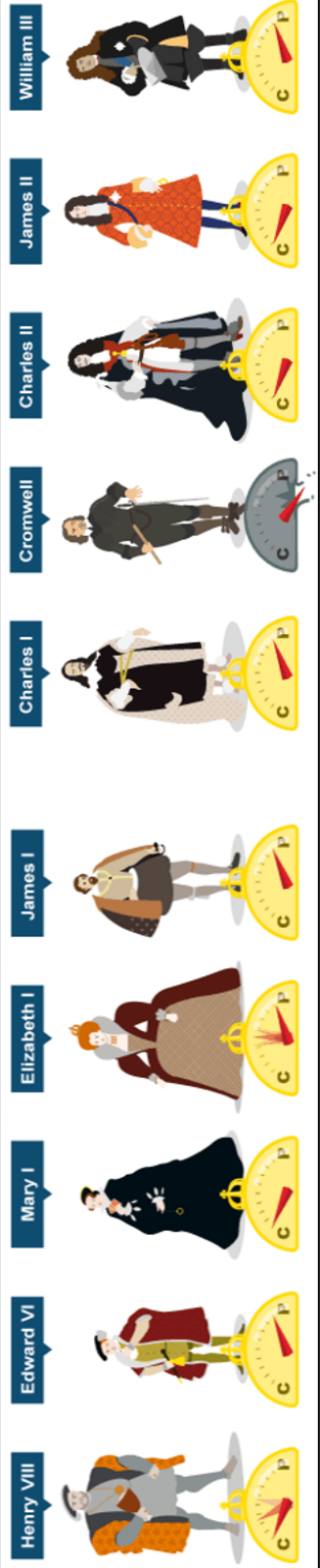


Chronology		Key People	Role	Key discoveries / ideas
1603	Elizabeth 1 dies, James 1 becomes the first Stuart monarch.	Matthew Hopkins	The Witch finder General	In 1533, Henry VIII broke from the church and married the now pregnant Anne Boleyn in a secret ceremony. This solved his heir problem, but Henry was excommunicated by the Pope. The English Reformation had begun.  James I was a Protestant but was tolerant towards the Catholics. However he introduced strict anti-Catholic laws after the Gunpowder Plot. Charles I tried to introduce Arminian changes. Arminianism is a form of Protestantism that has a lot in common with Catholicism. Charles ended up fighting a civil war against Oliver Cromwell – who was a Puritan (a very strict Protestant who wanted to get rid of ritual in church services and lead a plain and simple life).  The printing press is thought to have been invented in Germany by Johannes Gutenberg around 1450 and by the end of the century printed books were available in London. This meant that ideas could be printed and spread quickly.
1605	Gunpowder plot	Charles I	Son of James 1	
1625	Charles I becomes King.	Charles II	The son of Charles I	
1629	Charles dissolves parliament for the next 11 years. 'Personal rule'.	James I	The first Stuart King	
1633	Charles appoints William Laud as Archbishop.	Henrietta Maria	Wife of Charles I	
1634	Charles expands 'ship money'	Pym	Organised the Grand Remonstrance.	
1637	Leading puritans are mutilated	Robert Catesby	Leader of the Gunpowder plotters.	
1637-39	Charles tries to introduce a new Prayer book in Scotland	Guido Fawkes	Gunpowder expert found in the cellar.	
1640	The Long Parliament	Prince Rupert	Nephew of Charles I. In charge of the Royalist Cavalry.	
1641	The Grand Remonstrance	John Bradshaw	Led the trial of Charles I	
1642	Charles tries to arrest 5 MIPS	Oliver Cromwell	Puritan army leader of the roundheads.	
Jan.		Lord Fairfax	Led the New Model Army	
1642 March	Parliament takes control of the army.	William Laud	Appointed Archbishop of Canterbury.	
1642 June	Nineteen Propositions	Burton, Prynne and Bastwick	Wrote pamphlets criticising Charles.	
1642 August	Charles raised his standard at Nottingham - War began.			
1642	Battle of Edgehill			
1644	Battle of Marston Moor			
1645	Battle of Naseby			
1645-46	Witch Craze			
1646-48	Second Civil War			
1649	Execution of Charles			
1649-60	Interregnum			
<p><b>Common misconceptions</b></p> <p>At least one in 10 – or perhaps as many as one in five – men in England and Wales fought in the Civil War. It has been calculated that loss of life, in proportion to the national population of the time, was greater than in the First World War.</p> <p>In England, witchcraft became a crime in 1542, a statute renewed in 1562 and 1604. As such, most witches across Europe received the usual penalty for murder – hanging (though in Scotland and under the Spanish Inquisition witches were burned).</p> <p>The Gunpowder plot was led by Robert Catesby.</p>				<p><b>Useful Websites/books/films/documentaries</b></p> <p><a href="https://www.bbc.co.uk/bitesize/guides/zky82hv/revision/1">https://www.bbc.co.uk/bitesize/guides/zky82hv/revision/1</a></p> <p><a href="https://kids.britannica.com/kids/article/English-Civil-War/476240#:~:text=The%20English%20Civil%20War%20was,when%20England%20had%20no%20monarch.">https://kids.britannica.com/kids/article/English-Civil-War/476240#:~:text=The%20English%20Civil%20War%20was,when%20England%20had%20no%20monarch.</a></p> <p><a href="https://www.youtube.com/watch?v=KDvQw9SzoV0">https://www.youtube.com/watch?v=KDvQw9SzoV0</a></p> <p><a href="https://www.youtube.com/watch?v=cEE1FbHzt0">https://www.youtube.com/watch?v=cEE1FbHzt0</a></p> <p><a href="https://www.youtube.com/watch?v=bqi0Wd68Mio">https://www.youtube.com/watch?v=bqi0Wd68Mio</a></p> <p><a href="https://vimeo.com/290470347">https://vimeo.com/290470347</a></p>

