

# Home Learning Booklet



Knowledge Goals Year 9  
Half Term 2

# How to self-test

## Mind mapping

- Mind mapping is simply a diagram to visually represent or outline information.
- Use information gathered from your knowledge goals booklet to create mind maps, make sure to use colour and images, keep writing to the bare minimum.

How to mind map:



## Information for parents on knowledge retrieval



## Flash cards

Use your knowledge goals booklet to make flash cards. Write the questions on one side and on the other record the answer. Test yourself or work with a friend to make sure you know all the key information for each topic.

How to mind map:



## How should students use the Knowledge Goals booklets?

Your Knowledge Goals booklet provide the essential knowledge that you need to learn in each subject this half term. You are **expected to spend 30 minutes per subject per week 'learning' the content**. You will be assessed during lessons using 'low stake' quizzing. **Your teacher may choose to set you additional homework.**

## How can parents support?

- Read through the organiser with your child – if you don't understand the content then ask them to explain it to you – 'teaching' you helps them to reinforce their learning.
- Test them regularly on the spellings of key words until they are perfect. Get them to make a glossary (list) of key words with definitions or a list of formulae.
- Read sections out to them, missing out key words or phrases that they must fill in. Miss out more and more until they are word perfect.

# Subject Index

Suggested Homework Schedule (1 hour of independent study per night).

To help you get organized, we have planned out your weekly home learning to cover all subjects. You may choose to create your own version:

## Week A

Day	Subject 1 (20mins)	Subject 2 (20mins)	Subject 3 (20mins)
Monday	Art	English Language	Physics
Tuesday	Biology	Technology	Maths
Wednesday	Chemistry	Spanish	Music
Thursday	Computer Science	Geography	RS
Friday	Design Technology	History	PE

## Week B

Day	Subject 1 (20mins)	Subject 2 (20mins)	Subject 3 (20mins)
Monday	Drama	Personal Development	Teir 2 Vocab
Tuesday	Maths	English	Physics
Wednesday	Chemistry	English	Music
Thursday	Teir 2 Vocab	Maths	Biology
Friday			

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# Literacy Tier 2 Vocabulary

These words are all 'tier 2' words; in other words, they are seen as 'academic vocabulary' and if you know them, can understand them and use them, you will do better in your exams and be able to communicate more precisely and effectively in life.

#	Key word	Definition
1	Significant	
2	Regional	
3	Analogy	
4	Implication	
5	Enquiry	
6	Pressure	
7	Adjacent	
8	Enhance	
9	Formal	
10	Impact	



# Formal elements of Art

The Visual Elements of line, shape, tone, colour, pattern, texture and form are the building blocks of composition in art. When we analyse any drawing, painting, sculpture or design, we examine these different parts to see how they combine to create the overall effect of the artwork

## Line

Line is the beginning of all drawing. Line in an artwork can be used in many different ways. It can be used to create shape, pattern, form, structure, growth, depth, distance, rhythm, movement and a range of emotions.

## Shape

Shape can be shown in a number of ways. Sometimes we can recognise the shapes, at other times, they can look like something we haven't seen before. This could be called 'abstract'.

## Tone

Tone is the lightness or darkness of a colour. Tone can be changed by using white or black to make a colour lighter or darker.

## Colour

Colour is the visual element that has the strongest effect on our emotions. We use colour to create the mood or atmosphere. For example, artwork that uses mainly reds and oranges, might make you feel angry.

## Pattern

Pattern is made by repeating parts of the work. There are two basic types of pattern in art: Natural Pattern and Man-Made Pattern. The patterns could be made by repeating something in a certain way or completely random.

## Texture

Texture is the surface effect used in art - the roughness or smoothness of the materials used to make the art.

## Space

Space is an element of art by which positive and negative areas are defined or a sense of depth achieved in a work of art .

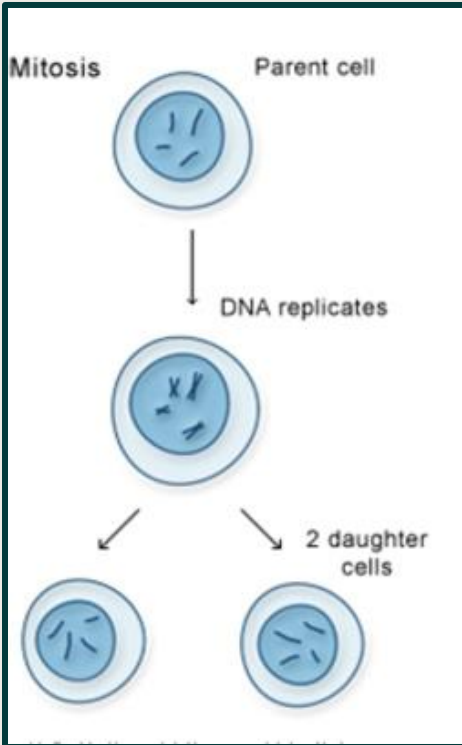
## How to Analyze Art

- 1.What Do You See in Terms of the Visual Elements?
- 2.What Are the Main Focal Points and Any Other Key Features?
- 3.What Path Do Your Eyes Take Around the Painting?
- 4.How Is Everything Connected?
- 5.What Is the Dominant Colour Harmony?
- 6.Is There a Strong Structure.

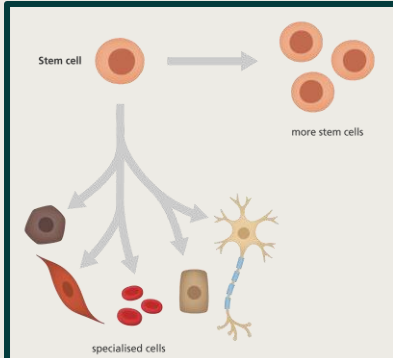
Shape / Form	Tone	Pattern / Texture	Colour	Line
Closed	Bright	Repeated	Bright	Fluent
Open	Dull	Uniform	Bold	Free
Distorted	Light	Geometric	Primary	Controlled
Flat	Dark	Organic	Secondary	Expressio
Organic	Faded	Random	Cold	nistic
Deep	Smooth	Symmetrical	Warm	Strong
Positive	Harsh	Irregular	Radiant	Angular
Negative	Contrasting	Bold	Dull	Delicate
Foreground	Intense	Bumpy	Vivid	Flowing
Background	Sombre	Rough	Contrastin	Simple
Composition	Strong	Smooth	g	Thick
Elongated	Powerful	Broken	Compleme	Thin
Compressed	Dramatic	Fine	ntary	Horizontal
Large		Bold	Monochro	Vertical
Small		Flat	me	Broken
2D / 3D		Grid	Harmonio	Overlappi
Blurred			us	ng
Movement			Natural	Faint
Perspective			Saturated	
			Luminous	
			Opaque	
			Transluce	
			nt	
			Transpare	
			nt	



# Knowledge Goals: Biology – Cell processes



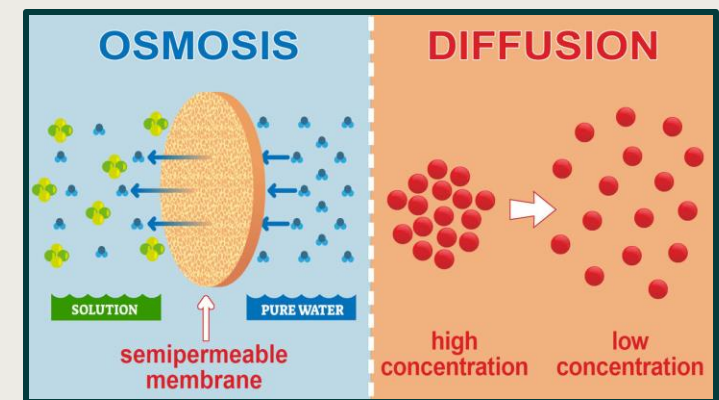
Stages of mitosis
Number of sub-cellular structures (e.g. ribosomes and mitochondria) increase.
Number of chromosomes double.
One set of chromosomes is pulled to each end of the cell.
The nucleus divides.
Cytoplasm and cell membranes divide to form two identical cells



Advantages of stem cell use	Disadvantages of stem cell use
<b>Treatment of diseases</b> such as diabetes, dementia and paralysis.	<b>Ethical and religious</b> objections with using stem cells from an embryo.

Cell transport		
<b>Diffusion</b>	Spreading out of the particles (gas/ solution) resulting in a net movement from an area of higher concentration to an area of lower concentration.	Oxygen and carbon dioxide in gas exchange (leaves and alveoli). Urea from cells into the blood plasma for excretion in the kidney.
<b>Osmosis</b>	The movement of water from a dilute solution to a concentrated solution through a partially permeable membrane.	Movement of water into and out of cells.
<b>Active transport</b>	The movement of substances from a more dilute solution to a more concentrated solution (against a concentration gradient). Requires energy from respiration.	Absorption of mineral ions (low concentration) from soil into plant roots. Absorption of sugar molecules from lower concentrations in the gut into the blood which has a higher sugar concentration.

Stem cell	Properties	Uses
<b>Embryonic stem cell</b>	Can divide into most types of cell.	Therapeutic cloning – embryonic stem cells produced with same genes as patient. No rejection.
<b>Adult stem cell</b>	Can divide into a limited number of cells e.g. bone marrow stem cells can form various blood cells.	
<b>Meristem</b>	Found in plants. Can differentiate (divide) into any type of plant cell.	Clone rare species to prevent extinction. Crops with special features can be clones







# Knowledge Goals: Chemistry – Periodic table

## Metals and non-metals

Metals are found on the left of the periodic table. Metals are strong, malleable, good conductors of heat and electricity.

Non-metals are found on the right of the table. Non-metals are dull, brittle and can be solid, liquid or gas at room temperature.

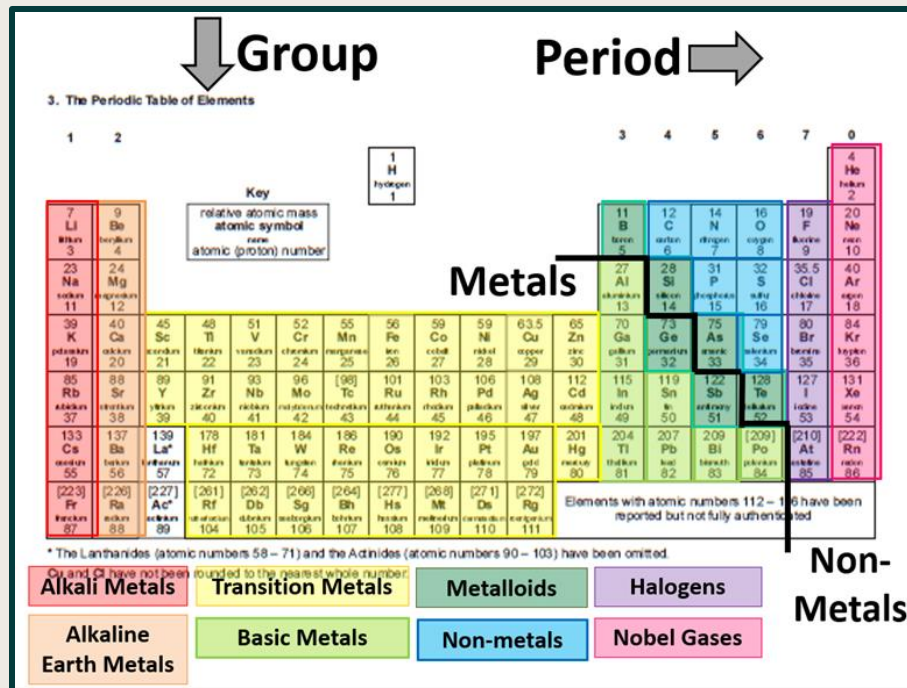
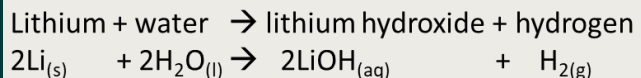
## Group 1 – Alkali metals

The alkali metals are very soft, low-density metals with low melting points.

They all have one electron in their outer shell making them very reactive.

The alkali metals get more reactive going down the group because the outer electron become easier to lose. This is because the atoms are bigger, so the outer electron is further away from the nucleus. There are also more electron shells 'shielding' the outer electron from the nucleus. This results in weaker electrostatic forces of attraction between the nucleus and the outer electrons.

Group 1 metals react with water:  
alkali metal + water  $\rightarrow$  metal hydroxide + hydrogen



## Group 7 – The Halogens

The halogens are non-metals. They exist as **diatomic molecules (e.g. F<sub>2</sub>)**. Going down the group, their melting and boiling points increase. They become less reactive going down the group because it is harder to attract an electron into the outer shell.

They react with group 1 metals to form metal salts.

## Group 0 – The Noble Gases

Noble gases are unreactive because they have a full outer shell of electrons.

They are monoatomic and their boiling points increase going down the group as the atoms get heavier. They are all colourless gases at room temperature.

## Development of the periodic table

**John Dalton (1808)**

Put the elements in order of atomic weight.

**John Newlands (1864)**

Ordered elements by atomic mass but noticed a repeating pattern of properties every 8th element. He ordered the elements according to these similarities and called this the 'law of octaves'. Not all elements fit this pattern.

**Dimitri Mendeleev (1869)**

Arranged elements in order of atomic weight and so that elements with similar properties were in the same column (group). He left gaps when an element did not fit the pattern which allowed space for elements that hadn't yet been discovered. He was able to predict the properties of undiscovered elements.

## Transition metals

- Transition metals are the block of elements between groups 2 and 3.
- They are all strong, shiny, good conductors, and they are used as catalysts.
- Transition metals are harder, denser and have higher melting points than group 1 metals.
- They form coloured compounds and form ions with different oxidation states, e.g. Cu<sup>2+</sup> and Cu<sup>3+</sup>.



# Knowledge Goals: Computer Science – Python 101

## Comparison Operators

Operator	Name
==	equal to
!=	not equal to
>	greater than

Operator	Name
<	less than
>=	greater or equal to
<=	less or equal to

## Mathematical Operators

Operator	Name	Example	Answer
*	multiply	2*3	6
/	divide (normal)	20/8	2.5
//	divide (integer)	20//8	2
%	modulus (remainder)	20%8	4
+	add	2+3	5
-	subtract	7-3	4
**	exponent (raise to)	4**2	16

## Variables

Variables are assigned using the = operator.

```
x=3
name="Bob"
```

A variable is declared the first time a value is assigned. It assumes the data type of the value it is given.

## Iteration – Count Controlled

```
for i=0 to 7
  print("Hello")
next i
```

Will print hello 8 times (0-7 inclusive).

## Iteration – Condition Controlled

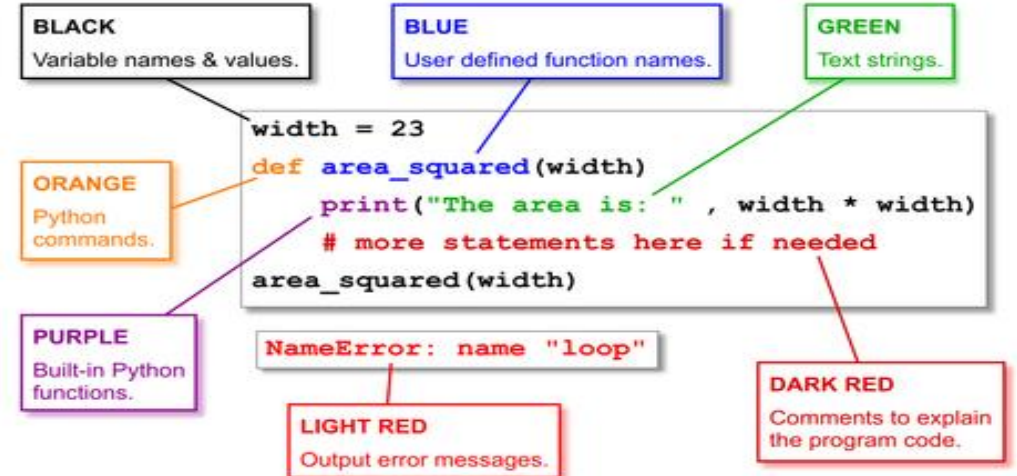
```
while answer!="computer"
  answer=input("What is the password?")
endwhile
```

## Selection

Selection will be carried out with if/else

```
if entry=="a" then
  print("You selected A")
elseif entry=="b" then
  print("You selected B")
else
  print("Unrecognised selection")
endif
```

## IDLE Colour Coding







# Knowledge Goals: Drama

## *Devising Drama*

**Devising Drama:** creating your own performance work from a stimulus. It is the process of you creating something original and unique that may never have been done before.

### **How to respond to stimulus:**

- What initial ideas does the stimulus give you?
- What key themes does it explore?
- What ideas for a plot/storyline does it give you?
- What ideas does it give you about context? Time period? Location?
- Does it give you any ideas for characters? Emotions? Feelings?
- Does it make you think of something personal? A memory?
- What is the purpose of the stimulus?

**Stimulus:** This is the starting point, or the source of your idea. It may come in different forms including a poem, a word, piece of music, an image, fairy-tale, newspaper article or movement/dance sequence.

**Genre:** the type of story being told by the playwright. Genre is important with Devising as it can often help generate more material and you can tailor performance work to a specific genre such as horror, comedy, western, romantic.

**Improvisational Skills:** where you react in the moment and produce work in response to another actor. This is an important rehearsal tool as it is a quick way to generate performance work or explore an initial idea, it also helps to create a structure to the scene and firm up what you want to get out of it, eg. Your characters main motives.

**Evaluate:** what did you do, what was the effect of it on the performance, what did it communicate to the audience?

**Analyse:** why did you do the scene in that way? What had you tried first? Why did/n't it work? What could you try next time instead?

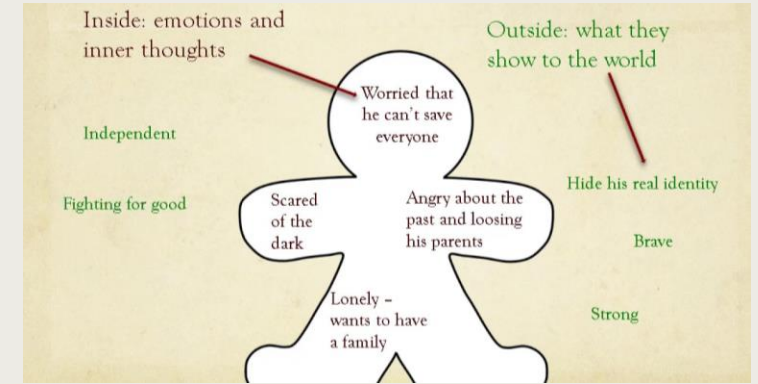


# Knowledge Goals: Drama

## *Devising Drama*

### Half Term 1: Tier 3 Vocabulary

	Key word	Definition
1	Genre	The type of story of the performance or playwright that is being told. Eg. Horror, mystery, scif-fy, western, historic.
2	Devise	To produce your own work in relation to a stimulus. This is often unique and creative to you and your ideas.
3	Stimulus	The source of your idea, the object, word, image or sound/movement that you base your ideas on.
4	Evaluate	What were you trying to communicate to the audience? What was the meaning behind it?
5	Analyse	How effective was it? What did you try? What could you do differently?



### Rehearsal Techniques:

- Role on the wall, where you label everything you know about a character both externally and internally. (Thoughts inside the drawing and what they show to the world outside of the outline).
- Conscience alley – where the actor walks through an alley of ensemble who say their inner thoughts and feelings.
- Improvisation, making up work on the spot, responding to another actor in character, to create a scene
- Hot seating, where you are asked questions and you need to respond in character to give greater understanding and depth to their background.