## Key words and concepts

<p><b>1. Monarch</b></p> <p>The king or queen</p>	<p><b>2. Roundhead</b></p> <p>The term given to the soldiers that fought for Parliament. Named after their short haircuts!</p>	<p><b>3. Divine Right</b></p> <p>The belief held by Kings &amp; Queens that they had been appointed by God to rule.</p>	<p><b>4. Puritan</b></p> <p>A very strict form of Protestantism. Many MPs were Puritans.</p>	<p><b>5. Reformation</b></p> <p>A movement in the 16<sup>th</sup> century which led to the foundation of Protestantism.</p>
<p><b>6. Treason</b></p> <p>The crime of betraying one's country, especially by attempting to kill or overthrow the sovereign or government.</p>	<p><b>7. Cavaliers</b></p> <p>The term given to soldiers on horses. They fought for the King in the English Civil War.</p>	<p><b>8. Ship Money</b></p> <p>A tax normally paid by Coastal towns. Charles extended this inland.</p>	<p><b>9. Grand Remonstrance</b></p> <p>Organised by John Pym. A summary of all the criticisms that Parliament had with the King.</p>	<p><b>10. Parliament</b></p> <p>Called by the king when he chose. Approved laws and proposed their own. Were supposed to approve all taxes.</p>
<p><b>11. Nineteen Propositions</b></p> <p>A set of demands that parliament laid out to Charles.</p>	<p><b>12. Declaration of Breda</b></p> <p>Promises that Charles II made to restore the monarchy.</p>	<p><b>13. Republic</b></p> <p>A country with elected representatives.</p>	<p><b>14. Civil War</b></p> <p>A war between citizens of the same country.</p>	<p><b>15. Levellers</b></p> <p>A group who wished to abolish the monarchy.</p>
<p><b>16. New Model Army</b></p> <p>England's first professional army.</p>	<p><b>17. The Long parliament</b></p> <p>From 1640 parliament was in session for the next 20 years.</p>	<p><b>18. Royalist</b></p> <p>Someone who supports the monarchy.</p>	<p><b>19. Witch craze</b></p> <p>People were accused of witchcraft in larger numbers.</p>	<p><b>20. Conspiracy</b></p> <p>A secret plan to do something harmful.</p>
<p><b>21. Lord Protector</b></p> <p>Oliver Cromwell's title.</p>	<p><b>22. Regicide</b></p> <p>The act of killing a king.</p>	<p><b>23. Interregnum</b></p> <p>In between kings.</p>	<p><b>24. Superstition</b></p> <p>Belief in the super-natural.</p>	<p><b>25. Tyrant</b></p> <p>A cruel and oppressive ruler.</p>

## Important images - Catholic or Protestant?



# SIMPLIFYING & MANIPULATING ALGEBRA

## Key Concept

Formula

$$V = U + at$$

Expression

$$f^2 + f^2 + f^2$$

Equation

$$34 = 12 + 6t$$

Identity

$$C \times C = C^2$$



Clip Numbers

154-169, 548-550

## Key Words

**Formula:** A rule written using symbols that describe a relationship between different quantities.

**Expression:** Shows a mathematical relationship whereby there is no solution.

**Equation:** A mathematical statement that shows that two expressions are equal.

**Identity:** A relation which is true. No matter what values are chosen.

## Tip

When expanding brackets be careful with negatives.

## Examples

Simplify:

$$\begin{array}{l} 4a + 3b - a + 2b \\ = 3a + 5b \end{array}$$

Expand and simplify:

$$\begin{array}{l} 9a - 2(3a - 4) \\ 9a - 6a + 8 \\ 3a + 8 \end{array}$$

Factorise:

$$9x^2 + 6x$$

Factorising is the opposite of expanding brackets

3x is common to both terms

$$3x(3x + 2)$$

Expand and simplify:

$$\begin{array}{l} 2(4a + 2b) - 2(a + 3b) \\ 8a + 4b - 2a - 6b \\ 6a - 2b \end{array}$$

## Questions

- 1)  $5x + 3y - 2x + 4y$     2)  $2p - 6q + 2q + 4p$     3)  $12b - 3(2b + 5)$   
 4) Factorise a)  $4x + 10$     b)  $8a^2 - 10a$

- ANSWERS: 1)  $3x + 7y$     2)  $6p - 4q$     3)  $6b - 15$   
 4) a)  $2(2x + 5)$     b)  $2a(4a - 5)$

# SOLVING EQUATIONS

## Key Concept

Inverse Operations

Operation	Inverse
+	-
-	+
$\times$	$\div$
$\div$	$\times$
$x^2$	$\sqrt{x}$

To check your answer, use substitution

## Key Words

**Unknown:** A letter which represents a number we do not know the value of.

**Terms:** The numbers and letters in the expression or equation.

**Inverse:** The operation which will do the opposite.

## Tip

Answers can be:

- Integers
- Decimals
- Fractions
- negatives

## Examples

$x + 9 = 16$ -9 -9 $x = 7$	$x - 12 = 20$ +12 +12 $x = 32$	$\frac{x}{3} = 5$ $\times 3 \times 3$ $x = 15$	$2x + 5 = 14$ -5 -5 $2x = 9$ $\div 2 \div 2$ $x = 4.5$
----------------------------------	--------------------------------------	--	--

$\frac{x}{4} - 2 = 4$ +2 +2 $\frac{x}{4} = 6$ $\times 4 \times 4$ $x = 24$	$2(3x + 5) = -14$ expand $6x + 10 = -14$ -10 -10 $6x = -24$ $\div 6 \div 6$ $x = -4$	$2x + 7 = 5x + 1$ -2x (smallest x term) $+7 = 3x + 1$ -1 -1 $6 = 3x$ $\div 3 \div 3$ $2 = x$
--	--	---

## Questions

- $x + 8 = 19$
- $y - 25 = 15$
- $2y = 82$
- $\frac{t}{4} = 7$
- $\frac{p}{2} - 6 = 2$
- $3(2x - 3) = 15$
- $4x - 8 = 2x + 1$

ANSWERS: 1)  $x = 11$ , 2)  $y = 40$ , 3)  $y = 41$ , 4)  $t = 28$ , 5)  $p = 16$ , 6)  $x = 4$ , 7)  $x = 4.5$  or  $9/2$



# Music

## Introduction to Music Technology/Musical Futures

<b>An introduction to the key terms of Music Technology</b>	
<b>DAW</b>	Digital Audio Workstation – a computer programme (for example Garageband, Soundlab, Cubase, Logic) that allows music to be created and recorded.
<b>Audio</b>	Sound that has been recorded
<b>Sample</b>	Taking a pre-recorded piece of audio and using it in another piece of music
<b>Loop</b>	A sample that is repeated
<b>Remix</b>	Reworking a song into a different style.
<b>Key term - Effects</b>	
A process by which a sound can be changed or manipulated	
<b>Reverb</b>	An effect that changes the sound of the space that is performed or recorded in
<b>Delay</b>	An effect that repeats the sound like an echo
<b>EQ</b>	An effect that changes the frequency (tone quality) of the sound
<b>Instruments</b>	
<b>Synthesizer</b>	An electronic instrument that generates sound
<b>Drum Machine</b>	An electronic drum kit
<b>Key term - Texture</b>	
<b>Layered Texture</b>	A texture often referred to in pop and dance music where the texture is developed by adding and removing parts one at a time.