# Knowledge Goals: English Lang

TEXT SELECTION	CORE ASSESSMENT SKILLS AND WHAT STUDENTS ARE AIMING TO BE ABLE TO WRITE:
<ul style="list-style-type: none"> <li>• Of Mice and Men...</li> <li>• Stone Cold</li> <li>• Curious Incident of the Dog in the <u>Night time...</u></li> <li>• The <u>Midwitch</u> Cuckoos</li> <li>• Flowers For Algernon (Top Set)</li> <li>• Out of Darkness</li> <li>• Noughts and Crosses</li> <li>• Across the Barricades</li> <li>• Noughts and Crosses</li> <li>• Animal Farm</li> <li>• Lord of the Flies</li> <li>• Heroes</li> </ul>	<p><b>(WTL/S)</b> Analyse writer's techniques – language, sentence forms and structure</p> <p><b>(E)</b> Use of evidence to support points</p> <p><b>(AQ)</b> Analyse quotation, exploring denotation and connotation</p> <p><b>(ERA)</b> Effect on the reader and atmosphere</p> <p><b>At the start of the extract</b>, Steinbeck <b>opts to focus</b> on the <b>interaction</b> between George and Curley's Wife. In her <b>initial dialogue</b>, speaking to George for the first time, Steinbeck creates a very negative impression of her as he describes how <b>she 'playfully'</b> behaves around the men. Here, it is clear Steinbeck intends for her to appear provocative and flirtatious, a somewhat dangerous way to behave on a ranch where she is surrounded by lonely men - and her husband! The use of this adverb here implies that she rebels against rules, blurring boundaries, but also that she doesn't comprehend the damage she could cause; this is only a game to her. As a result, there is an increasing tension filling the air as the reader questions whether she will play a role in complications later in the play.</p>

<p>Home Learning Tasks:</p> <ol style="list-style-type: none"> <li>1) Complete 15 minutes of reading every night, using your AR book.</li> <li>2) Complete the vocabulary acquisition quizzes, set on Teams every fortnight.</li> <li>3) Using this knowledge organiser, learn and review the key ingredients of crafting effective narratives.</li> <li>4) Practise evaluating texts by finding examples of techniques being used effectively.</li> <li>5) Read at least one text from the wider reading list!</li> </ol>	<p><b>Treasure Island by Robert Louis Stevenson</b></p>	<p><b>History of the Russian Revolution by Leon Trotsky</b></p>	<p><b>Never Let Me Go by Kazuo Ishiguro</b></p>	<p><b>A Ghost Arrives: A Novel by Abe Moss - Decoded by Mai Jia</b></p>	<p><b>Our Victorian Ancestors by Jan Bondeson</b></p>
	<p><b>A World of Difference: An Anthology of Short Stories from Five Continents (edited by Lynda Prescott).</b></p>	<p><b>Child 44 by Tom Rob Smith</b></p>	<p><b>The Curious Incident of the Dog in the Night-time by Mark Haddon.</b></p>	<p><b>Ten Days that Shook the World by John Reed.</b></p>	<p><b>The Haunting of Gillespie House by Darcy Coates</b></p>
	<p><b>Nineteen Eighty Four by George Orwell</b></p>	<p><b>The Wasp Factory by Iain Banks</b></p>	<p><b>The Trail by Franz Kafka</b></p>	<p><b>Girl Missing by Sophie McKenzie</b></p>	<p><b>Fahrenheit 451 by Ray Bradbury</b></p>
	<p><b>The Great Gatsby by F. Scott Fitzgerald.</b></p>	<p><b>The Outsider by Colin Wilson</b></p>	<p><b>Battle Royale by Koushun Takami</b></p>	<p><b>The Grapes of Wrath by John Steinbeck.</b></p>	<p><b>Weird Hauntings: True Tales of Ghostly Places by Ryan Doan</b></p>



# Knowledge Goals: Food Technology

A **Head Chef** is a highly skilled professional cook who oversees the operations of a restaurant or dining facility

## FOOD MILES

WHAT ARE THEY AND HOW DO THEY AFFECT OUR WORLD?

AMERICAN FOOD TRAVELS AN **average** OF 1,500 TO 2,500 MILES FROM FARM TO TABLE



GROWING FOOD CLOSER TO **home** ALLOWS US TO HAVE FRESHER FOODS, AND MORE VARIETIES OF FOODS



**Time + distance** FROM THE POINT & TIME WHERE FOOD IS **grown** TO WHERE IT IS **consumed**. THE SMALLER THE BETTER!

60-70% OF THE COST OF YOUR FOOD GOES TO **production inputs**



(FERTILIZER, OIL/GAS, WATER, ETC.), TRANSPORTATION, AND STORAGE THAT USE **limited** RESOURCES, PETROCHEMICALS, & GENERATE GREENHOUSE GASSES.

FOOD MILES ARE AMONG THE FASTEST-GROWING SOURCES OF GREENHOUSE GAS EMISSIONS

**worldwide**

FRUITS AND VEGETABLES ALLOWED TO **grow to full ripeness**

HAVE MORE NUTRITIONAL VALUE THAN CONVENTIONAL PRODUCE HARVESTED EARLY AND RIPPENED WITH CHEMICAL GASSES IN TRANSPORT AND STORAGE

## AVOIDING CROSS-CONTAMINATION

### Chemical-to-Food

- Label chemicals clearly
- Have a designated closet for chemicals
- Keep chemicals far away from your food

### Food-to-Food

- Keep ready-to-eat foods away from raw foods or food allergens
- Use designated utensils, cutting boards, etc. for raw foods and allergens
- After handling allergens or raw foods, immediately change glove and wash your hands

### Pest-to-Food

- Store food at least 6 inches above the floor
- Keep foods covered
- Keep a clean, sanitized, and tidy kitchen



StateFoodSafety

## The role of the EHO (Environmental Health Officer)



Checking ventilation

### The role of the EHO

- They can visit randomly so long as it is deemed "a reasonable time"
- They sometimes visit as a result of a complaint
- Can close a business immediately if the risk is high
- They can offer advice to business'
- They can seize and detain food
- They can prosecute business'
- They can inspect training records of staff
- Monitor hygiene and cleaning standards
- Take temperatures of fridges, inspect how waste is disposed of, hand washing facilities and food storage

## Medical Reasons

Name of medical condition	Food/drinks to avoid	Reason to avoid
Diabetes	Starchy food/ high in sugar	High in saturated fat. Can lead to heart disease, while excess sugars can cause unwanted weight gain and blood sugar spikes
Nut allergy	Nuts, blended cooking oil, margarine with nuts oils and often seeds	the immune system overreacts to proteins in these foods
Lactose intolerance	Milk, cheese, yogurt, processed food	cannot metabolize <b>lactose</b> properly; they lack lactase, an enzyme required in the digestive system to break down <b>lactose</b> . Patients typically experience bloating, flatulence, and diarrhoea
Gluten intolerance (coeliac)	Wheat, wholemeal, bran, pasta, rye, beer	Celiac disease is caused by a reaction to a gluten protein found in wheat, barley, rye, and sometimes oats. Symptoms include chronic <b>diarrhoea</b> , weight loss and <b>fatigue</b>

### Fats, oils and lipids:

Too much fat is bad for you, but so is not enough.

#### Source

#### Saturated Fats

(From Animal sources. They are also called unhealthy fats. They are generally solid at room temperature)  
Sausages / Bacon / Lard / Dairy

#### Unsaturated Fats

(These are healthier. They are often liquid at room temperature.)  
Monounsaturated fats  
- olive oil / avocados  
Polyunsaturated fats  
- sunflower oil / seeds

#### Omega-3

These are Polyunsaturated and called "healthy" fats as your body needs them but can't make them. They are good for your heart.  
- Oily fish / Nuts / Seeds

#### Function

Energy  
Warmth  
Protection of organs  
Source of fat soluble vitamins  
Hormone production

Dietary Reference Values		
DRI	Men	Women
Total fat	95g	70g
Sat fat	30g	20g

**Too much**  
Obesity  
Heart disease  
Type 2 diabetes  
Stroke  
Cancer

**Not enough**  
Vitamin deficiency (fat soluble)  
Unprotected organs

### Carbohydrates

There are 2 kinds, simple and complex - Sugar & Starches

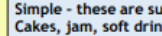
#### Monosaccharides



#### Disaccharides



#### Polysaccharides



#### Source

Simple - these are sugars (monosaccharides, disaccharides)  
Cakes, jam, soft drinks

Complex - these are starches (polysaccharides)  
Bread, potatoes, Flour, Pasta, Rice.

#### Function

**Simple**  
Quick burst of energy  
**Complex**  
Longer lasting energy

#### Free sugars

These give you no nutritional benefit other than energy.

#### Not enough

Can make blood sugar level drop  
• hunger,  
• dizziness,  
• Tiredness  
• Lack of energy  
Our body will use protein for energy (leads to loss of muscle)

#### Too much

• Excess is turned into fat  
• Can cause obesity  
• Too much sugar leads to dental problems  
• Can lead to type 2 diabetes

### Protein:

These are made up of **essential amino-acids** and **non-essential amino-acids**. (Our bodies can make non-essential amino acids, but we need to get essential amino acids from our food).

#### Source

HBV - these have all the essential amino acids  
• Meat, fish, dairy, eggs (animal sources)  
• Tofu  
LBV - these are missing at least one essential amino acid  
• Seeds, nuts, beans, pulses, cereals, Quorn (plant sources)

#### Function

Growth  
Repair  
maintenance



#### Not enough

Kwashiorkor  
Oedema  
Anaemia  
Slow growth in children

#### Too much

Excess protein can be converted to energy. If unused turns to fat.

#### Dietary Reference Values

Age	Amount
1-3	15g
4-6	20g
7-10	28g
11-14	42g
15-18	55g
19-50	55g
50+	53g

#### Complementary actions

Combining 2 or more LBV proteins helps get a balance of essential amino acids. e.g. beans on toast.



# Knowledge Goals: French

## Internet

Il est facile de (d') ...  
 Il est possible de (d') ...  
 rester en contact avec ses amis  
 faire des recherches pour  
 ses devoirs  
 utiliser un dico en ligne  
 partager des photos  
 Il est dangereux de ...  
 partager ses détails personnels

## The internet

*It is easy to ...  
 It is possible to ...  
 stay in contact with your friends  
 do research for your homework  
 use an online dictionary  
 share photos  
 It is dangerous to ...  
 share your personal details*

passer trop de temps sur Internet  
 tchatter en ligne avec des inconnus  
 Il est important de ...  
 faire du sport  
 passer du temps avec sa famille  
 retrouver ses amis en vrai

*spend too much time on the internet  
 chat to strangers online  
 It is important to ...  
 do some sport  
 spend some time with your family  
 meet up with your friends in real life*

## La lecture

J'apprécie beaucoup les ...  
 Je préfère les ...  
 J'adore les ...  
 J'ai une passion pour les ...  
 Je n'aime pas les ...  
 J'ai horreur des ...  
 romans fantastiques  
 romans policiers  
 romans d'amour

## Reading

*I really appreciate/like ...  
 I prefer ...  
 I love ...  
 I'm passionate about ...  
 I don't like ...  
 I hate ...  
 fantasy novels  
 detective novels  
 romance novels*

livres d'épouvante  
 BD  
 mangas  
 J'aime les illustrations/l'humour.  
 Je ne lis pas sur une tablette.  
 Je préfère tenir un livre traditionnel  
 dans mes mains.  
 Je ne lis plus de livres traditionnels.  
 Je lis beaucoup en ligne.

*horror books  
 comic books/graphic novels  
 mangas  
 I like the illustrations/humour.  
 I don't read on a tablet.  
 I prefer holding a traditional book  
 in my hands.  
 I no longer read traditional books.  
 I read a lot online.*

## La musique

J'aime .../Je n'aime pas ...  
 le jazz/le rap  
 le reggae/le rock  
 la musique classique  
 la musique pop  
 J'écoute ma musique ...  
 sur mon téléphone portable  
 avec mes écouteurs  
 sur mon ordi  
 sur une tablette

## Music

*I like .../I don't like ...  
 jazz/rap  
 reggae/rock  
 classical music  
 pop music  
 I listen to my music ...  
 on my phone with my earphones  
 on my computer  
 on a tablet*

Je regarde des clips vidéo pour  
 écouter ma musique.  
 Mon chanteur préféré/Ma chanteuse  
 préférée, c'est ... car ...  
 j'aime ses paroles  
 j'aime ses mélodies  
 sa musique me donne envie  
 de danser  
 sa musique me donne envie  
 de chanter

*I watch music videos to listen to my music.  
 My favourite singer is ... because ...  
 I like his/her lyrics  
 I like his/her tunes  
 his/her music makes me want to dance  
 his/her music makes me want to sing*

## Une soirée entre amis

Je suis allé(e) au cinéma.  
 Je suis sorti(e) avec ...  
 On est allé(e)s à un concert.  
 On a vu un film.  
 On est allé(e)s en ville.  
 On a fait du patin à glace.  
 J'ai pris beaucoup de photos.

## An evening with friends

*I went to the cinema.  
 I went out with ...  
 We went to a concert.  
 We saw a film.  
 We went into town.  
 We went ice skating.  
 I took lots of photos.*

J'ai mis les photos sur Instagram.  
 On est allé(e)s au restaurant.  
 J'ai bu un coca.  
 C'était ...  
 génial/lamentable  
 amusant/délicieux

*I put the photos on Instagram.  
 We went to a restaurant.  
 I drank a cola.  
 It was ...  
 great/pathetic  
 fun/funny/delicious*

## Les émissions de télé

J'aime/Je n'aime pas ...  
 les documentaires (m)  
 les jeux télévisés (m)  
 les magazines culturels (m)  
 les séries (f)  
 les émissions de sport (f)  
 les émissions de musique (f)  
 les émissions de télé-réalité (f)  
 les actualités  
 parce qu'ils/elles sont ...  
 amusant(e)s  
 divertissant(e)s  
 intéressant(e)s  
 passionnant(e)s

## TV programmes

*I like/I don't like ...  
 documentaries  
 game shows  
 magazine programmes  
 series  
 sports programmes  
 music programmes  
 reality TV programmes  
 the news  
 because they are/it is ...  
 funny  
 entertaining  
 interesting  
 exciting*

éducatifs/-ives  
 ennuyeux/-euses  
 (trop) sérieux/-euses  
 originaux/-ales  
 Mon émission préférée s'appelle ...

*educational  
 boring  
 too serious  
 original  
 My favourite programme is called ...*

C'est un jeu télévisé.  
 C'est une série.  
 J'aime bien l'animateur(-trice).  
 Les acteurs sont très doués.  
 Le scénario est passionnant.  
 J'apprends beaucoup.  
 Je ne rate jamais cette émission!

*It's a game show.  
 It's a drama series.  
 I like the presenter.  
 The actors are very talented.  
 The plot is exciting.  
 I learn a lot.  
 I never miss this programme!*

## Les mots essentiels

en plus  
 cependant  
 par contre  
 normalement

## High-frequency words

*what's more  
 however  
 on the other hand  
 normally*

d'habitude  
 en général  
 Ça dépend.

*usually  
 in general  
 It depends.*





# Knowledge Goals: How is global power changing?



**What is a superpower**—In order to be a superpower countries need certain factors of influence these include:  
•A large land area or population size (Geographic influence)

- Lots of Money/Strong Economy
- Large military force
- A large cultural influence



The USA, China, Russia, and India are currently considered the world's superpowers. This is because each country possess significant economic, cultural, political and military power. However at present the United States is considered the world's only true superpower. We also have some countries that are growing in power and when we look to the future, Nigeria could be the first super power in Africa

## How can we measure global power?

We can use data to measure global power- most commonly GDP, population size, military spending and land area. We can also study the cultural influence of different superpower countries such as language spoken, music, film, and the trade of food and clothing.

## How could Russia challenge the USA for superpower status?

Russia and the USA have been challenging each other for many years. In particular, Russia has a large land mass and a large population. Russia also has access to an abundance of natural resources that it can make a lot of money from. More recently, Russia is investigating natural resources in and around The Arctic.



## What might limit Russia's superpower status?

Russia's physical geography is a main factor that will limit Russia's growth. Russia has a very cold climate in large parts of the country and a mountainous relief meaning that transport is difficult. It also has a declining population.

## The growth of China-

China's GDP has grown considerably in the last 30 years.

Alongside this, its population has increased to 1.4 billion- the largest in the world.

The population is getting wealthier which has led to a growth in the demand for consumer goods.

The Chinese Government controls the economy, rather than businesses, meaning that they have total control over their economic plan.

Their influence is spreading due to the Belt and Road Initiative which sets to increase trade links with the rest of the world.



Whilst China's population is biggest in the world, not everyone in China is benefitting from the economic boom that is mainly found on the east coast.

The size of China's population is causing issues such as not being able to supply enough energy to homes and businesses

Further reading about Nigeria



## Where is the next superpower?



Further reading



## Factors for India as a superpower

- India has a young population = larger workforce = more economic growth.
- Member of UNSC = more influence over unstable countries and global security.
- Large English speaking population = increases trade and economic opportunities.
- 3<sup>rd</sup> largest military = power and influence.

## Factors against India as a superpower.

- Around 5% of India's live in poverty = need to fix poverty before it can be a superpower.
- Parts of India has poor infrastructure = growth is limited to certain areas = not able to reach full potential.
- Conflict with neighbours and internally = appear less powerful.

## Is Nigeria on the rise?

Nigeria is the wealthiest country in Africa and in 2030 it is predicted to have the third largest population in the world, overtaking the USA.

It has benefitted greatly from the oil that is found naturally off its south coast. However, Nigeria has many challenges to overcome. There is a large percentage of the population that live in poverty and it is difficult to distribute medicines. In addition there are also environmental challenges such as the water pollution created from oil spills.





# Year 9 Key Topic 2 – World War Two



September 1939  
Britain declares war on Germany

May/June 1940  
Operation Dynamo

May/June 1940  
The Blitz

May 1940  
Churchill becomes PM

December 1941  
Attack on Pearl Harbour

June 1944 D-Day landings

May 1945 Germany surrenders

August 1945 USA drops the A-Bomb on Hiroshima and Nagasaki

September 1945 Japan surrenders

## Outbreak



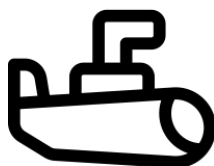
**On 1 September, Hitler invaded Poland. Britain and France said that, if Germany did not leave, they would declare war. Hitler continued with the invasion, not believing that Britain would stick to their commitment to protect Poland. He was taken by surprise on 3 September 1939, when Chamberlain declared war on Germany.**

## Dunkirk

The British Expeditionary Force which had been sent to France to try and stop the German invasion, had to retreat. They reached the English Channel and waited on beaches at Dunkirk to be rescued. Britain organised a huge evacuation effort, sending over a whole range of naval and civilian boats to pick up stranded soldiers. 340,000 French and British soldiers were brought back to England in one week. However, there were also big losses: over 68,000 soldiers were killed, wounded, captured or unaccounted for. Over 400 tanks, six destroyers and 145 aircraft were also lost. These losses were hugely damaging to the war effort.



## Technology



**A huge amount of new technology was developed and used during the Second World War.**

**New military and weapons technology included U-boats, submarines, improved aeroplanes such as the Spitfire and aircraft carriers.**

**The British also invented sonar in 1943 which sent sound waves through water to find U-boats and submarines.**

## The Blitz

The Luftwaffe decided to change their tactics and started targeting civilian targets and key landmarks.

Major British towns and cities were targeted from September 1940 to May 1941. The aim was now to try and force the British to surrender, rather than attempt to destroy the RAF. Incendiary devices were used to start fires and light up targets on the ground, before bomber planes tried to target populated areas.

The Blitz caused huge loss of life. 40,000 civilians were killed and 2 million houses were damaged or destroyed.



## Home Front



**The Home Front is the non-fighting role that civilians went through during the war.**

**This included the evacuation of children from large cities into the countryside to keep them safe. Over 1.5 million children were evacuated.**

**Food was also rationed, which means everyone had a set amount so there were no food shortages. This was because German U-boats targeted supply lines. People were encouraged to grow their own food through the 'Dig for Victory' campaign.**

## Pearl Harbour

On 7 December 1941, a Sunday morning, Japan carried out a surprise attack on the American Naval base at Pearl Harbor, in Hawaii.

The bombing followed several years of rising tension between Japan and the USA. The USA did not expect Japan to attack them in Hawaii, which meant that they had relatively few defences at Pearl Harbor. Japan took advantage of this.

The attack killed 2,335 American troops and damaged or destroyed 21 US Navy ships. On 8 December, Roosevelt spoke to Congress and declared war on Japan and Germany. This was one of the turning points in the war, resulting in American troops and supplies joining the war in Europe to support Britain.



## VE Day



**VE Day - which stands for Victory in Europe Day - was the day near the end of World War Two when fighting against Nazi Germany in Europe stopped.**

**VE Day was on Tuesday 8 May, 1945. It was an emotional day that millions of people had been waiting for. People were extremely happy that the fighting had stopped. There were big celebrations and street parties. Huge crowds gathered outside Buckingham Palace in London. People dressed in red, white and blue.**

## Atomic Bomb

One of the most significant events of World War Two happened in 1945. This was the dropping of atom bombs on the Japanese cities of Hiroshima and Nagasaki.

The dropping of the atom bombs was the first and only time that nuclear weapons have been used.

The decision to drop the atom bomb was taken by President Harry S. Truman, who had replaced Franklin Roosevelt following his death in April 1945. On 6 August 1945, Truman ordered an atom bomb to be dropped on the city of Hiroshima. It was dropped by a bomber plane named the Enola Gay. It is thought that at least 140,000 people were killed, of a total population of around 350,000.

This brought World War Two to an end.





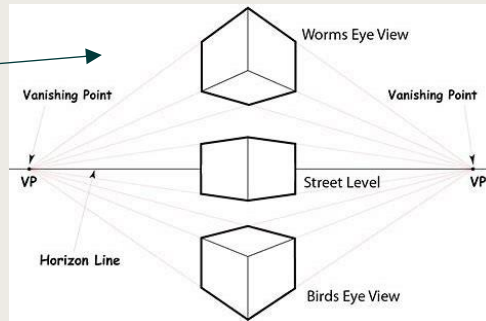
# Knowledge Goals: Materials 1 - Passive Amplifier

## Health and Safety

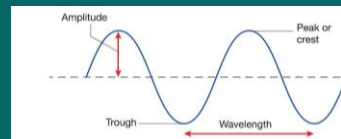
It is really important we **ASSESS** the **RISK** and **REDUCE** the **RISK** of Injury by **LISTENING** To the **TRAINING** and following the correct **PPE** usage

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- Ensure you know where the emergency stop button is
- Do not eat or drink in the workshop
- No running

**Two-point perspective** - This shows an object from the side with two vanishing points. It gives the most realistic view of a product as it shows the item edge on, as we would see it. It is often used to produce realistic drawings of an object.