<b>Music Technology Vocabulary</b>	
<b>Multitrack</b>	Multiple tracks of audio layered together
<b>Pan</b>	Moving sound either left or right of the speakers or headphones
<b>Solo</b>	Playing only one track at a time
<b>Mute</b>	Silences a track
<b>Quantization</b>	Moving notes to lock into an accurate rhythmic grid, allowing correction when notes are slightly out of time
<b>Velocity</b>	The volume of each individual note
<b>Overdubbing</b>	Where multiple tracks are recorded separately at different times.
<b>Reverse</b>	The audio is played backwards

<b>Music Technology</b>	
<b>Practical Skills</b>	Learning how to edit and arrange music using computer software.
<b>Listening</b>	Identification and application of vocabulary relating to music technology
	Listening to songs to identify main structural features
<b>Performing</b>	Using a DAW to arrange and record music from pop and dance tracks
<b>Composing</b>	Compose, record and edit simple melodic lines and chord patterns using technology
<b>Contextual knowledge</b>	Short research project based upon Electronic music styles and composers

# Music

## Introduction to Music Technology/Musical Futures

<b>Key term – Chords/Harmony</b>	
Revising and developing knowledge of chords and triads from previous unit (Y7/2)	
<b>Major Chords</b>	I, IV, V
<b>Minor Chords</b>	ii, iii, vi
<b>Bass line</b>	Recognising the importance of a bass line in supporting the harmony
<b>Key term - Structure</b>	
Learning about the structural sections of a typical song	
<b>Introduction</b>	The opening
<b>Verse</b>	A section where the music is the same, but the lyrics change each time it is heard
<b>Bridge</b>	A section linking two sections, often between the verse and chorus
<b>Chorus</b>	The most memorable section with a catchy hook that is repeated several times during the song
<b>Middle 8</b>	A contrasting section often after the second chorus
<b>Outro</b>	The closing section often fading out.
<b>Instrumental</b>	A section with no lyrics but an instrumental solo

<b>Musical Futures</b>	
<b>Skills</b>	Learning chord sequences and performance techniques on a range of instruments
<b>Listening</b>	Listening to original versions of songs performed to identify performance features
<b>Performing</b>	Performing songs in class using a variety of instruments and voices.



## 8.1 & 8.2 KS3 Core PE Knowledge Organiser: Immediate Effects of Exercise on the Body

Immediate Effects of Exercise on the Body		Body System
Immediate Effects of Training		<b>The Skeletal System</b>
1	Increase temperature of <b>synovial fluid</b> in joints	<b>The Muscular System</b>
2	<b>Increased</b> flexibility	
3	<b>Rise</b> in muscle <b>temperature</b>	
4	<b>Increased</b> blood flow to muscles	
5	<b>Increased</b> flexibility	
6	Muscle <b>fatigue</b> and <b>soreness</b> , sometimes <b>cramp</b> (due to increased lactate production)	
7	<b>Lactate accumulation</b> , if oxygen not supplied quick enough due to working anaerobically	
8	<b>Increased</b> heart rate, cardiac output and stroke volume	
9	<b>Blood diverted to muscles</b> from digestion and other systems ( <b>vascular shunting</b> )	
10	<b>Increase in blood pressure</b>	
11	<b>Increased</b> rate of breathing	
12	<b>Increased rate of gaseous exchange</b> (uptake of O <sub>2</sub> and production of CO <sub>2</sub> )	
13	<b>Increased</b> depth of breathing ( <b>tidal volume</b> )	
14	<b>Oxygen deficit</b> (if oxygen supply cannot meet demand)	
		<b>The Cardiovascular System</b>
		<b>The Respiratory System</b>

### Key Vocabulary:

Skeletal, Muscular, Cardiovascular, Respiratory, Muscles, Lactic acid (lactate), Flexibility, Heart rate, Blood, Breathing, Gaseous exchange, Oxygen, Carbon Dioxide



### Common Misconceptions:

- **Immediate (short term) effects** – the way the body responds as soon as it starts to exercise or responds to an increase of intensity. These changes help to meet the increased demands.
- **Adaptations (long term) effects** – regular exercise or training will lead to adaptations of the body systems increasing performance in that type of exercise or sport and beneficial to general health.



**Example question:**

Q) Which one of the following is a **short-term effect** of exercise on the **cardio-respiratory** system?  
A – decrease in heart rate  
B – increase in muscle strength  
C – decrease in breathing rate  
D – increase in blood pressure

**Command Word: WHICH**

Mainly used in multiple-choice questions where a selection from a set of options is required, for example 'Which one of the following....?'

*Hint - Process of elimination can be good for multiple choice questions where you are unsure of the correct answer. Start by working out which answers are definitely incorrect. Use the keywords in the question to help you.)*

**Command Word: EXPLAIN** Requires a justification/exemplification of a point.

The answer must contain some linked reasoning

**Worked example:**

Q) **Explain why sports performers may reduce the intensity they are working at during a game. (4 marks)**

They may experience muscle fatigue (1). This occurs when the muscle is not able to produce the energy it needs for the level of activity, due to an increase in acidity in the muscle cells (1). This slows energy production (1), meaning that the muscles have to reduce the intensity they are working at to allow the muscles time to recover (1).

**Applied to different sports...**

For a **footballer** this may mean... less pace, losing their opponent and less impact on the game.  
A **1500m runner** may become...not able to run as fast in later laps and record a slower time  
*What about in your favourite sport?*



Indirectly, exercise improves mood and sleep, and reduces stress and anxiety. Problems in these areas frequently cause or contribute to cognitive impairment.



No matter what your current weight, being active boosts high-density lipoprotein (HDL), or "good," cholesterol and decreases unhealthy triglycerides.



Winded by grocery shopping or household chores? Regular physical activity can improve your muscle strength and boost your endurance.



Over 70% of the body's immune cells are produced in the gut, meaning the majority of our immune system is housed in the gut.



From boosting cognitive function to improving outcomes for prostate cancer patients to treating chronic pain, being physically active can improve overall health.



Regular physical activity can keep the muscles around affected joints strong, decrease bone loss and may help control joint swelling and pain.



Exercise should definitely be the mainstay of the prevention and treatment of osteoporosis; often however, physicians don't have enough know-how for evidencebased prescription of exercise.



Resistance exercises strengthen muscles, which, in turn, provide better support and protection for the foot as a whole.

## Religious Studies Year 8: Prejudice and Discrimination

Key Word	Definition
Prejudice	Pre-judging someone before you know them.
Discrimination	Treating someone differently because of eg race
Racism	Prejudice / discrimination based on ethnicity.
Gentile	A term used for someone who is not Jewish.
Anti-Semitism	Treating Jewish people with hostility.
The Shoah	Hebrew name for the Nazi destruction of Jews.
Slave Trade	Usually means black Africans transported and sold as slaves by European nations / North America.
Civil Rights Movement	Fighting for justice for black Americans.
Sexism	Gender prejudice.
Burka / burqa	One-piece veil covering face and body worn by some Muslim women.
Caste system	Classes within traditional Indian (Hindu?) society.
Outcaste	Someone outside the caste system, sometimes called an untouchable.

### Key Quotes

Judaism / Christianity: 'All humans created in God's image' (Genesis)

Christianity: Jesus taught the Parable of the Good Samaritan and 'Love your neighbour'

Christianity: "So there is no difference between Jews and Gentiles, between slaves and free men, between men and women; you are all one in union with Christ Jesus." (St Paul in Galatians 3)

Islam : The Qur'an "Husbands should take good care of their wives"

### What is prejudice and why?

Prejudice can lead to discrimination, where a person / group are treated differently. Prejudice is thoughts, discrimination puts it into actions. We usually think of prejudice and discrimination as negative and divisive, but some talk of positive discrimination, where a group is treated more favourably to counteract past prejudices. Why are humans prejudiced? We don't like difference, it can threaten us, make us afraid, or we can be jealous of a group, thinking that we would like to have what they have.