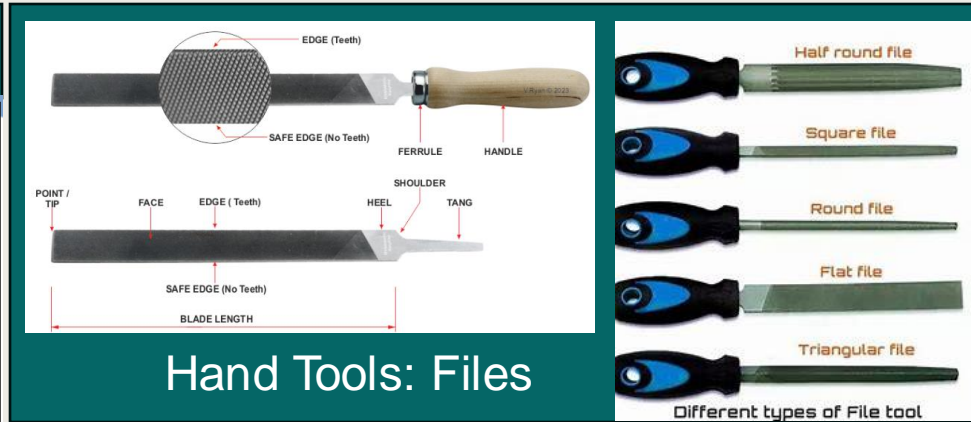


The loudness of a sound is a measure of the amplitude of the wave. The greater the amplitude, the louder the sound.



## CAD – 2D Design Software

	Select Tool – Used when selecting drawing, moving drawing or lines and shapes.
	Circle Tool – Used to draw circles. Click and hold to extend the tool bar for more options.
	Line Tool – Used to draw lines. Click and hold to extend the tool bar for more options.
	Path Tool – Used to draw curves and curved lines. Click and hold to extend the tool bar for more options.
	Rectangle Tool – Used to draw rectangles and squares. Click and hold to extend the tool bar for more options.
	Double Path Tool – Used to draw curves and curved lines with a double line. Click and hold to extend the tool bar for more options.
	Text Tool – Used to add text to the design. Text style can be changes and altered to suit the design.
	Mirror Tool – Used to mirror and repeat a design. Found by holding down the Transform Tool
	Grid Lock – Used to show the grid spacing on the drawing.
	Delete Any – Deletes whole line in a drawing.
	Delete Part – Deletes part of lines to the nearest two intersections.



## Hand Tools: Files

### Hardwood

Hardwoods come from deciduous trees, which have large flat leaves that fall in the autumn. Hardwoods take longer to grow, are not easily sourced and are expensive to buy.

Examples: Beech (utensils), Oak (cabinet), Pine (window frame).

Manufactured boards are usually made from timber waste and adhesive. To make them more aesthetically pleasing they are often veneered. They are cheap to buy.

Examples: Oak veneer on chipboard, Plywood, Chipboard, MDF.

### Softwood

Softwoods come from coniferous trees. These often have pines or needles, and they stay evergreen all year round - they do not lose leaves in the autumn. They are faster growing than hardwoods, making them cheaper to buy, and are considered a sustainable material.

Examples: Pine, Spruce, Larch.

Manufactured Board



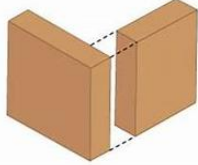
# Knowledge Goals: Materials 1 - Sweet Dispenser

## Wood Joints

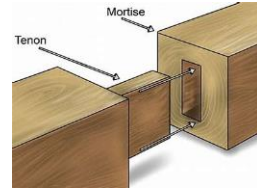
Dowel Joint



Butt Joint



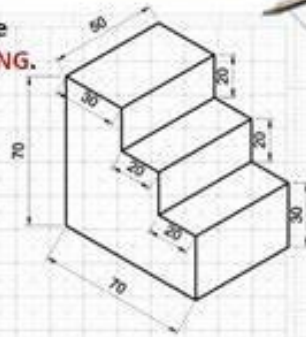
Mortice and Tenon



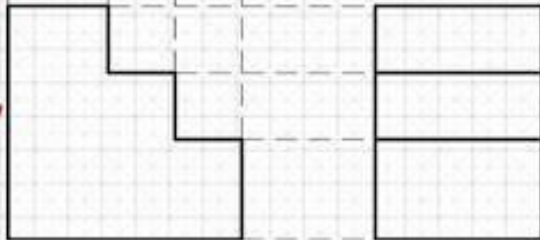
## Orthographic Projection

Now look at this example using a set of steps, I have included the dimensions on the **ISOMETRIC DRAWING**.

Plan View (Top)



Front View



End View (Side)



Note how the three drawings are laid out, all in line with each other and each has been drawn to scale.

## Avoiding Design Fixation

### SCAMPER



#### S SUBSTITUTE

Replace a think or concept with something else

#### C COMBINE

Unit? What? Who? Ideas? Materials?

#### A ADAPT

Adjust to a new purpose. Re-shape? Tune-up?

#### M MODIFY, MAGNIFY, MINIFY

Change the color, sound, motion form, size  
Make it larger, stronger, thicker, higher, longer  
Make it smaller, lighter, slower, less frequent, reduce

#### P PUT TO ANOTHER USE

Change when, where, location, time or how to use it.

#### E ELIMINATE

Omit, get rid of, cut out, simplify, weed out...

#### R REARRANGE, REVERSE

Change the order, sequence, pattern, layout, plan, scheme, regroup, redistribute...

## Health and Safety

It is really important we **ASSESS** the **RISK** and **REDUCE** the **RISK** of Injury by **LISTENING** To the **TRAINING** and following the correct **PPE** usage

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## 6R's - Sustainability

**Recycle** - Take an existing product that has become waste and re-process the material for use in a new product.

**Reuse** - Take an existing product that's become waste and use the material or parts for another purpose, without processing it.

**Reduce** - Minimise the amount of material and energy used during the whole of a products life cycle.

**Refuse** - Don't accept a product at all if you don't need it or if its environmentally or socially unsustainable.

**Rethink** - Our current lifestyles and the way we design and make.

**Repair** - When a product breaks down or doesn't function properly, fix it.



# Knowledge Goals: PDEV

**Lesbian:** a woman who is sexually attracted to women.

**Gay:** a man who is sexually attracted to men.

**Bisexual:** someone who is sexually attracted to both men and women.

**Transgender:** people whose gender identity, expression or behavior is different from those typically associated with their assigned sex at birth.

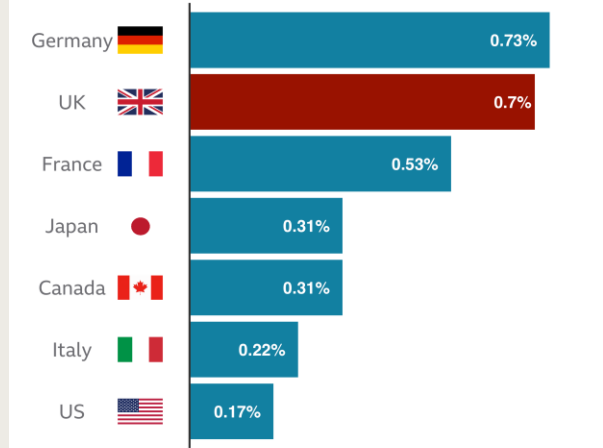
**Queer:** an umbrella term for those who wish to not categorize sex, sexuality or gender.

**Intersex:** a person who is born with a reproductive or sexual anatomy that doesn't fit the typical female or male definitions.

**Asexual:** someone who does not experience sexual attraction.

## How the UK compares on aid spending

Spending as a percentage of Gross National Income, 2020



Source: OECD



THE COUNTER TRAFFICKING DATA COLLABORATIVE

### GLOBAL DATA HUB ON HUMAN TRAFFICKING

The Counter Trafficking Data Collaborative (CTDC) is the first global data hub on human trafficking, with data contributed by organizations from around the world.

108,613 INDIVIDUAL CASES

164 COUNTRIES OF EXPLOITATION

175 NATIONALITIES

Source: CTDC Global Dataset: Counter Trafficking Data Collaborative, 2020.

Note: The data in this chart are from the Counter Trafficking Data Collaborative (CTDC); the global data hub on human trafficking featuring the largest case level datasets on human trafficking from different organizations around the world. For more information, go to [www.ctdcdatabase.org](http://www.ctdcdatabase.org).

## PEER PRESSURE

Peer pressure is the influence exerted by a peer group, encouraging individuals to change their attitudes, values, or behaviors to conform to group norms.

### OVERVIEW

Peer pressure occurs due to a desire to fit in with a peer group. It can be both positive, promoting healthy habits or behaviors, and negative, leading to risky or harmful activities. While typically associated with adolescents, peer pressure can affect individuals of any age group as it fundamentally involves the human desire to be accepted and belong within a social context.

### EXAMPLE

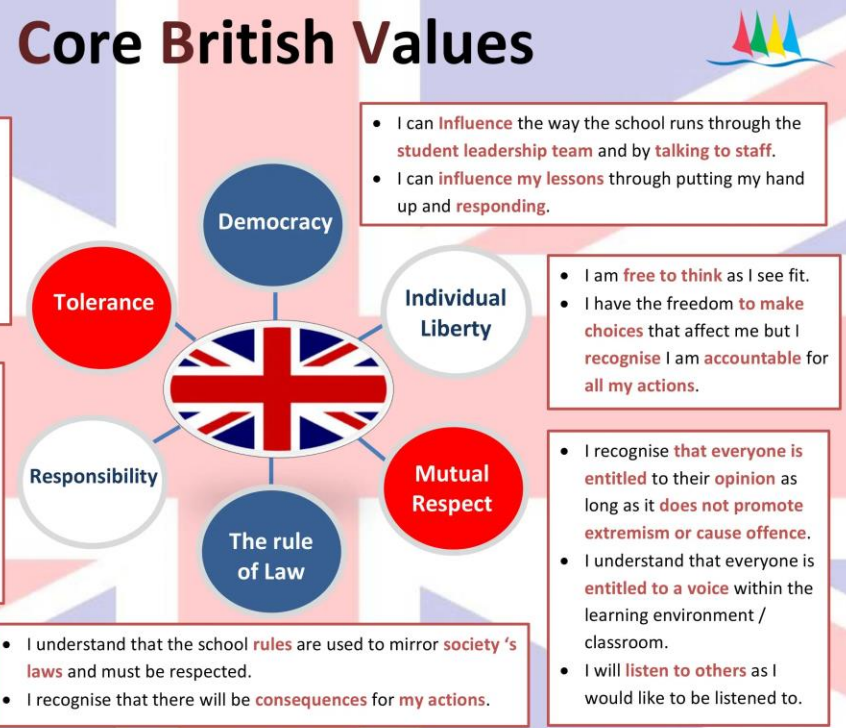
- **Academic performance:** Friends can motivate each other to study harder and achieve better grades.
- **Fashion trends:** Young people can feel pressure to conform to current styles or trends popular within their friend group.
- **Environmental consciousness:** Peers can influence each other to adopt eco-friendly habits like recycling.

HELPFULPROFESSOR.COM

## Core British Values

- I recognise that it is **unacceptable** to dismiss the **beliefs and opinions** of anyone.
- I understand that discussions about **sensitive issues** will be **controlled and structured**.

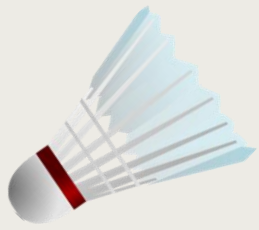
- I recognise that I am as **equally responsible** for my learning as the teacher.
- I take **responsibility** for all my **actions** – good or bad.
- We **all** have a **responsibility** to **promote and protect** the wellbeing of others.



Social – Moral – Spiritual – Cultural

British Values  Shared Values  Our Values





## Badminton

- ❑ **Serving** – I can perform the backhand and forehand serve with accuracy, landing the shuttle in the opponents' service box.
- ❑ **The Clears** – I know that the clear is a defensive stroke and can be used to slow the pace of the game and regain position on court
- ❑ **The Drop Shot** – I understand that the drop shot is an attacking shot and why.
- ❑ **The Smash** – I can hit the shuttle with power and land the shuttle mid court, showing good accuracy.
- ❑ **Net Play** – I can accurately hit the shuttle low over the net and land close to the net.
- ❑ **Game Play** – I know which side of the court to serve from depending on if the score is odd or even.



## Hockey

- ❑ **Ball Control** – I can use reverse stick at the appropriate times to control the ball.
- ❑ **Passing** – I can demonstrate passes at increasing variety, speed and accuracy. On reception I rotate the stick forward to ensure the ball is trapped and available.
- ❑ **Dribbling** – I can move at speed with the ball avoiding challenges by changing speed or direction.
- ❑ **Tackling** – I can apply the block tackle effectively and safely in game situations on many occasions.
- ❑ **Game Situations** – I can organise effective attacking opportunities quickly in free hit situation.

# Knowledge Goals: PE

## Football



- ❑ **Ball Control** – I can control the ball with most body parts with some consistency
- ❑ **Passing** – I can occasionally pass the ball accurately using different parts of my foot whilst under *pressure*.
- ❑ **Defending** – I can decide whether to commit to a tackle or *jockey* my opponent.
- ❑ **Dribbling** – I can dribble the ball for some distance as long as it's on my stronger side.
- ❑ **Shooting** – I can accurately shoot from a moderate distance using different techniques.
- ❑ **Game Situations** – I move into space in games and communicate with teammates and can maintain *possession* while decision making.



## Netball

- ❑ **Passing** – I can effectively pass a ball to a player in a game situation.
- ❑ **Footwork** – I can demonstrate good use of the footwork rule in a game situation. I can pivot on my landing foot consistently.
- ❑ **Attacking skills** – I am able to re-offer under pressure from a defender to create space to receive the ball.
- ❑ **Defending skills** – I am able to cleanly intercept a ball with two hands in a small game situation.
- ❑ **Game Situations** – I am able to demonstrate a basic set play in a game situation with little or no pressure.



## Gymnastics

- ❑ **Floor** – I can perform a paired sequence, performing advanced movements showing consistently high levels of control and tension.
- ❑ **Jumps** – I can successfully incorporate a variety of jumps to change the level of a sequence.
- ❑ **Apparatus** – I can adapt the apparatus to perform a multi-move sequence using a range of vaults with correct technique.
- ❑ **Performance** – I can evaluate another group's sequence, making specific suggestions on how to improve the level of their performance.



## Rugby

- ❑ **Evasion/Support Play** – I can demonstrate principles of attack when to penetrate or out flank. I can support in different formations including 'magic diamond'.
- ❑ **Passing & Catching** – I can pass and catch a ball over a longer distance with some accuracy, making decisions on the weight and length of the pass. Developing skills for quick passing to maximise potential overlaps
- ❑ **Tackling/Defensive Strategies** – I can demonstrate the principles of defence, denial of space, pressure, open gate, tackle, cover and regain possession
- ❑ **Rucks & Mauls** – I can set up a micro maul or micro ruck if none of the 'continuity' options are possible.
- ❑ **Game Play** – I can plan and execute set piece plays from a 'scrum' or 'line out'





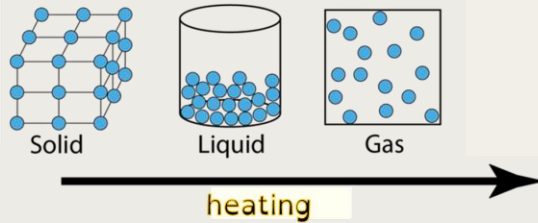


# Knowledge Goals: Physics – Particle model

## Kinetic theory

The kinetic particle model explains the properties of the different states of matter. Particles in solids, liquids and gases have different amounts of energy. The particles are arranged differently and move in different ways.

## States of Matter



## Heat

Heat is a word used to describe the energy shifted in a system during a change of temperature or a change of state. Heat is measured in joules (J).

## Temperature

- Temperature is a measure of how hot or cold something is.
- Temperature is a measure of the average kinetic energy of the particles in a system.
- Temperature is measured in degrees celsius (°C). Absolute temperature is measured in kelvin (K). A temperature of absolute zero (0 kelvin) is the point at which the particles in a body stop vibrating.

## Changing temperature

- When energy is shifted into a body its temperature can increase.
- During a change of temperature, energy is shifted in or out of the kinetic energy store of particles.
- The amount of heat stored or released as a substance changes temperature can be calculated using the equation:

$$\text{energy} = \text{mass} \times \text{specific heat capacity} \times \text{temperature change}$$

- The **specific heat capacity** of a material is the energy required to raise one kilogram (kg) of the material by one degree Celsius (°C) without a change of state.

## Changing state

- When energy is shifted into a body at its melting or boiling point, it will change state.
- Temperature remains constant during a change of state.
- During a change of state, energy is shifted in or out of the potential energy store of particles.
- Forces of attraction between particles are weakened during melting and overcome during boiling.
- The amount of heat stored or released as a substance changes state can be calculated using the equation:

$$\text{energy} = \text{mass} \times \text{specific latent heat}$$

- Specific latent heat is the amount of energy required to change the state of 1 kilogram (kg) of a material without changing its temperature.



# Knowledge Goals: Maths

## Unit 4 – Sequences

Topic	Video	Resource
Sequences	<a href="#">Watch this</a>	<a href="#">Complete this</a> <a href="#">Check your work</a>
Important sequences - Fibonacci	<a href="#">Watch this</a>	<a href="#">Complete this</a> <a href="#">Check your work</a>
**Nth term quadratic sequences	<a href="#">Watch this</a>	<a href="#">Complete this</a> <a href="#">Check your work</a>

### \*\*Extension tasks

#### Arithmetic/ Geometric sequences

**Arithmetic Sequences** change by a common difference. This is found by addition or subtraction between terms

**Geometric Sequences** change by a common ratio. This is found by multiplication/ division between terms.

**Term to term rule** – how you get from one term (number in the sequence) to the next term.

**Position to term rule** – take the rule and substitute in a position to find a term. E.g. Multiply the position number by 3 and then add 2.

#### Other sequences

**Fibonacci Sequence** Each term is the sum of the previous two terms  
1, 1, 2, 3, 5, 8 ...

**Triangular Numbers** – look at the formation  
 1, 3, 6, 10, 15 ...

**Square Numbers** – look at the formation  
 1, 4, 9, 16 ...

Sequences are the repetition of a pattern

#### Linear and Non Linear Sequences

**Linear Sequences** – increase by addition or subtraction and the same amount each time

**Non-linear Sequences** – do not increase by a constant amount – quadratic, geometric and Fibonacci

- Do not plot as straight lines when modeled graphically
- The differences between terms can be found by addition, subtraction, multiplication or division

**Fibonacci Sequence** – look out for this type of sequence  
0 1 1 2 3 5 8 ...

Each term is the sum of the previous two terms

#### Sequence in a table and graphically

Position: the place in the sequence

Term: the number or variable (the number of squares in each image)

**In a table**

Position	1	2	3
Term	3	5	7

**Graphically**

Because the terms increase by the same addition each time this is linear – as seen in the graph

#### Sequences from algebraic rules

This is substitution! This is not linear as there is a power for n

$3n + 7$  This will be linear - note the single power of n. The values increase at a constant rate.

$3n^2 + 7$  This is not linear as there is a power for n

$2n - 5$  → Substitute the number of the term you are looking for in place of 'n'

eg  
1<sup>st</sup> term -  $2(1) - 5 = -3$   
2<sup>nd</sup> term -  $2(2) - 5 = -1$   
100<sup>th</sup> term -  $2(100) - 5 = 195$

#### Complex algebraic rules

Misconceptions and comparisons

$2n^2$  2 times whatever n squared is

$(2n)^2$  2 times n then square the answer

eg  
1<sup>st</sup> term -  $2 \times 1^2 = 2$   
2<sup>nd</sup> term -  $2 \times 2^2 = 8$   
100<sup>th</sup> term -  $2 \times 100^2 = 20000$

eg  
1<sup>st</sup> term -  $(2 \times 1)^2 = 4$   
2<sup>nd</sup> term -  $(2 \times 2)^2 = 16$   
100<sup>th</sup> term -  $(2 \times 100)^2 = 40000$

$n(n+5)$  → eg  
1<sup>st</sup> term -  $1(1+5) = 6$   
2<sup>nd</sup> term -  $2(2+5) = 14$   
100<sup>th</sup> term -  $100(100+5) = 10500$

You don't need to expand the expression

#### Checking for a term in a sequence

Form an equation

Is 201 in the sequence  $3n - 4$ ?

Algebraic rule →  $3n - 4 = 201$  ← Term to check

Solving this will find the position of the term in the sequence. ONLY an integer solution can be in the sequence.

#### Finding the algebraic rule

This is the 4 times table → 4, 8, 12, 16, 20....