### Racism

Racism includes colour prejudice, judging differently because of skin colour, and prejudice based on different nationalities. In the past countries like Britain participated in the slave trade, assuming whites were the superior race. Some Christians misused Bible teachings to justify this. There is continuing acknowledgement of the evils of the slave trade and other forms of racism. Most modern Christians would want to point to Jesus as someone who welcomed everyone regardless of their race. In the 20<sup>th</sup> century Rev Dr Martin Luther King is an example of a Christian who fought against racism with some success. He was a leader in the Civil Rights Movement and his dream was for equality.



### Sexism

Gender prejudice is judging someone differently based on their gender. It is often assumed that women are seen as less important within Islam, with non-Muslims pointing to women wearing burkas as an example of this. However Muslims stress men and women are equal but different. Women have a key role to play in the home, while men have a duty to look after the family financially, but a woman may choose to work – and many Muslim women have become successful in business. Malala Yousafzai is an example of a Muslim who has spoken out for gender equality. Some Muslim countries like Saudi Arabia do have rules which seem to discriminate against women, but other Muslims point out this is about culture, not religion.



### Anti-Semitism

Jewish people have too often been treated badly by others, most notably by Nazi Germany, with the Shoah culminating in the death of approximately 6 million Jews in death camps such as Auschwitz. In Europe Jews have been a minority, and the Christian majority often viewed them with suspicion. In medieval times Jews were persecuted in England, and still today there is anti-Semitism around.

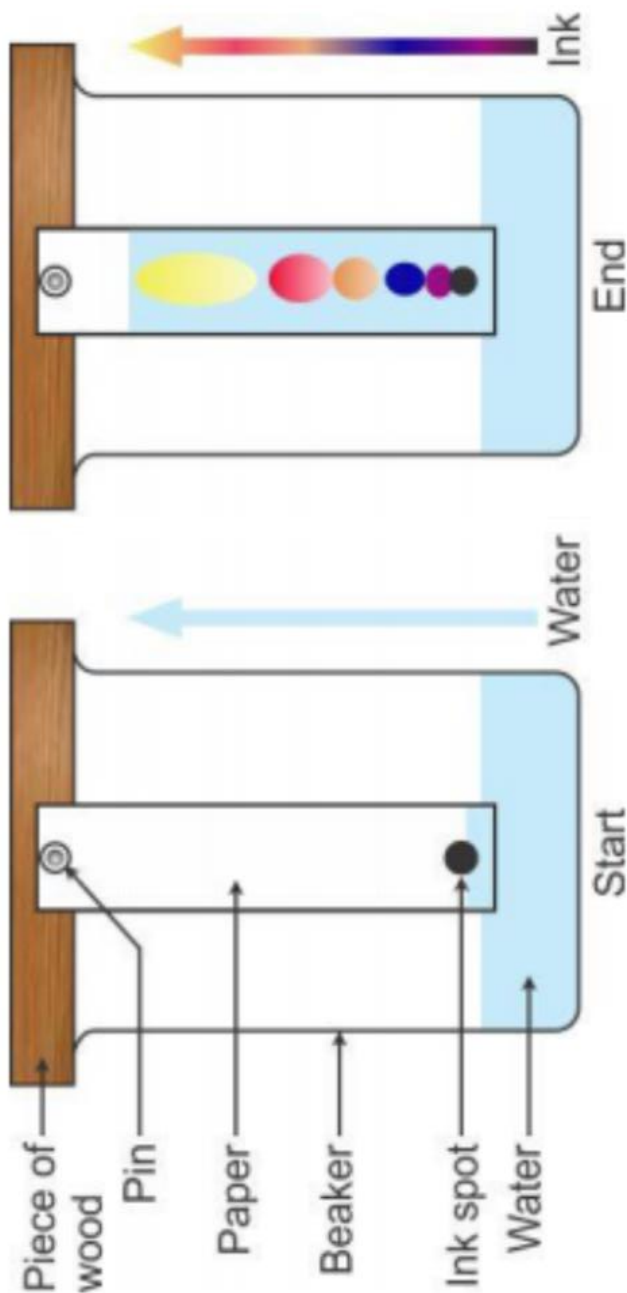


### The Caste System

Traditionally Indian society was split into 4 castes, Brahmins at the top and Shudras (servants) at the bottom. Movement happened only after death with reincarnation, different castes had different duties and the outcastes were outsiders and treated badly at times. Most modern Hindus dislike the idea of caste, arguing it is tradition not religion and in India negative discrimination due to caste is illegal.



**Chromatography** – separates mixtures of soluble substances

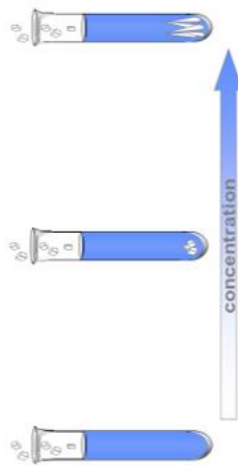


**Saturation**

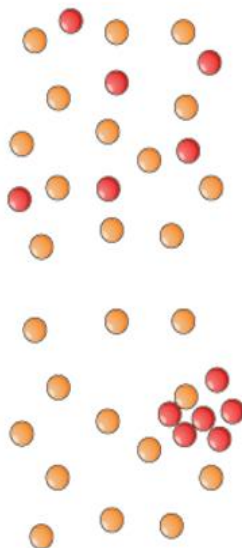
**UNSATURATED SOLUTION**  
more solute dissolves

**SATURATED SOLUTION**  
no more solute dissolves

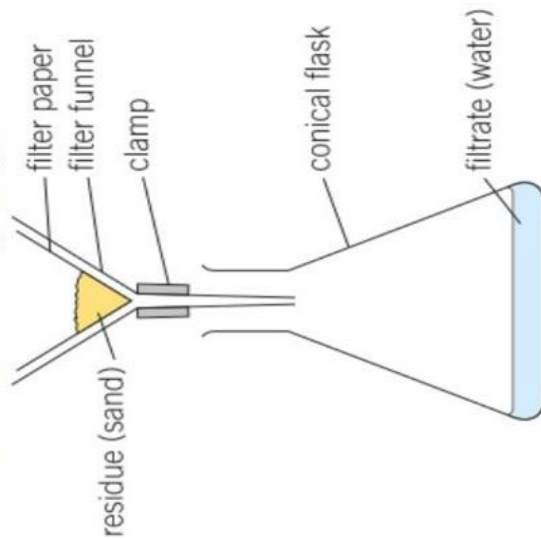
**SUPERSATURATED SOLUTION**  
becomes unstable, crystals form