$4n$

↓ ↓ ↓

7, 11, 15, 19, 22 ←

This has the same constant difference – but is 3 more than the original sequence

$4n + 3$

This is the constant difference between the terms in the sequence

This is the comparison (difference) between the original and new sequence

# Knowledge Goals: Maths

## Unit 5- Coordinates and Graphs

Topic	Video	Resource
Plot and read coordinates	<a href="#">Watch This</a>	<a href="#">Hit the Coordinate Coordinates Picture Axes and coordinates KS3 BBC Bitesize</a>
Midpoint and coordinate problems	<a href="#">Watch this</a>	<a href="#">Worksheet</a> <a href="#">Check your answers</a>
Horizontal and vertical Lines	<a href="#">Watch this X equals</a> <a href="#">Watch this Y equals</a>	<a href="#">Worksheet</a> <a href="#">Check your answers</a>
Plot straight line graphs	<a href="#">Watch This</a>	<a href="#">Worksheet</a> <a href="#">Check your answers</a>
Identify gradient and y intercept	<a href="#">Watch This</a>	<a href="#">Online Worksheet</a>
Use $y=mx+c$	<a href="#">Watch This</a>	<a href="#">Graphing Slope Intercept Form</a> <a href="#">Quick Online Practice</a> <a href="#">Worksheet</a>
Parallel lines	<a href="#">Watch this</a>	<a href="#">Worksheet</a> <a href="#">Check your answers</a>
**Perpendicular lines	<a href="#">Watch this</a>	<a href="#">Worksheet</a> <a href="#">Check your answers</a>
**Solving problems using $y= mx+c$	<a href="#">Watch this</a>	<a href="#">Worksheet</a> <a href="#">Check your answers</a>

1. Coordinates	Written in <b>pairs</b> . The <b>first</b> term is the <b>x-coordinate</b> (movement <b>across</b> ). The <b>second</b> term is the <b>y-coordinate</b> (movement <b>up or down</b> )		5. Gradient	The gradient of a line is how <b>steep</b> it is. <b>Gradient =</b> $\frac{\text{Change in } y}{\text{Change in } x} = \frac{\text{Rise}}{\text{Run}}$ The gradient can be positive (sloping upwards) or negative (sloping downwards)																
2. Midpoint of a Line	Method 1: <b>add the x coordinates and divide by 2, add the y coordinates and divide by 2</b>  Method 2: Sketch the line and find the values half way between the two x and two y values.	Find the midpoint between (2,1) and (6,9) $\frac{2+6}{2} = 4 \text{ and } \frac{1+9}{2} = 5$ So, the midpoint is (4,5)	6. Finding the Equation of a Line <b>given a point and a gradient</b>	<b>Substitute in the gradient (m) and point (x,y)</b> in to the equation $y = mx + c$ and solve for c.	Find the equation of the line with gradient 4 passing through (2,7). $y = mx + c$ $7 = 4 \times 2 + c$ $c = -1$ $y = 4x - 1$															
3. Linear Graph	<b>Straight line graph.</b>  The general equation of a linear graph is $y = mx + c$  where <b>m</b> is the <b>gradient</b> and <b>c</b> is the <b>y-intercept</b> .  The <b>equation</b> of a linear graph can contain an <b>x-term</b> , a <b>y-term</b> and a <b>number</b> .	Example:  Other examples: $x = y$ $y = 4$ $x = -2$ $y = 2x - 7$ $y + x = 10$ $2y - 4x = 12$	7. Finding the Equation of a Line <b>given two points</b>	Use the two points to <b>calculate the gradient</b> . Then <b>repeat the method above</b> using the gradient and either of the points.	Find the equation of the line passing through (6,11) and (2,3) $m = \frac{11 - 3}{6 - 2} = 2$ $y = mx + c$ $11 = 2 \times 6 + c$ $c = -1$ $y = 2x - 1$															
4. Plotting Linear Graphs	Method 1: <b>Table of Values</b> Construct a table of values to calculate coordinates.  Method 2: <b>Gradient-Intercept Method</b> (use when the equation is in the form $y = mx + c$ ) 1. Plots the y-intercept 2. Using the gradient, plot a second point. 3. Draw a line through the two points plotted.  Method 3: <b>Cover-Up Method</b> (use when the equation is in the form $ax + by = c$ ) 1. Cover the x term and solve the resulting equation. Plot this on the x - axis. 2. Cover the y term and solve the resulting equation. Plot this on the y - axis. 3. Draw a line through the two points plotted.	<table border="1"><tr><td>x</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td><math>y = x + 3</math></td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr></table>  	x	-3	-2	-1	0	1	2	3	$y = x + 3$	0	1	2	3	4	5	6	8. Parallel Lines	If two lines are <b>parallel</b> , they will have the <b>same gradient</b> . The value of m will be the same for both lines.  Are the lines $y = 3x - 1$ and $2y - 6x + 10 = 0$ parallel?  Answer: Rearrange the second equation in to the form $y = mx + c$ $2y - 6x + 10 = 0 \rightarrow y = 3x - 5$  Since the two gradients are equal (3), the lines are parallel.
x	-3	-2	-1	0	1	2	3													
$y = x + 3$	0	1	2	3	4	5	6													
9. Perpendicular Lines	If two lines are <b>perpendicular</b> , the <b>product</b> of their <b>gradients</b> will always equal <b>-1</b> . The gradient of one line will be the <b>negative reciprocal</b> of the gradient of the other line.  You may need to rearrange equations of lines to compare gradients (they need to be in the form $y = mx + c$ )	Find the equation of the line perpendicular to $y = 3x + 2$ which passes through (6,5)  Answer: As they are perpendicular, the gradient of the new line will be $-\frac{1}{3}$ as this is the negative reciprocal of 3. $y = mx + c$	$5 = -\frac{1}{3} \times 6 + c$ $c = 7$ $y = -\frac{1}{3}x + 7$ Or $3x + x - 7 = 0$																	

\*\*Extension tasks

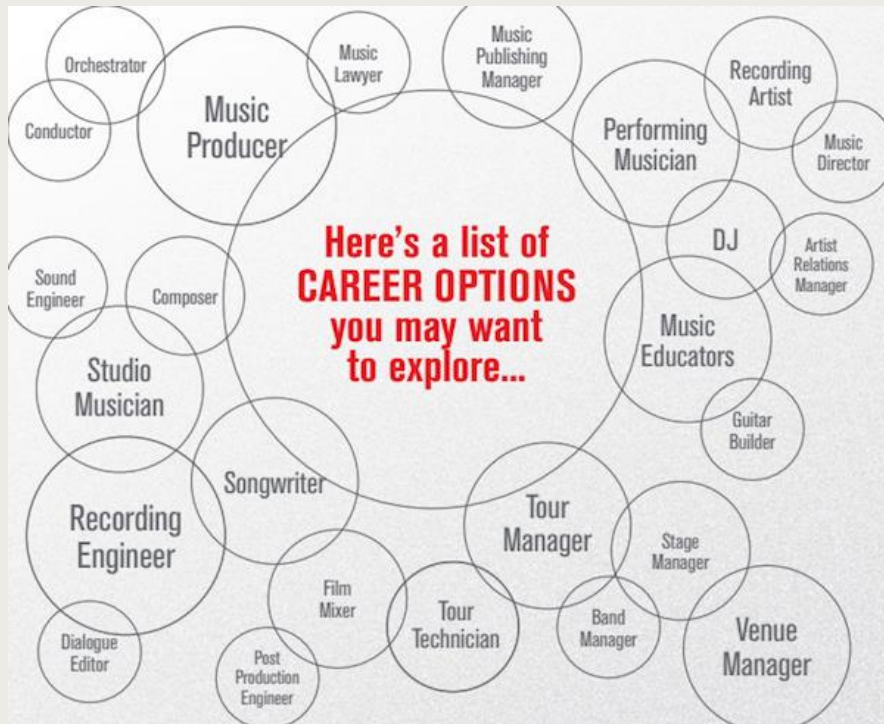


# Knowledge Goals: Music

## Careers in the Music Industry

### *Why Music?*

The music industry continues to evolve, and if you are interested in a career in music, the traditional jobs of artist, performer or composer are just the tip of the iceberg. In this unit, you will discover a small snapshot of what a music career in the 21st century could entail. You will learn about how music has evolved through the use of technology and you will explore the relationships between a songwriter and a lyricist. You will take on the role of a journalist to review a new and upcoming artist, and you will also get chance to teach one of your peers. Finally, you will take on the role of festival planner and learn how to budget



## The songwriter

Sometimes an artist will write their own songs, but sometimes they will work with another person or a team of writers. In some cases, people work as a songwriter and the record label will match a song with an artist they think could make it a hit.

## The journalist

Traditionally, a journalist would have worked for a music magazine, listened to new records and written a review. Today, because of technology, it is easy for anyone to write a review and post it online, so a modern day journalist may also be a photographer, blogger or an 'influencer'.

## The Event Manager

A festival planner or event manager may have to understand several different areas of the music industry, including health and safety, working with police and medical staff, applying for performance licenses, booking venues and managing budgets. With lots of tight deadlines, it is probably quite a stressful job!

## The Teacher

A teacher will need to be able to think on the spot and also teach the same content in a variety of ways. This is known as 'differentiation'.

## Great Partnerships

Elton John & Bernie Taupin

John Lennon & Paul McCartney

## Wider Listening

YouTube: Searches for 'careers in the music industry' offer lots of videos with advice and guidance, depending on the career



# Knowledge Goals: PRE Ethics

## Euthanasia

### Animal rights



More and more people are questioning the ways human beings use animals, and some are actively turning away from using animal products in their daily lives. Religious and non-religious people hold varying views about the status of animals, and of animal rights.



The British Egg Industry Council has strict rules about egg classification. To qualify eggs as free range, chickens must have access to the outside for at least eight hours a day.

Find out more!



Euthanasia means 'gentle and easy death'. The term is used to describe the deliberate ending of a person's life for compassionate reasons because they are suffering, eg from a painful or incurable disease.

Euthanasia is illegal in the UK. Euthanasia is punishable by law and can carry a maximum penalty of life imprisonment. Assisted suicide is also illegal in the UK. It is punishable by law and can carry a prison sentence of up to 14 years.



Find out more!



There are powerful arguments for and against euthanasia. People with different beliefs may agree with many of these arguments. For example, an **atheist** may recognise that there are dangers in allowing euthanasia (the slippery slope argument). However, they might also feel that an individual's right to direct their own life outweighs other good arguments. Many religious believers are likely to have great sympathy with arguments that a person should not have to live in agony. Despite this, the idea for them that life is sacred may outweigh other arguments, however good.

## Capital punishment

Capital punishment is the death penalty. It is **illegal** in the UK. It was abolished for the crime of murder in 1965. It was then abolished for all crimes in 1998.

In those countries where it is legal, capital punishment aims to **protect society, deter others from committing crime and compensate the victims of the crime** (this is known as reparation).