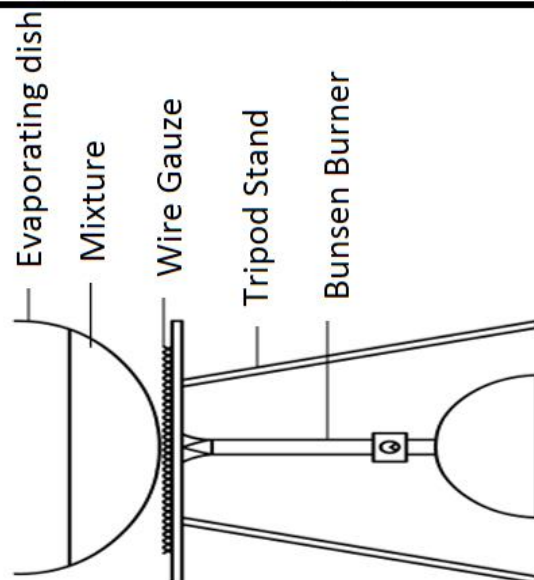
**Model of diffusion of ink in water**



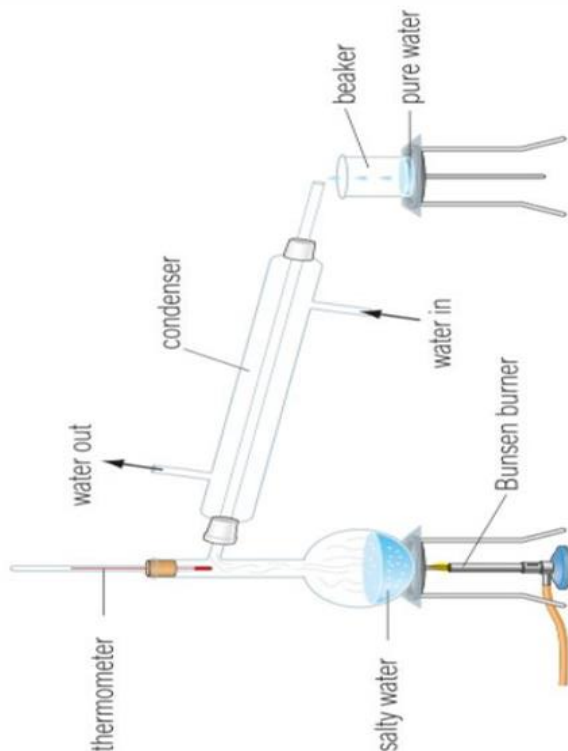
**Filtration** - separates insoluble substances from a liquid



**Crystallisation** - separates a soluble substance from a solution



**Distillation** - separates a liquid from a mixture





<p><b>Year 8 Chemistry Knowledge Organiser - Solutions</b></p> <p><b>Pressure</b> Gas pressure is the force exerted by gas particles per unit area of a surface.</p>	<p><b>Brownian Motion</b> Particles in gases and liquids move about <b>randomly</b>. This is called <b>Brownian motion</b>. Particles are too small to see but we can use a <b>microscope</b> and smoke to watch them.</p>														
<p><b>Water Pressure</b> When we go below the surface of the water, it exerts a pressure on our bodies. The <b>deeper</b> we go, the <b>greater</b> the pressure.</p>	<p><b>Tier 2 Vocabulary</b> Factor Temperature Concentration Dissolving Separating Randomly Soluble</p>														
<p><b>Diffusion</b> The <b>movement</b> of liquid or gas <b>particles</b> from a place of <b>high concentration</b> to a place of <b>low concentration</b>.</p>	<p><b>Tier 3 Vocabulary</b> Particle Pressure Conservation of Mass Reactant Product Solubility Solvent Solute Solution Diffusion Brownian Motion Filtration Crystallisation Distillation Chromatography</p>														
<p><b>Factors affecting diffusion</b></p> <ul style="list-style-type: none"> <li>•temperature</li> <li>•particle size</li> <li>•state of diffusing substance</li> </ul>	<p><b>Pressure = Force (N) / Area (m<sup>2</sup>)</b> <b>(pascal, Pa)</b></p>														
<p><b>Solubility</b> <b>How easily a substance will dissolve.</b> The solubility of a substance is the <b>mass</b> that <b>dissolves</b> in a <b>100 g</b> of solvent</p>	<p><b>Conservation of Mass</b> In a chemical reaction, the <b>total mass of reactants is equal</b> to the <b>total mass of the products</b>.</p>														
<p><b>Factors affecting solubility</b></p> <ul style="list-style-type: none"> <li>•temperature</li> <li>•type of solute</li> <li>•type of solvent</li> </ul>	<table border="1"> <thead> <tr> <th>Key word</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>solvent</td> <td>a liquid that dissolves substances, e.g. water</td> </tr> <tr> <td>solute</td> <td>a substance that is dissolved by a solvent, e.g. sugar</td> </tr> <tr> <td>solution</td> <td>a solute dissolved in a solvent, e.g. sugar dissolved in water</td> </tr> <tr> <td>soluble substance</td> <td>a substance that will dissolve in solvent, e.g. salt (in water)</td> </tr> <tr> <td>insoluble substance</td> <td>a substance that will <u>not</u> dissolve in any amount of solvent, e.g. sand mixed with water</td> </tr> <tr> <td>dissolve</td> <td>when particles of a solute are separated and surrounded by a solvent</td> </tr> </tbody> </table>	Key word	Definition	solvent	a liquid that dissolves substances, e.g. water	solute	a substance that is dissolved by a solvent, e.g. sugar	solution	a solute dissolved in a solvent, e.g. sugar dissolved in water	soluble substance	a substance that will dissolve in solvent, e.g. salt (in water)	insoluble substance	a substance that will <u>not</u> dissolve in any amount of solvent, e.g. sand mixed with water	dissolve	when particles of a solute are separated and surrounded by a solvent
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<p><b>Effect of temperature on pressure in gases</b> When a gas is <b>heated</b> the <b>particles move faster</b>. In a container the gas is <b>trapped</b> so the particles hit the wall of the container. As they move faster and faster they <b>hit the walls more often</b>. The <b>pressure</b> on the walls of the container therefore <b>increases</b>.</p>															

## Year 8 Knowledge Organiser Physics – Topic 1 - Energy

### Types of material

Transparent - allows light to pass straight through. Image is clear.

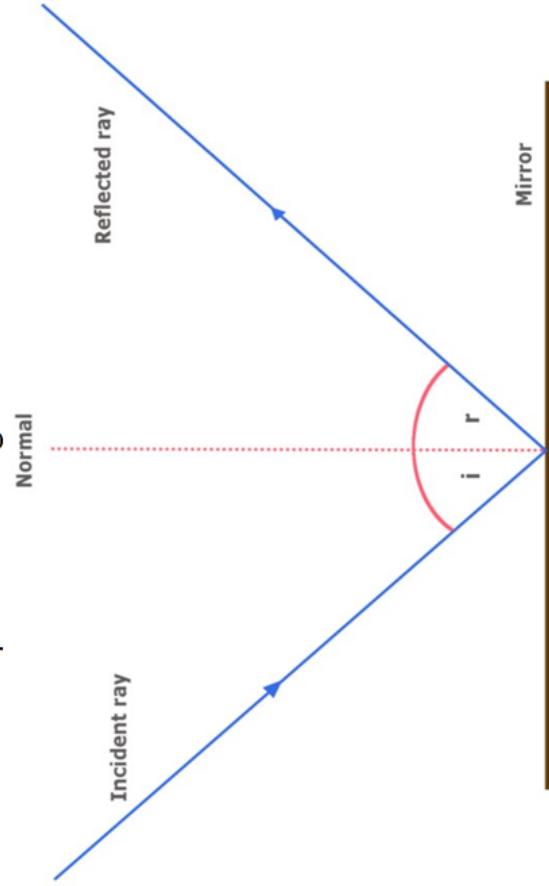
Opaque - blocks light. Light is not transmitted. No image.