We will examine arguments for and against the death penalty including religious views.

“ *The punishment shall be life for life, eye for eye, tooth for tooth.*

Exodus 21:23



“ *Ask God to bless those who persecute you.*

Romans 12:14

Find out more!







# Knowledge Goals: Spanish

<b>¿Dónde vives?</b> Vivo en el... norte/noreste/noroeste... sur/sureste/suroeste...	<b>Where do you live?</b> I live in the... north/northeast/northwest... south/southeast/southwest...	este/oeste/centro... de Inglaterra/Escocia de Gales/Irlanda (del Norte)	east/west/centre... of England/Scotland of Wales/(Northern) Ireland
<b>¿Qué haces en verano?</b> En verano/invierno... chateo en la red cocino para mi familia descargo canciones escribo correos hago natación/esqui/windsurf hago una barbacoa juego al baloncesto/fútbol	<b>What do you do in summer?</b> In summer/winter... I chat online I cook for my family I download songs I write emails I go swimming/skiing/windsurfing I have a barbecue I play basketball/football	monto a caballo/en bici nado en el mar salgo con mis amigos/as toco la guitarra trabajo como voluntario/a veo la tele voy al polideportivo/al parque/ a un centro comercial voy de paseo	I go horse/riding/cycling I swim in the sea I go out with my friends I play the guitar I work as a volunteer I watch TV I go to the sports centre/to the park/ to a shopping centre I go for a walk
<b>¿Con qué frecuencia?</b> siempre a menudo todos los días a veces	<b>How often?</b> always often every day sometimes	de vez en cuando una vez a la semana dos o tres veces al año (casi) nunca	from time to time once a week two or three times a year (almost) never
<b>¿Qué tiempo hace?</b> Hace buen/mal tiempo. Hace calor/frío/sol/viento. Llueve/Nieva. El tiempo es variable.	<b>What's the weather like?</b> It's good/bad weather. It's hot/cold/sunny/windy. It's raining/snowing. The weather is changeable.	El clima es caluroso/soleado. Hay niebla/tormenta. Hay chubascos. Está nublado.	The climate is hot/sunny. It's foggy/stormy. There are showers. It's cloudy.
<b>¿Qué te gusta hacer?</b> Soy adicto/a a... Soy un(a) fanático/a de... ya que/dado que/puesto que Prefiero... Me gusta... Me encanta/Me mola/Me chifla/ Me flipa/Me apasiona... No me gusta (nada)... Odio... A (mi padre) le gusta... Nos encanta... bucear estar al aire libre	<b>What do you like doing?</b> I'm addicted to... I'm a ... fan/fanatic. given that/since I prefer... I like... I love... I don't like... (at all) I hate... (My dad) likes... We love... diving being outdoors	estar en contacto con los amigos hacer artes marciales hacer deportes acuáticos ir al cine/a la pista de hielo ir de compras leer (un montón de revistas) usar el ordenador ver películas Prefiero veranear... en el extranjero/en España en la costa/en el campo en la montaña/en la ciudad	being in touch with friends doing martial arts doing water sports going to the cinema/ice rink going shopping reading (loads of magazines) using the computer watching films I prefer to spend the summer... abroad/in Spain on the coast/in the country in the mountains/in the city
<b>¿Adónde fuiste de vacaciones?</b> hace una semana/un mes/un año hace dos semanas/meses/años fui de vacaciones a... Francia/Italia/Turquía ¿Con quién fuiste? Fui... con mi familia/insti	<b>Where did you go on holiday?</b> a week/month/year ago two weeks/months/years ago I went on holiday to... France/Italy/Turkey Who did you go with? I went... with my family/school	con mi mejor amigo/a solo/a ¿Cómo viajaste? Viajé... en autocar/avión en barco/coche/tren	with my best friend alone How did you travel? I travelled... by coach/plane by boat/car/train
<b>¿Qué hiciste?</b> primero luego más tarde después finalmente Lo mejor fue cuando... Lo peor fue cuando... aprendí a hacer vela comí muchos helados compré recuerdos descansé fui al acuario hice turismo	<b>What did you do?</b> first then later after finally The best thing was when... The worst thing was when... I learned to sail I ate lots of ice creams I bought souvenirs I rested I went to the aquarium I went sightseeing	llegué tarde al aeropuerto perdí mi móvil saqué fotos tomé el sol tuve un accidente en la playa vi un partido visité el Park Güell vomité en una montaña rusa Puedes... descubrir el Museo Picasso disfrutar del Barrio Gótico pasear por las Ramblas subir al Monumento a Colón ver los barcos en el puerto	I arrived at the airport late I lost my mobile I took photos I sunbathed I had an accident on the beach I saw/watched a match I visited Park Güell I was sick on a roller coaster You can... discover the Picasso Museum enjoy the gothic quarter walk along Las Ramblas go up the Columbus Monument see the boats in the port
<b>¿Qué tal lo pasaste?</b> Me gustó/Me encantó. Lo pasó bomba/fenomenal. Lo pasó bien/mal/fatal. Fue... inolvidable/increíble impresionante/flipante horroroso	<b>How was it?</b> I liked it/I loved it. I had a great time. I had a good/bad/awful time. It was... unforgettable/incredible impressive/awesome awful	un desastre ¿Qué tiempo hizo? Hizo buen/mal tiempo. Hizo calor/frío/sol/viento. Hubo niebla/tormenta. Llovió/Nevó.	a disaster What was the weather like? It was good/bad weather. It was hot/cold/sunny/windy. It was foggy/stormy. It rained/snowed.

<b>¿Dónde vives?</b> Vivo en el... norte/noreste/noroeste... sur/sureste/suroeste...	<b>Where do you live?</b> I live in the... north/northeast/northwest... south/southeast/southwest...	este/oeste/centro... de Inglaterra/Escocia de Gales/Irlanda (del Norte)	east/west/centre... of England/Scotland of Wales/(Northern) Ireland
<b>¿Qué haces en verano?</b> En verano/invierno... chateo en la red cocino para mi familia descargo canciones escribo correos hago natación/esqui/windsurf hago una barbacoa juego al baloncesto/fútbol	<b>What do you do in summer?</b> In summer/winter... I chat online I cook for my family I download songs I write emails I go swimming/skiing/windsurfing I have a barbecue I play basketball/football	monto a caballo/en bici nado en el mar salgo con mis amigos/as toco la guitarra trabajo como voluntario/a veo la tele voy al polideportivo/al parque/ a un centro comercial voy de paseo	I go horse/riding/cycling I swim in the sea I go out with my friends I play the guitar I work as a volunteer I watch TV I go to the sports centre/to the park/ to a shopping centre I go for a walk
<b>¿Con qué frecuencia?</b> siempre a menudo todos los días a veces	<b>How often?</b> always often every day sometimes	de vez en cuando una vez a la semana dos o tres veces al año (casi) nunca	from time to time once a week two or three times a year (almost) never
<b>¿Qué tiempo hace?</b> Hace buen/mal tiempo. Hace calor/frío/sol/viento. Llueve/Nieva. El tiempo es variable.	<b>What's the weather like?</b> It's good/bad weather. It's hot/cold/sunny/windy. It's raining/snowing. The weather is changeable.	El clima es caluroso/soleado. Hay niebla/tormenta. Hay chubascos. Está nublado.	The climate is hot/sunny. It's foggy/stormy. There are showers. It's cloudy.
<b>¿Qué te gusta hacer?</b> Soy adicto/a a... Soy un(a) fanático/a de... ya que/dado que/puesto que Prefiero... Me gusta... Me encanta/Me mola/Me chifla/ Me flipa/Me apasiona... No me gusta (nada)... Odio... A (mi padre) le gusta... Nos encanta... bucear estar al aire libre	<b>What do you like doing?</b> I'm addicted to... I'm a ... fan/fanatic. given that/since I prefer... I like... I love... I don't like... (at all) I hate... (My dad) likes... We love... diving being outdoors	estar en contacto con los amigos hacer artes marciales hacer deportes acuáticos ir al cine/a la pista de hielo ir de compras leer (un montón de revistas) usar el ordenador ver películas Prefiero veranear... en el extranjero/en España en la costa/en el campo en la montaña/en la ciudad	being in touch with friends doing martial arts doing water sports going to the cinema/ice rink going shopping reading (loads of magazines) using the computer watching films I prefer to spend the summer... abroad/in Spain on the coast/in the country in the mountains/in the city
<b>¿Adónde fuiste de vacaciones?</b> hace una semana/un mes/un año hace dos semanas/meses/años fui de vacaciones a... Francia/Italia/Turquía ¿Con quién fuiste? Fui... con mi familia/insti	<b>Where did you go on holiday?</b> a week/month/year ago two weeks/months/years ago I went on holiday to... France/Italy/Turkey Who did you go with? I went... with my family/school	con mi mejor amigo/a solo/a ¿Cómo viajaste? Viajé... en autocar/avión en barco/coche/tren	with my best friend alone How did you travel? I travelled... by coach/plane by boat/car/train
<b>¿Qué hiciste?</b> primero luego más tarde después finalmente Lo mejor fue cuando... Lo peor fue cuando... aprendí a hacer vela comí muchos helados compré recuerdos descansé fui al acuario hice turismo	<b>What did you do?</b> first then later after finally The best thing was when... The worst thing was when... I learned to sail I ate lots of ice creams I bought souvenirs I rested I went to the aquarium I went sightseeing	llegué tarde al aeropuerto perdí mi móvil saqué fotos tomé el sol tuve un accidente en la playa vi un partido visité el Park Güell vomité en una montaña rusa Puedes... descubrir el Museo Picasso disfrutar del Barrio Gótico pasear por las Ramblas subir al Monumento a Colón ver los barcos en el puerto	I arrived at the airport late I lost my mobile I took photos I sunbathed I had an accident on the beach I saw/watched a match I visited Park Güell I was sick on a roller coaster You can... discover the Picasso Museum enjoy the gothic quarter walk along Las Ramblas go up the Columbus Monument see the boats in the port
<b>¿Qué tal lo pasaste?</b> Me gustó/Me encantó. Lo pasó bomba/fenomenal. Lo pasó bien/mal/fatal. Fue... inolvidable/increíble impresionante/flipante horroroso	<b>How was it?</b> I liked it/I loved it. I had a great time. I had a good/bad/awful time. It was... unforgettable/incredible impressive/awesome awful	un desastre ¿Qué tiempo hizo? Hizo buen/mal tiempo. Hizo calor/frío/sol/viento. Hubo niebla/tormenta. Llovió/Nevó.	a disaster What was the weather like? It was good/bad weather. It was hot/cold/sunny/windy. It was foggy/stormy. It rained/snowed.