Translucent - transmits some light, but image is blurry/fuzzy.

### Reflection

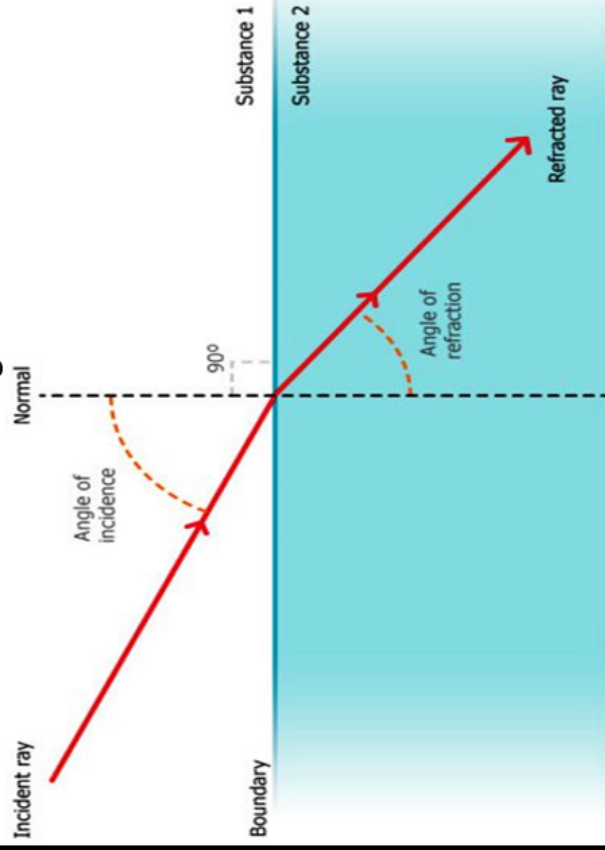
Reflection is when light bounces off of a surface like a mirror.

The law of reflection states that the angle of incidence is equal to the angle of reflection.



### Refraction

When light moves from one material to another it changes direction.



### Luminous/non-luminous

Luminous objects (like the Sun) emit (give off) their own light.

Non-luminous objects (like tables) can only be seen when they reflect light.

### **Tier 2 Vocabulary**

Capacity  
Charged  
Chemical  
Created  
Destroyed  
Efficiently  
Elastic  
Electricity  
Energy  
Fuel  
Heating  
Mechanical  
Renewable  
Reliable  
Reflection  
Transferred  
Transparent

### **Tier 3 Vocabulary**

Dispersion  
Electrostatic  
Field  
Gravitation  
Greenhouse effect  
Kinetic  
Luminous  
Magnetic  
Nuclear  
Opaque  
Radiation  
Refraction  
Translucent  
Work

**Energy**

Energy is a model that describes an object's capacity to do work.

The symbol for energy is E and the unit is the joule (or J).

**Work Done** Work is done when an object is moved a distance d by a force F.

$$\text{Work done (J)} = \text{Force (N)} \times \text{Distance (m)}$$

**Conservation of Energy**

Energy can neither be created nor destroyed, only transferred from one form to another.

**Energy Pathways/transfers**

Heating

Electrical work (current)

Mechanical work

Radiation

**National grid**

System of transformers and cables that transfer electricity efficiently.

**Energy Store**

**Example**

Chemical	Cell, battery, food
Gravitational Potential	A raised object
Electrostatic	Nearby Charged particles
Magnetic	Iron nail in magnetic field
Kinetic	A moving object
Nuclear	Particles in the nucleus
Thermal	A heated object
Elastic Potential	A stretched or squashed object

**Renewable energy resources**

Renewable means the energy resource is replenished as quickly as it is used.

Wind and solar power are good examples of renewable resources.

Adv: No greenhouse gases are emitted.

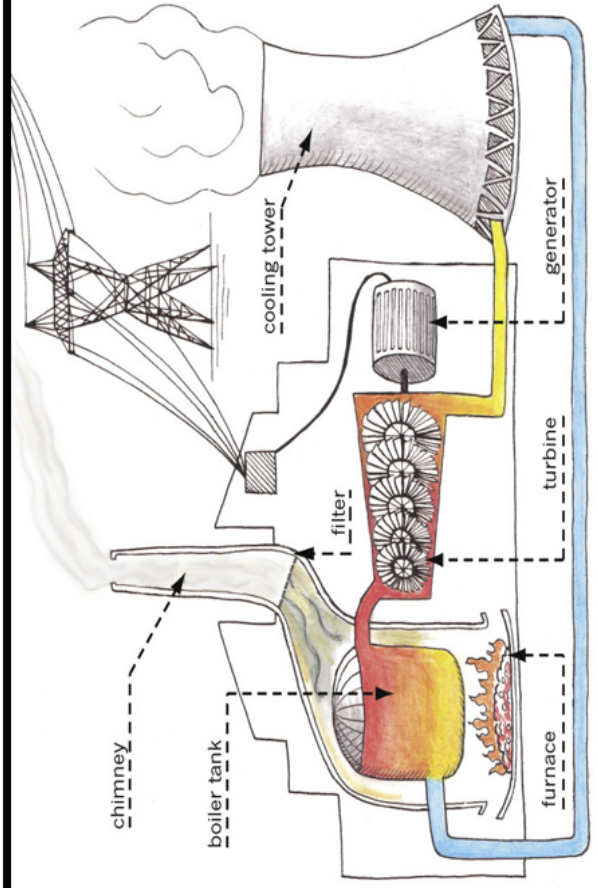
Disadv: Unreliable (if no wind/sun).

**Fossil fuels.** Like coal, oil and gas. Created over millions of years by crushing organic material under sediment.

Adv: Reliable, available.

Disadv: Emits greenhouse gases, non-renewable.

**Power stations** Water is heated by a fuel source. Water turns into steam. High pressure steam turns turbine, which turns generator and produces electricity.



# D&T - Classification and Properties of Materials:

Classification on Woods		Classification on Metal	
<b>Hardwood</b>		<b>Ferrous</b>	
<b>Oak, beech, mahogany</b>	<ul style="list-style-type: none"> <li>•Deciduous trees</li> <li>•Have broad leaves</li> <li>•Slow growing so expensive</li> <li>•Grow nuts or seeds</li> </ul>	<b>Wrought iron, pig iron, mild steel, stainless steels</b>	<ul style="list-style-type: none"> <li>•Contain iron</li> <li>•Magnetic (most)</li> <li>•Rust</li> </ul>
<b>Softwood</b>		<b>Non-Ferrous</b>	
<b>Pine, cedar and spruce</b>	<ul style="list-style-type: none"> <li>•Coniferous trees</li> <li>•Have needles</li> <li>•Fast growing so cheaper</li> <li>•Grow berries or fruit</li> </ul>	<b>Copper, tin, silver, gold, aluminium, bronze, nickel</b>	<ul style="list-style-type: none"> <li>•Do NOT contain iron</li> <li>•Are NOT magnetic</li> <li>•Do NOT rust</li> </ul>
<b>Manufactured boards</b>		<b>Alloys</b>	
<b>MDF, plywood, chip board</b>	<ul style="list-style-type: none"> <li>•Made in a factory</li> <li>•Binds wood with a resin</li> <li>•Comes in large sheets not planks</li> </ul>	<b>Solder, Pewter, Brass</b>	<ul style="list-style-type: none"> <li>•Mixture of more than one element</li> <li>•Combining 2 metal improves properties</li> </ul>

Classification on Plastic	
<b>Thermosetting</b>	
<b>Epoxy resin, polyester resin, urea formaldehyde</b>	<ul style="list-style-type: none"> <li>•Can only be heated and shaped once into a product.</li> <li>•Not recyclable</li> </ul>
<b>Thermoplastic</b>	
<b>Acrylic, PVC, polythene, nylon, polypropylene</b>	<ul style="list-style-type: none"> <li>-Can be heated and shaped repeatedly into different products.</li> <li>- Can be recycled</li> </ul>









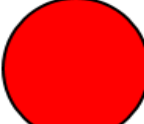

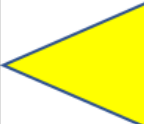

## Specific Language and Terms

<b>Durable</b>	To be long lasting	<b>Thermal</b>	To be able to conduct or insulate heat
<b>Malleable</b>	To be bent and shaped	<b>Electrical</b>	To be able to conduct or insulate electricity
<b>Strength</b>	To withstand forces and breaking	<b>Ductile</b>	To be drawn into a wire (stretched)
<b>Toughness</b>	To not break or snap	<b>Density</b>	A measure of mass per unit volume
<b>Hardness</b>	To withstand scratching or denting	<b>Absorbency</b>	The ability to take in moisture



# D&T - Health and safety and Hand tools:

Specific Language and Terms		PPE Equipment		Tools and equipment	
<b>PPE</b>	Personal protective equipment.	<b>Apron</b>	To protect your clothing from soiling or from being caught in machinery/tools.	<b>Try Square</b>	Drawing a line at 90 degrees OR checking a corner is square (90 degrees)
<b>Hazard</b>	A danger or a risk	<b>Goggles</b>	Protect your eyes from dust particles or any other flying debris from machining.	<b>Tennon Saw</b>	Sawing straight lines in wood or plastic (not metal)
<b>BSI</b>	British Standards Institute	<b>Ear defenders</b>	To protect your ears when using loud machinery.	<b>Coping saw</b>	Sawing curve lines in wood or plastic (not metal)
<b>Kitemark</b>	Assures consumers that the product is safe and has been tested by the BSI	<b>Gauntlets</b>	Protect your hands- particularly from heat when brazing or carrying out heat treatments.	<b>Flat File</b>	Shaping or smoothing a piece of wood, metal or plastic.
<b>CE mark</b>	Assures consumers that the product meets European safety standards	<b>Dust mask</b>	To protect your breathing when working with dusty or hazardous materials.	<b>Vice</b>	Hold work still and secure when drilling.

Red: Prohibition Do Not - Stop  
 Blue: Mandatory Must obey  
 Yellow; Warning Risk of danger  
 Green: Safety Means go

Walk safely and calmly around the classroom/ workshop.

Keep your work area and floor area clear – keep your belongings hung up

Follow the teacher's instructions for using equipment carefully.

Make sure that you are wearing the correct PPE equipment for tasks.

Return all equipment to the correct areas of the classroom/ workshop.

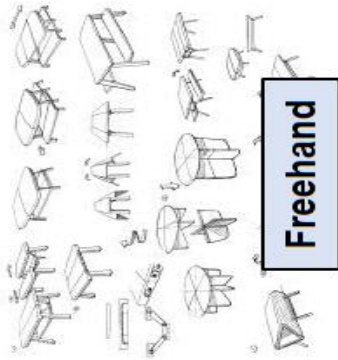
Report all spillages & clean up properly after yourself.

# D&T - Machinery and CAD CAM:

Machinery					
<b>Pillar Drill</b>	A free standing machine that uses a motor to rotate a drill bit. This drill bit can then be used to cut holes in materials.		<b>Vacuum former</b>	A machine used to form sheet plastic into permanent objects using a mould.	
<b>Sander</b>	Is used for shaping and finishing wood. It consists of an electric motor that turns a continuous loop of sandpaper.		<b>Hegner saw</b>	A small electrical saw with a thin blade used to cut a variety of thin sheet materials	
<b>Laser Cutter</b>	A CAM machine that engraves and cuts through material using a high powered optical laser		<b>Vinyl Cutter</b>	A CAM machine that has a sharp blade to cut out designs on tin self-adhesive plastic	
Specific Language and Terms					
<b>Machinery</b>	Mechanical or electrical device designed to be used to perform a function.				
<b>CAD</b>	Computer Aided Design				
<b>CAM</b>	Computer Aided Manufacture				
<b>Software</b>	The programs used by a computer				

CAD- Computer Aided Design	
<b>Advantages</b>	<b>Disadvantages</b>
Designs can be created, saved and edited easily, saving time	CAD software is complex to learn
Designs or part of designs can be easily copied or repeated	Software can be very expensive
Designs can be worked on by remote teams simultaneously	Compatibility issues with software
CAD is very accurate	Work can be lost if not backed up
Designs can be rendered to look-realistic to gather public opinion in a range of finishes.	
CAM – Computer Aided Manufacture	
<b>Advantages</b>	<b>Disadvantages</b>
Quick – speed of production can be increased	Training is required to operate CAM
Consistency and accuracy – All parts manufactured are all the same	High initial outlay cost for machines
Less mistakes- there is no human error unless pre programmed	Loss of jobs for people
Cost saving – workforce can be reduced	Production stoppage – if the machines break down, the production would stop

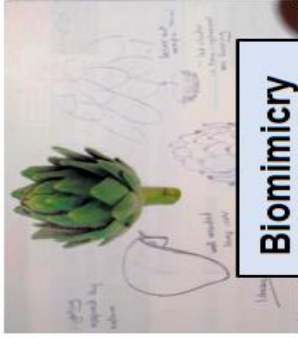
# D&T - Creating ideas and Oblique drawing:



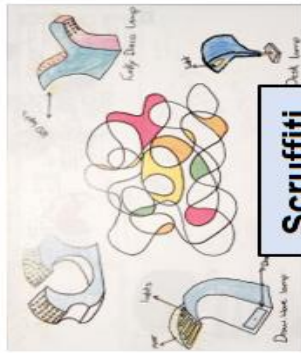
**Freehand**



**Jack Straws**



**Biomimicry**



**Scruffiti**



**Geometric shapes**



**Annotation**

## Specific Language and Terms

**Oblique drawing**

A projective drawing on an object in 3D where the front face is drawn flat and all other lines are projected at 45 degrees

**Freehand sketching**

Quick sketching without using a ruler. This is to be used to get your first thoughts for ideas down on paper

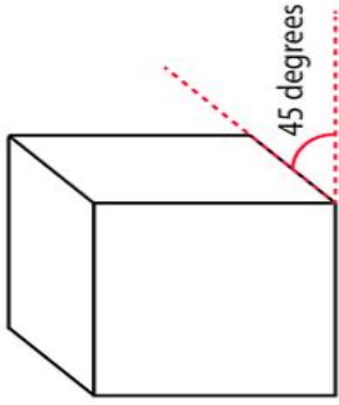
**Creative ideas**

Thinking outside the box. Different ways to get creative are to use techniques such as Jack straws, Geometric shapes, Scruffiti and Biomimicry.

**Annotation**

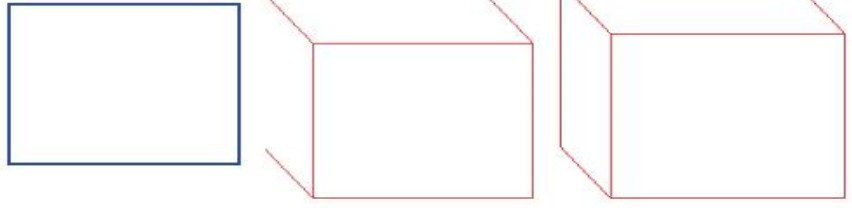
The notes you write around your ideas explaining what they show and how it could be made.

## Oblique Projection



Opposite is a cube that has been drawn in Oblique projection.

To draw it in oblique projection follow the three main steps below:



1. Draw the front or side view of the object.

2. Project 45 degrees lines from each corner

3. Draw the back two lines of the cube in position. Go round the outline of the cube with a fine black pen or dark, sharp pencil.





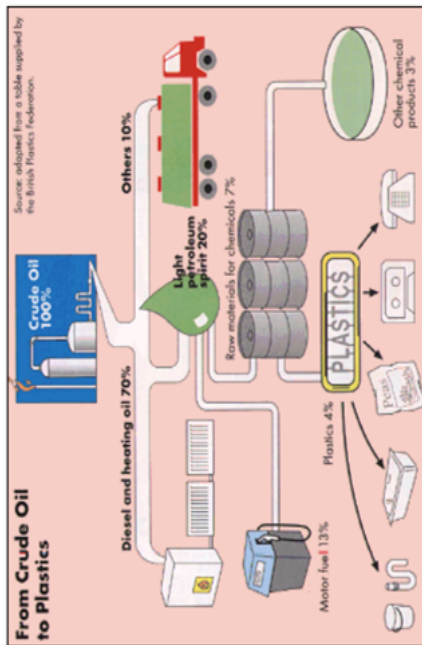




# KS3 Knowledge Organiser – Year 8 Plastics and Processes

**Plastics.** The word means easily shaped or moulded. Plastic materials were first used at around 2000BC. Plastics can occur naturally in trees or even milk; amber is an example (a resin from trees and insects). Amber was used by early Egyptians to make jewellery and is still used for this purpose today. Today, numerous different plastics are available. Some are still made from natural materials but most modern plastics are manufactured from chemicals obtained from crude oil. Plastics manufacturers convert chemicals into plastics.

**Types of Plastics** - Plastics can be divided into three groups, Natural, Thermosetting and Thermoplastics.



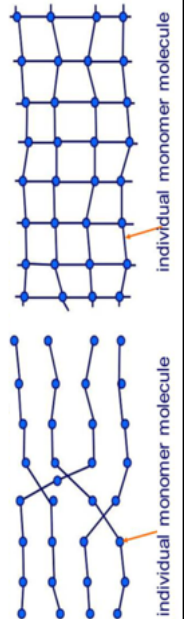
### Thermoplastics

- acrylic (PMMA)
- high impact polystyrene (HIPS)
- high density polythene (HDPE)
- polypropylene (PP)
- polyvinyl chloride (PVC)
- polyethylene terephthalate (PET)

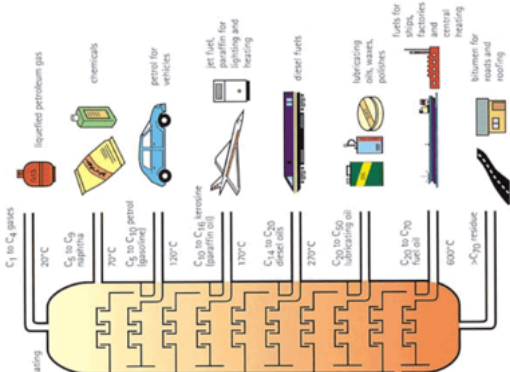
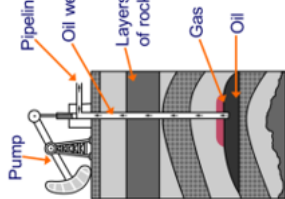
### Thermosetting plastic.

- epoxy resin (ER)
- melamine-formaldehyde (MF)
- phenol formaldehyde (PF)
- polyester resin (PR)
- urea-formaldehyde (UF).

**Plastics are long chain polymers** Thermoplastic plastics are made of long chains of polymers which don't cross over very often. When heated, the molecules slip easily over one another. Thermosetting plastics also have lots of long chain molecules, but there are links between them. These cross links prevent the molecules from moving over one another.



**Crude Oil is the raw material used for plastic. It is a fossil fuel and once used it cannot be replaced**



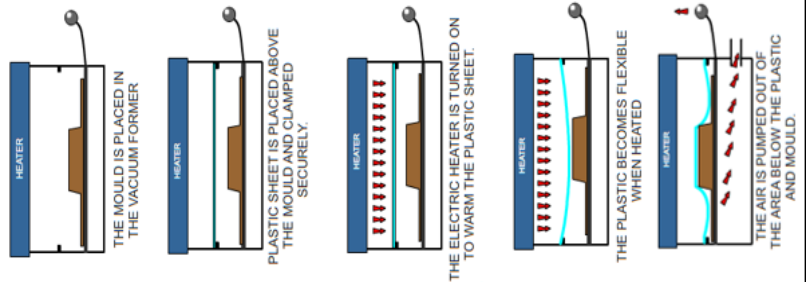
Polymers / plastics have a reputation of being environmentally unfriendly. They take years and in some cases centuries to decay. However, polylactide (PLA) take only five years to decompose.



Containers such as drinking bottles and food containers manufactured from PLA, take slightly longer to decay, as they are manufactured from thicker material. Polylactide is referred to as a 'bioplastic' because of its environmentally friendly nature.

MACHINERY USED	
	Vacuum former
	Profile cutter
	Jig Saw (Hegner)
	Disc Sander
	Pillar Drill
Materials used	
	Wet and Dry abrasive paper
	Coping Saw
	Quartz Clock motor

## Vacuum Forming Process



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